**Participating in a shared cognitive space: An exploration of working collaboratively and longer-term performance of a complex grammatical structure**

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James Scotland

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**Acknowledgements**

To the driver in the rain, thank you.

**Abstract**

Qatar's education system has recently been subjected to a process of deep structural reform. One of the beliefs which underpins this reform is the assumption that learner-centred pedagogy is more effective than traditional teacher-centred pedagogy. However, there is limited empirical evidence from a Qatari classroom context regarding the effectiveness of using learner-centred pedagogies. This lack of empirical evidence extends to the teaching of English as a foreign language. This study employed Vygotskian sociocultural theory as a lens to investigate the effects of working collaboratively on learners' longer-term performance of two grammatical structures, the simple past passive and the present continuous passive, as well as the cognitive processes involved.

Interventionist dynamic assessment was used to quantify the linguistic performance of male Arabic undergraduate EFL learners ($N = 52$) three times (pretest, posttest, and delayed posttest) over a 12-week period. In-between the pretest and the posttest, six form-focused treatment tasks were administered. The experimental group ($n = 20$) completed the treatment tasks collaboratively; the comparison group ($n = 16$) completed the treatment tasks individually; and the control group ($n = 16$) did not complete the treatment tasks. In addition, the genetic method was employed to trace the linguistic development of four participants in the experimental group. These four participants were audio-recorded as they collaboratively completed each treatment session.

Mood's median test (Mood, 1954) found a pretest to posttest statistically significant difference ($M = 7.70$, $df = 1$, $p = 0.01$) between the performances of the experimental and control groups for the structure of the simple past passive which is moderate to large in size (Cramér's $V = 0.46$). However for both target structures, no statistically significant difference was found between the experimental group and the comparison group, suggesting that the treatment condition of working collaboratively was not more effective in promoting learners' linguistic development than the treatment condition of working individually. Additionally, the descriptive statistics revealed high levels of individual variation. Of the four participants who were audio-recorded, the journey of one learner is presented. This data was analysed using a

microgenetic approach with LREs (Swain and Lapkin, 1995, 1998, 2002) as the unit of analysis.  The microgenetic analysis shows how working collaboratively provides learners with access to a shared cognitive space.  Within this space, they can employ language as a cognitive tool to access other-regulation from their peers and deploy their own self-regulatory strategies.

The experience of an individual was explored within the context of the linguistic gains made by the collective to whom he belongs.  Thus, even though the statistical analysis of the results suggests that working collaboratively is not more effective in facilitating learners' linguistic development than working individually, the process of language learning has been connected to the outcome of language learning through the results of the descriptive statistics and the microgenetic analysis.  This study contributes to a better understanding of: the types of pedagogies that may be effective in a Qatari undergraduate context, why collaborative learning can be effective, how knowledge which is initially social can take on a psychological function, and how the Vygotskian sociocultural methodologies of the genetic method and dynamic assessment can be integrated into an SLA design.

**Key words**

collaborative learning; focus on form; interventionist dynamic assessment; microgenetic analysis; peer mediation; Qatar; shared cognitive space; Vygotskian sociocultural theory

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**Abbreviations and key terms defined**

Auxiliary devices: tools, including both material objects (e.g., hammers) as well as symbolic tools (e.g., language and scientific concepts), which allow humans to control and reorganize either a world which is comprised of signs and symbols or a world which is comprised of material objects

Genesis: the process of changing over time

Inner speech: pure meaning in which all language has been stripped away

Intrapsychological: within the individual

Internalization: the negotiated process through which external higher order mental processes take on a psychological function

Interpsychological: between individuals

Intersubjectivity: a shared understanding

L1: the native language that humans develop first

L2: a language which is learned after the first language

LRE (language related episode): a unit of analysis

Mediation: the act of employing auxiliary devices to connect with and act upon either a world which is comprised of signs and symbols or a world which is comprised of material objects

Other-regulation: the act of organizing, controlling, and transforming another person's psychological functioning through the use of auxiliary devices

Private speech: speech intended for self-regulatory purposes; this type of speech is egocentric in its nature

SCT (sociocultural theory): a theory of human mental development whose underlying premise is that an individual's higher cognitive development originates and continually develops in social interaction

Self-regulation: the act of employing auxiliary devices to intentionally organize, control, and transform one's own psychological functioning

SLA (second language acquisition): the study of processes that underlie the learning of a second language

ZPD (zone of proximal development): "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p.86)

**Chapter 1 – Introduction**

The introduction provides a rationale for the study, explains the study's focus, outlines the approach taken, identifies the significance of the study, and gives a brief overview of its chapters.

*1.1 Rationale*

I am a western trained teacher.  I received both my Bachelor of Education and my Master of Education from universities in the UK; additionally, I have a Diploma in Teaching English to Speakers of Other Languages which originates from the University of Cambridge.  The beliefs and pedagogies which form the foundations of my teaching originate from the Western world.  Throughout my teaching career, I never questioned the need for a learner-centred approach to teaching.  As such, my teaching is laced with learner-centred practices.

Traditionally, teacher-centred learning has involved students receiving a static body of knowledge from an authoritative teacher whose knowledge is not questioned.  The recall of information prevails; learners are expected to memorize the content of lessons then repeat them at exam time.  Teacher-centred learning often involves whole-group instruction, with the teacher standing at the front of the class and lecturing to students who are mostly passive listeners.  Even though the teacher usually calls on students individually to answer questions, there are limited opportunities for teacher-student or student-student interaction (Antón, 1999, p.304).

In contrast to teacher-centred learning, learner-centred learning involves active learning.  Although the concept of learner-centred learning is susceptible to multiple interpretations, in learner-centred learning learners are placed at the centre of the learning process.  "The curriculum reflects the needs of the learner" (Antón, 1999, p.303); thus, "key decisions about what will be taught, how it will be taught, when it will be taught, and how it will be assessed will be made with reference to the learner" (Nunan, 1999, p.11).  This results in learners being given a more active role within the classroom as well as greater agency in the advancement of their education.  Learner-centred practitioners

"advocate the development of curricula and materials that encourage learners to move toward the fully autonomous end of the pedagogical continuum" (Nunan, 1999, p.12). Thus, learners are given more of a voice in what gets taught and how it is learned (Nunan, 1999, p.12). An attempt is made at creating a learning environment which is centred around the learner. Tasks are used which require students to interact with the material, the instructor, and the other learners; inquiry, questioning, critical thinking, reflection, and synthesis are encouraged. Learners are also encouraged to transfer academic content to other contexts and are more involved in the assessment process.

One key element of learner-centred pedagogies is peer mediated learning. Proponents of learner-centred learning believe that due to reasons connected with the mental processing of information, interactions among students can result in learning. "The task of the successful student in peer learning is to question, explain, express opinions, admit confusion, and reveal misconceptions; but at the same time the student must listen to peers, respond to their questions, question their opinions, and share information or concepts that will clear up their confusion" (Sivinicki & McKeachie, 2011, p.193). Thus, peer mediated learning involves learners interacting with other learners in ways which assist in the learning of academic content. Peer mediated learning is a core part of the concepts of collaborative learning and cooperative learning.

A central element of learner-centred pedagogy is collaborative learning. Collaborative learning refers to a set of instructional practices in which students work together to help each other to learn academic content. Precise definitions of collaborative learning differ; this is often due to disagreement over the scale of the collaborative situation, definitions of task, what it means to learn something, and how synchronous the interaction is required to be (Dillenbourg, 1999). However, a commonly agreed upon definition is "… a coordinated synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (Roschelle & Teasley, 1995, p.70). Here, solving a problem is the central and shared objective of the learners. The interaction between the learners should be negotiable rather than impositional. Additionally, collaborative learning practitioners lean towards exploring "theoretical, political, and philosophical issues such as the nature of knowledge

as a social construction and the role of authority in the classroom" (Matthews, Cooper, Davidson, & Hawkes, 1995, p.40). Unsurprisingly, implementation of collaborative learning varies wildly. However, each group of learners is usually left to decide the learner roles within their group (e.g., scribe), the distribution of labour, develop the relations of power, and manage the task. An example of a collaborative task is providing a group of three learners with a set of pictures, asking the group to rearrange the pictures in order to create a story, and then asking the group to collaboratively write the story. It is important to understand that the term collaborative learning describes "a *situation* in which particular forms of interaction among people are expected to occur ... but there is no guarantee that the expected interactions will actually occur [italics in original]" (Dillenbourg, 1999, p.5).

A distinction is often made in the academic literature between cooperative and collaborative learning. Although cooperative learning also involves the interdependence of students working towards a shared goal, it is often differentiated from collaborative learning by its prescriptiveness. Cooperative methods tend to maintain more traditional teacher-centred distributions of power, promoting interdependence through intentionally structured groups and typically well-defined student roles (Cole, 2014, p.360; Oxford, 1997, p.443). Direct training in interpersonal and small-group skills is often given to students. When participating in cooperative learning, centrality of group goals is present; the group is required to produce a single product. However, each learner is usually "held accountable for his or her own learning" (Olsen & Kagan, 1992, p.8). Cooperative learning practitioners tend to believe that in order for collaborative learning to be successful it is important that "every group member can independently show mastery of whatever the group is studying" (Slavin, 1996, p.59). An example of a cooperative learning task is asking a group of learners to find out about a topic. Each learner is asked to find out about a specific part of that topic and then report back to the group about what they have found out. The group then collates the new knowledge, for example in a poster. Individual accountability exists as all learners are required to report back to their group. To summarize, "cooperative learning has taken on the connotation of a set of highly structured, psychologically and socially based techniques that help students to reach learning goals" (Oxford, 1997, p.444).

Cooperative learning has been a core part of Western pedagogy for decades. A six-year longitudinal study carried out in the U.S. in the 1980s and 1990s found that 79% of elementary teachers and 62% of middle school teachers reported using cooperative learning regularly (Puma, Jones, Rock, & Fernandez, 1993, p.320). A more recent study carried out in the U.S. found that 81% of sample of teachers reported using cooperative learning daily (Antil, Jenkins, Wayne, & Vadasy, 1998). However, it is important to note that although both of the above studies use the term 'cooperative learning', they do not explicitly differentiate between the terms 'collaborative learning' and 'cooperative learning'.

The efficacy of collaborative learning has often been investigated through comparison with individualistic learning. When Hattie (2009) attempted to determine the effectiveness of collaborative learning through the synthesis of meta-studies, he did not differentiate between cooperative and collaborative learning. Instead, he made a distinction between cooperative, competitive, and individualistic learning. For Hattie (2009), cooperative learning is a specific type of collaborative learning, one which excludes interpersonal competition. Hattie (2009) indicates that cooperative learning involves high levels of peer involvement and is focused upon "enhancing interest and problem solving", whereas competitive learning involves learners' competing to reach a goal either against other learners or "their own previous performance" (p.212-214). Hattie (2009, p.213) examined four meta-studies which in turn consisted of 774 individual studies which compared cooperative learning with individualistic learning. Hattie (2009) found a statistically significant difference between cooperative learning and individual learning which is large in size ($d = 0.59$), and a statistically significant difference between cooperative learning and competitive learning which is also large in size ($d = 0.54$). Hattie (2009) argues that this statistical evidence highlights "the power of peers in the learning equation" (p.212).

Collaborative learning has been advocated by SLA practitioners for decades (Long & Porter, 1985; Pica & Doughty, 1985). Dobao (2012, p.40) comments that collaborative learning is one of the most common instructional strategies

employed within communicative second language (L2) classrooms. The use of collaborative learning by SLA practitioners is supported by empirical evidence. Cole (2014) examined the effectiveness of group instructional approaches, which were collaborative, cooperative, and peer tutoring, for literacy outcomes for English language learners by carrying out a meta-analysis of 28 independent samples whose participants were between the ages of 3-18. Cole (2014, p.374) found that peer mediated learning approaches (i.e., collaborative, cooperative, and peer tutoring) were more effective for English language learners than either individualized or teacher-centred comparison conditions ($g = 0.49$, $SE = 0.12$, $p \leq 0.00$). Cole (2014) argues that "peer-mediated learning is an important component of quality classroom instruction" (p.377).

When conceiving of this study, I had been employed by Qatar University's Department of English for over four years. Over the last 15 years, Qatar's education system has been subjected to a process of deep structural reform. One of the core beliefs which underpins Qatar's pedagogical reformation is the assumption that learner-centred pedagogy is more effective for students at all levels, kindergarten through to tertiary, than traditional teacher-centred pedagogy (Brewer, et al., 2007a; Brewer & Goldman, 2010; Zellman, Constant, & Goldman, 2011). Thus in Qatar, teacher-centred pedagogy, which has been historically dominant, is currently being replaced with more learner-centred pedagogies. Although the transition to learner-centred pedagogies has generally been welcomed by many stakeholders in Qatar (Ellili-Cherif & Romanowski, 2013), concerns regarding the adoption of Western originating educational practices have been expressed by locals (Al-Thani & Romanowski, 2013, p.10; Nasser, 2017, p.15). Currently, there is no published empirical evidence from a Qatari classroom context regarding the effectiveness of using learner-centred pedagogies when teaching English as a foreign language.

From the beginning of my employment in Qatar, I had assumed that learner-centred pedagogy would be more effective than teacher-centred pedagogy. In addition, I had never questioned what potentially made collaborative learning effective. However upon learning more about Qatar's educational history, the concerns of the local population, and the lack of empirical evidence, I began to question this assumption. This study is motivated by my need to better

understand the efficacy of the learner-centred pedagogy that imbues my teaching as well as to better understand the cognitive processes involved when learners work collaboratively to learn a second language. Having a better understanding of collaborative learning will not only be of benefit to my future students but it will also be of benefit to the students of other SLA practitioners, especially those students who are located in Qatar.

*1.2 Focus of the study*

In this study, collaborative learning is operationalized as the following: the grouping of two or three learners in a classroom context with the intent of facilitating synchronous learner-learner interaction which has the purpose of enabling learners to work with mutuality towards the completion of a clearly defined language task which contains a shared goal.

This study investigated whether learners who are situated within a Qatari context learn complex grammatical structures of a second language more effectively by working collaboratively or by working individually as well as the cognitive processes involved.

My research responds to the following two research questions.

- To what extent does working collaboratively to complete form-focused tasks impact on learners' longer-term performance of a complex grammatical structure?

- How does working collaboratively enable undergraduate learners in a Qatari context to move towards being able to self-regulate a complex grammatical structure?

*1.3 Research approach*

When carrying out this study, I employed a mixed-methods design which was framed using Vygotskian sociocultural theory.

In order to answer the research questions, a methodology was needed which could examine both the outcomes and the process of learner-learner interaction.  Firstly, the extent to which working collaboratively impacted on learners' longer-term performance of the chosen grammatical structures needed to be determined.  Secondly, the cognitive processes involved as learners moved towards independent performance of the chosen grammatical structures when working collaboratively needed to be accessed.  A mixed methods approach can address both of these needs.  The mixed method design of this study was able to tie microsocial level data which explained how complex processes unfolded in a specific situation to the attainment of specific linguistic outcomes which were a likely outcome of those processes.

This study was framed using Vygotskian sociocultural theory.  The dualism between autonomous learners and their social environment which underpins many SLA theoretical assumptions does not exist in sociocultural theory.  For Vygotsky, the process of language development, including second language acquisition, is not simply a matter of innate abilities growing into a mature state.  Instead, a Vygotskian sociocultural approach views the learner as a social being.  This means that second language development is embedded within the social interaction which occurs between humans (Storch, 2013, p.7; Vygotsky, 1986, p.159-161) and is viewed as the consequence of the interaction between the brain and social activity (Lantolf & Poehner, 2014, p.37).  Vygotskian sociocultural theory views second language "learning as manifesting itself first in social interaction and only subsequently becoming internalized" (Ellis & Shintani, 2014, p.15).  Because Vygotskian sociocultural theory views interaction between learners as a site for language learning (Storch, 2013, p.17), it provides an appropriate theoretical framework for both the description and explanation of the role that learner-learner interaction can play in the development of L2 grammatical structures.

The study drew upon two methodologies which have their roots in Vygotskian sociocultural theory: dynamic assessment and the genetic method.  The attainment of specific linguistic outcomes was measured by using interventionist dynamic assessment to quantify the explicitness of assistance that a learner

required to write the chosen grammatical structures at the sentence level. This allowed me to quantify and then compare the extent of the learners' changes in performance at the group level. The cognitive processes which were verbalized when learners worked collaboratively were recorded and analysed using a microgenetic approach. As well as providing a window into learners' inner processing and their use of language as a cognitive tool, the microgenetic approach enabled me to trace learners' understanding and performance of the target structures across the treatment sessions.

The unique design of this study provides a unique understanding of language learning.

*1.4 Significance*

In traditional language classrooms around the world, peer interaction was not considered as a valid instructional practice. Teaching was the responsibility of the teacher and peers were not thought of as a resource for learning (Philp, Adams & Iwashita, 2014, p.2; Storch, 2013, p.1). This view is either in the process of changing or has already changed (Antón, 1999, p.314). Philp et al. (2014) identify that "[c]urrent theories describe learning as being less about transfer of knowledge (what the teacher tells the student) and more about learners' appropriation of the new within existing understandings" (p.2). The shift towards collaborative learning has been matched by a growing body of research which has addressed learning collaboratively. However, the research on peer interaction and L2 learning to date is "miniscule when matched against the research on peer interaction in mainstream educational contexts" (Philp et al., 2014, p.201); there is still much to gain a deeper understanding of. This study addresses three areas of significance.

Very little empirical evidence exists which pertains to the effectiveness of learner-centred pedagogies in a Qatari context. This lack of empirical evidence extends to the teaching of English as a foreign language. A careful exploration of the relationship between working collaboratively and the resulting longer-term effects on linguistic performance is an important step in understanding the

potential benefits of peer mediation in a Qatari undergraduate context. García Mayo (2013, p.97) identifies that there is a clear need to carry out more research regarding the impact of collaborative grammar tasks in traditional foreign language classes. Thus, this study makes an important contribution to better understanding the types of pedagogies that may be effective in a Qatari EFL context as well as understanding the reasons which may underpin their efficacy.

This study contributes to the existing body of L2 research on learner-learner interaction. By exploring the experience of an individual within the context of the linguistic gains made by the collective to whom he belongs, this study was able to connect the process of language learning to the outcome of language learning. This study both deepens our understanding of which instructional approaches are effective when teaching L2 form and deepens our understanding of how learners' use language as a tool for thinking. Overall, this study provides a unique understanding of form-focused collaborative activity and adds to the body of L2 research which has explored working collaboratively in a classroom setting.

This study applies Vygotskian sociocultural theory to a new context. Although conceptualized in Russia in the 1920s and 1930s, in the last 90 years Vygotsky's theory of human mental development has been applied to a wide array of fields and contexts throughout the world. However before this study, it had not been applied to the field of second language acquisition within a Qatari undergraduate EFL context. This study's application of Vygotskian sociocultural theory to this underresearched context provides a unique insight into the genesis of second language learning for these learners.

*1.5 Organization of thesis*

In the following chapter, I describe the context in which the study is located. A brief history of Qatar's economy is given, followed by a historical overview of its education system. Connections between Qatar's economy and its education system are outlined throughout. In chapter 3, I outline the theoretical framework

of Vygotskian sociocultural theory and apply some of its key concepts to the learning of L2 form.  Then, I explore the current research detailing the mechanics of peer mediation and the efficacy of collaborative learning on L2 form.  Chapter 4 describes the context in which the study was carried out, rationalizes and explains the research design, methodologies and data collection tools, then outlines the data collection procedures.  Chapter 5 provides the findings.  It is divided into two sections.  The first section reports to what extent collaboratively completing the treatment tasks impacted upon learners' performance of the target structures.  The second section explores how completing the treatment tasks collaboratively impacted upon one learner's understanding and performance of one of the target structures.  In chapter 6, the findings are discussed and contextualized within the academic literature.  In chapter 7, contributions to knowledge that this study makes are given, followed by the pedagogical implications, limitations, and suggestions for future research.

**Chapter 2 – Context chapter**

This study employs the theoretical framework of Vygotskian sociocultural theory (see chapter 3). The intellectual roots of sociocultural theory extend back to the sociological and economic writings of Marx and Engels (Lantolf, Thorne, & Poehner, 2015, p.207-208). Thus when Vygotsky attempted to formulate his educational psychology, he emphasized that an individual's development must be located within their material, social, and historical conditions (Lantolf, Thorne, & Poehner, 2015, p.208). It is from this perspective that the context chapter is written.

Over the last 15 years, Qatar's educational system has undergone far-reaching structural changes. In order to understand the contextual need for this study, it is important to understand how Qatar's current educational system came into being as well as its intended purpose. A brief history of Qatar's economy is given, followed by a historical overview of its education system. Connections between Qatar's economy and its education system are outlined throughout. Then, how Qatar's education system has been recently reformed in order to better meet the needs of its economy is explained. Finally, a contextual rationale is given.

*2.1 The Qatari economy*

Located in the Arabian Gulf, Qatar is an Islamic nation of 11,427 sq. km. Qatar has an approximate population of 2,437,790 (Ministry of Development Planning and Statistics, 2015), consisting of approximately 278,000 nationals (Snoj, 2013). Thus, around 11.4% of Qatar's population are Qatari; expatriates from all over the world make up the rest of the population. However, this population imbalance did not always exist.

At the start of the twentieth century, Qatar (see figure 1 predominately consisted of a cluster of pearl fishing villages.  In 1907, it had a population of around 27,000 Qataris (Crystal, 1990, p.113).  Because most families had branches in other Gulf areas, Qatar's population was highly mobile and frequent migration occurred.  Although camel breeding, fishing, and date palm production existed, Qatar's economic prosperity was dependent on pearl diving.  Fromherz (2012) explains that "Qatar had a higher proportion of its population then engaged in pearl diving than any other pearling centre in the world" (p.114).  This dependence on one export, pearls, was to prove problematic.

The years from 1925 to 1949 were economically depressed.  Japanese competition devastated the international market for pearls and much of Qatar's population migrated (Crystal, 1990, p. 4).  In 1924, 60,000 fishermen were engaged in the pearl harvest; however, by 1944 this number has fallen to 6,000 (Fromherz, 2010, p.1).  The Qatari economy was devastated.  In 1940, a British political resident shared his opinion of Doha, Qatar's capital city.  '[Doha is] little more than a miserable fishing village straggling along the coast for several miles and more than half in ruins.  The *suq* consisted of mean fly-infested hovels, the roads were dusty tracks, there was no electricity, and the people had to fetch their water in skins and cans from wells two or three miles outside the town' (cited in Fromherz,

*Figure 1.* Map of Qatar (Central Intelligence Agency, 2015)

2012, p.1).  However, Qatar's economic prosperity was to change.

In 1939, oil was discovered (Crystal, 1990, p.117).  When oil exports began in 1949, Qatar's economy was transformed into a modern oil economy within a short timeframe.  In 1955 for the first time in Qatar's history, no pearling ships set sail (Crystal, 1990, p.119).  The export of oil brought prosperity, social

progress, and immigration of skilled labour.  Initially most oil workers were Qatari (Fromherz, 2012, p.10) and came from the pearling industry (Crystal, 1990, p.139).  However, Qatar soon experienced a shortage of both skilled technicians and unskilled labour.  In order to fulfil this shortfall, Qatar turned to expatriate workers.  In 1949, the year oil production started, the population of Qatar was around 20,000; however, by 1972 the population had increased to 110,000 (Halliday, 1977, p.10).  In 1977, 21.38% of the labour force consisted of Qatari nationals (Nafi, 1983, p.6).  From the initial stages of its economic transition, Qatar's economy has required expatriate workers.

Qatar is now a stable, wealthy, and rapidly developing country.  Although oil was discovered in 1939, vast natural gas reserves were discovered in 1971.  Currently, Qatar derives most of its wealth from these two natural resources.  Long-term liquefied natural gas contracts enable Qatar to not be subjected to short-term price fluctuations (General Secretariat for Development Planning, 2011, p.75).  This gives the Qatari economy both wealth and stability.  Qatar is currently one of the most economically successful countries in the world.  However, challenges exist.

### 2.1.1 The need for education

Since the emergence of the oil industry, expatriate workers have been an important part of Qatar's labour force.  This trend holds true today.  Virtually all areas of Qatar's private economy are populated by a largely foreign labour force.  The 2010 National Census indicated that of the 74,087 economically active Qataris, only 7.6% worked in the private sector.  This represented just 0.6% of the private sector workforce (Qatar Statistics Authority, 2010).  Even professional, managerial, and technical occupations which are deemed desirable by Qataris are filled by well-educated expatriates (Moini, Bikson, Neu, & DeSisto, 2009, p.5).

Private sector employers have been discouraged by the abilities of new Qatari entrants into the labour market (General Secretariat for Development Planning, 2011, p.149).  Interviews with employers, both in the public and private sectors,

have consistently shown that Qatari graduates lack: technical skills, problem solving capacities, and innovation (Stasz, et al., 2007). Qatar acknowledges that it currently has a shortage of citizens who are able to manage the complex systems of a rapidly growing, diversified, and technologically sophisticated economy (General Secretariat for Development Planning, 2008, p.14). One of the main reasons for this is the fact that many Qataris do not have the appropriate education and skills for these positions.

Qatar's education system is now central to Qatar's future success. Qatar desires a national labour force which can participate effectively in both the public and private sectors of its economy (General Secretariat for Development Planning, 2011, p.62). Upgrading and deepening the knowledge, education, and skills of Qataris is now a national priority (General Secretariat for Development Planning, 2011, p.15). One way in which Qatar hopes to achieve this is by investing in its people via its education system.

*2.2 Review of the Qatari educational system*

Article 49 of Qatar's constitution grants the right of compulsory and free education up to the secondary level for all Qatari citizens (The Permanent Constitution of the State of Qatar, 2015). Regarding tertiary education, tuition scholarships are offered for the national university as well as for branch campuses of Western universities which are located in Qatar. In addition to providing free education, Qatar's entire education system has also been subjected to a process of deep structural reform. A brief historical overview of the Qatari education system is now given which focuses on its shift from traditional teacher-centred pedagogy towards more learner-centred pedagogy as well as the teaching of English.

*2.2.1 Education in the first half of the 20th century*

At the foundation of education in Qatar lie the principles of Islamic teaching and learning. Before the discovery of oil, there was no formal education system in Qatar (Brewer & Goldman, 2010, p.228). Pre-petroleum education involved

pearl farmers teaching their sons how to find oysters and sail the dhow; mothers and grandmothers taught girls the essential skills of survival (Fromherz, 2012, p.153). However, some Qataris did receive a religious education. During the pearling off season, teachings took place in *kuttabs* (i.e., religious non-government schools) that were located in village mosques or private houses (Nasser, 2017, p1). Lessons were held in a small room with one instructor, who was usually an Imam, Shaikh, or Mulla, and were usually attended by boys between the ages of 5-12. Teacher-centred pedagogies prevailed; students received a static body of knowledge from an authoritative teacher. Traditional Islamic education mainly involved memorization and recitation of Koranic verses. Because "the main goal of traditional Qur'anic education was, and remains, the complete mastery or memorization of the Qur'an" (Wagner & Lofti, 1980, p.239), doubt, contradiction, questioning, and critical thinking were discouraged (Hourani, Diallo, & Said, 2011, p.345). Students also learned to read and write. The traditional teaching of Arabic grammar involved committing its many complex rules and irregularities to memory (Massialas & Jarrar, 1991, p.94). There has been minimal attempt to implement modern pedagogical theories to this type of education; consequently, its teaching methodology has changed very little since the first century of Islam (Massialas & Jarrar, 1991, p.93). Historically "non-religious education was not highly valued" (Fromherz, 2012, p.115); Qatar's economy simply did not require graduates who had been prepared for high level technical and managerial positions.

*2.2.2 Education reform in the mid-1950s*

As Qatar transitioned into an oil economy, it required a broader and more comprehensive education system that would better prepare its citizens for its labour market. Thus, the government directed some of its newly found oil wealth towards formalizing its existing education system. Qatar's Ministry of Education (MoE) was created in the mid 50's (Brewer et al., 2007a). Although the first schools offered history, math, and some English (Crystal, 1990, p.128), the newly created "national curriculum maintained much of its traditional, religious focus" (Fromherz, 2012, p.153). Brewer and Goldman (2010, p.230) explain that the educational reform implemented by the MoE in 1950's was

centrally planned and focused on providing free education to a largely illiterate population.  Minimal attention was given to quality (Nasser, 2017, p.2).

In addition to having close ties to the existing Qatari education system, the 1950s educational reform was influenced by other Arab countries.  The reform involved moving towards a style of education which was based on the Egyptian educational system (Brewer et al., 2007a, p.21).  As in Egypt, classes offered included: Islamic studies, arithmetic, geography, Islamic history, Arabic, and English (Brewer et al., 2007a, p.20).  Textbooks and curricula were adopted primarily from Egypt as well as from other Arab countries (Brewer et al., 2007a, p.20).  In the early 1950s, similar to other areas of the Qatari economy, a shortage of qualified Qatari teachers existed.  Qatar's national College of Education was only founded in 1973 (Qatar University, 2016).  Therefore in order to teach a largely imported curriculum from imported course books, teachers were imported from other Arab countries, particularly, Egypt, Jordan, Syria, and Lebanon (Bahgat, 1999, p.130; Halliday, 1977, p.16).

Traditional pedagogies prevailed.  The pedagogies employed remained strongly connected to Qatar's existing traditional education system (Hourani et al., 2011, p.342).  Traditional Islamic teaching pedagogies were simply applied to the teaching of secular subjects, including English.  A focus on memorization and recitation usually prevailed.  Students often copied verbatim the contents of lessons in order to repeat them at exam time (Massialas & Jarrar, 1991, p.79); inquiry and synthesis were seldom integrated into educational practices (Hourani et al., 2011, p.342).  Thus, the pedagogical style of the initiatives which were implemented in the 1950's remained mainly teacher-centred.

*2.2.3 Primary and secondary educational reform in the early 2000s*

In the early 2000s, educational reform again surfaced on the political agenda.  In 2001, Qatar was alarmed that its educational system was "not producing high quality outcomes" (Brewer et al., 2007a, p.iii).  High-school graduates were generally not prepared to participate effectively in Qatar's modern and expanding economy (Constant et al., 2010, p.451).  Students often emerged

well suited to being a civil servant (Bahgat, 1999, p.131) but ill-suited to achieving success in the rapidly expanding and globally connected Qatari labour market (Zellman et al., 2011, p.55).  Qatar's leadership felt that their education system needed to be better aligned with the needs of its private sector.  Steps towards change were taken in summer 2001 when the RAND Organization, a non-profit U.S. research institution, was contracted to critically examine Qatar's primary and secondary educational system as well as to propose options for reform.

Before the restructuring, the RAND Organization detailed a pedagogy which had its roots in the traditional teaching pedagogies of the first government schools of the 1950s.  High-levels of teacher-centred instruction existed. Zellman et al. (2011) explain that "the predominant method of delivering instruction in Ministry classrooms was whole-group instruction, with the teacher standing in front of the class and lecturing, answering student questions, or calling on students to answer or to recite questions. Students were almost never asked to analyse or synthesize any facts or material; most of the cognitive work was limited to demonstrating knowledge through recall of information" (p.57). This emphasis on rote-learning and memorization resulted in the teacher often lecturing the students and providing few opportunities for teacher-student interaction (Brewer et al., 2007a, p.40) or student-student interaction (Brewer et al., 2007b, p.3).  A high percentage of students were bored and unmotivated (Brewer et al., 2007a, p.40).

English was also taught using teacher-centred pedagogy.  The RAND Organization identified that there lacked a "sufficiently demanding approach to grammar and to reading and writing strategies" (Brewer, et al., 2007a, p.102). Although the RAND Organization did not specify exactly what they meant, other sources from a wider Arab context can elaborate on its probable meaning. O'Brien (2011) identifies that English grammar pedagogy in Arab schools is often teacher-centred.  It involves providing definitive analyses of language points as well as general conceptual rules.  Lessons are typically teacher-fronted presentations in which deductive explanations of new language items are given in isolation.  Learners work individually and are expected to remember grammatical rules, then independently apply them when necessary.  Little

opportunity is provided for collaborative contextualized practice which integrates the four skills (i.e., reading, writing, speaking, and listening) and takes into consideration the learner's personal experiences (Ahmad, 2014, p.99). The initial Qatari education system developed in the 1950s and had very close links with the system which it supplanted (i.e., the kuttabs and their Qur'anic school derivatives). As "traditional study of Arabic includes memorization and recitation of the Qur'an and a focus on complex grammar rules" (Brewer & Goldman, 2010, p.237), it is not surprising that traditional methods of teaching from educational traditions were influential in the teaching of English.

Teacher-centred pedagogy often does not meet the English language needs of Arab learners. Although learners may develop grammatical competency through this fragmented approach, they often do not develop communicative competency due to a lack of sociolinguistic and conceptual knowledge. Arab learners of English who have studied the general rules of grammatical concepts (e.g., modality and conditionality) have often been observed using direct transfer and translation (O'Brien, 2011, p.441), resulting in these learners struggling to maintain a basic conversation or compose a simple written message (Al-Seghayer, 2014, p.22). Although secondary school graduates of Qatar's education system received a minimum of 6 years of English language instruction, they frequently did not develop a high enough level of English communicative proficiency for the Qatari labour market or to study at the tertiary level (Ellili-Cherif & Al-Khateeb, 2015; Qatar University, 2012; Stasz et al., 2007).

*2.2.4 A shift towards learner-centred pedagogy*

The RAND Corporation outlined extensive reform. This included overhauling school governance, the curriculum, assessment, and professional development as well as creating government institutions to oversee the implementations (for more information see Brewer, et al., 2007a). As well as other recommendations intended to improve the quality of teaching, the reform emphasized a need for learner-centred classroom practices for the teaching of all subjects.

From November 2005 through to May 2007, the RAND Corporation reported on the progress of the reform.  Ministry schools which had not implemented aspects of the reform were compared to Independent schools which had.  The RAND Corporation found evidence that student-centred pedagogical innovation which promotes inquiry, discovery, and critical approaches had entered the classroom of Independent schools in a variety of ways (Zellman et al., 2011, p.57).  One way in which teachers had shifted to a more learner-centred pedagogy was by using more varied methods of instruction, including collaborative learning (Zellman et al., 2009, p.77).  Today, there is a consensus that learner-centred approaches now feature more prominently within Qatar's primary and secondary classrooms (Nasser, 2017, p.14).  Additionally, the reliance on memorization has been reduced.  Due to the reform, all students within Qatar's primary and secondary education system are not expected to learn English through memorizing information from textbooks; instead, they are now expected to read and critique texts from a variety of genres, including: poetry, literature, as well as from the popular media (Brewer & Goldman, 2010, p.242).  However, it is taking time for relatively rapid changes in macro-level educational policy to modify long-held pedagogical beliefs and filter down into actual classroom practices (Al-Thani & Romanowski, 2013).  A key question here is how has the reform, including the shift to learner-centred pedagogies, affected students' academic performance?

Between 2007 and 2015, students' academic performance improved.  Two sources of evidence support this claim: scores from the Programme for International Student Assessment (PISA) and scores from the Qatar Comprehensive Educational Assessment (QCEA).  PISA is an international survey which tests the skills and knowledge of 15-year olds every three years in order to evaluate education systems worldwide.  Qatar's scores in science, mathematics, and reading have steadily improved.  Table 1 shows Qatar's scores on the reading scale from 2006-2015.

Additionally, Qatar administers standardized national tests each year.  Again, scores have been steadily improving.  For example, in 2007-8, 10% of all learners met the national curriculum standards for English; whereas in 20014-15, 30.25% met the national curriculum standards (Evaluation Institute, 2008,

Table 1

*Qatar's mean reading scores in PISA (Organisation for Economic Co-operation and Development, 2007, 2010, 2014, 2016)*

| Year | Mean reading score in PISA |
|------|----------------------------|
| 2006 | 312 |
| 2009 | 372 |
| 2012 | 388 |
| 2015 | 402 |

2015).  This is an increase of 20.25% over seven years.  The PISA and QCEA scores suggest that the primary and secondary educational reform of the early 2000's, which includes a transition to more learner-centred pedagogies, is having a positive effect on learning.  Furthermore, a study into stakeholders' perceptions of Qatar's relatively recent educational reform suggested that parents seemed to recognize the positive effects of implementing pedagogy which is more student-centred (Ellili-Cherif & Romanowski, 2013, p.13-14). However, although learners' academic performance in English has improved, student performance in English is still low.  Qatar acknowledges that many secondary school graduates are not sufficiently literate (General Secretariat for Development Planning, 2011, p.132) and understands that it will take time for their educational reforms to be successful (General Secretariat for Development Planning, 2011, p.124).

Qatar has completely reformed its primary and secondary school system.  As a result of this educational reformation, learner-centred educational philosophies and pedagogies, originating from the West, are now being employed throughout Qatar's primary and secondary education system (Zellman et al., 2009, p.71). As well as its primary and secondary education system, Qatar's national university has also undergone widespread reform.

*2.2.5 Qatar University*

In 1973, Qatar opened its first higher educational institute, a publicly funded College of Education.  In 1977, this college was expanded into the national university.  Today, Qatar University consists of eight colleges and a Foundation Department (Qatar University, 2016).  Although Qatar has a number of tertiary institutions, Qatar University is seen as the most appropriate option for the majority of academically orientated secondary school graduates who seek higher education.  There are currently over 15,000 students at the university (Qatar University, 2016, p.23).

The university is strongly aligned with Qatar's 2030 National Vision (General Secretariat For Development Planning, 2008).  When Qatar University produced its first graduates in the early 1980s, they received high status public posts despite their inexperience and youth (Crystal, 1990, p.157).  However, today Qatar University is charged with providing qualified graduates for Qatar's constantly expanding and diversifying labour market.  If Qatar University can produce graduates which have the knowledge and skills for success in a demanding, competitive, and unpredictable economy, then higher education is a realistic means of enabling Qataris to meet private sector labour demands.  This expectation is acknowledged within Qatar University's 2016-2017 Undergraduate Student Catalog which states that the university seeks to "provide post-secondary education opportunities for Qatari citizens with the goal to build a workforce of competent and skilled graduates in line with the labor market needs and adhering to the principles of Qatar National Vision 2030" (Qatar University, 2016, p.23-24).  However, this close alignment with national economic policy did not always exist.

In 2003, Qatar University embarked upon a series of widespread reforms.  At this time, public and private employers in Qatar reported that often graduates from the university did not reach their standards for employment (Moini et al., 2009, p.xxi).  Decisions regarding curriculum development and maintenance of academic standards were centralized (Moini et al., 2009, p.16) and the pedagogy used at the university tended to be teacher-centred (Moini et al., 2009, p.xiii).  The intent was to turn the national university into a high-quality,

learner-centred institution which is aligned with the technological, business, and industrial needs of the modern Qatari economy (Al-Attiyah & Khalifa, 2009, p.30; Moini et al., 2009, p.xiii).  In line with the modernization of Qatar's primary and secondary education system, it was determined that learner-centred educational philosophies should be embedded within the courses offered (Moini et al., 2009, p.46).  It is now expected that most courses offered by the university are imbued with student-centred pedagogy.

Three studies suggest that collaborative learning may be well received by learners in a Qatari post-secondary context.  Firstly, Prowse and Goddard (2010) conducted a comparative case study in which they examined how Western faculty had adapted their pedagogy for a Qatari context when delivering a business program which had originated in Canada.  Prowse and Goddard (2010) found that the instructors had observed that their learners were proactive in helping each other, with learners often "clarifying information about the lesson for each other" (p.40).  Secondly, in a study which took place at the Qatar branch of the University of Calgary, Lemke-Westcott and Johnson (2013) explored the differences in learning styles between predominantly Canadian faculty and predominantly Qatari students.  They found that students "expected teachers to make the classroom a stimulating and collaborative environment" (Lemke-Westcott & Johnson 2013, p.83).  Thirdly, Scotland (2016) employed a mixed methods design to explore how Qatari undergraduate students' ($N = 50$) perceptions of assessed group work changed over a period of six weeks as they collaboratively wrote a term paper in groups.  Scotland (2016) found that the participants valued working collaboratively because it enabled them to collaboratively generate, share, and develop their ideas.  These studies suggest that learners in a post-secondary Qatari context are receptive to collaborative learning pedagogies; however, they do not offer strong evidence that collaborative learning is more effective that learning individually.

*2.3 Contextual rationale*

From a tribal community which was largely dependent on pearl fishing, Qatar is now one of the wealthiest countries in the world.  Qatar's wealth has been

achieved primarily through exploitation of its hydrocarbon reserves; however, Qatar desires to transition into a more diverse and sustainable knowledge-based economy. Currently, many Qataris are reported not to have the appropriate education and job skills for high level professional, managerial, and technical positions. In order to facilitate the transformation from a resources led economy into a knowledge based economy, Qatar has chosen to invest in its people. As a result, Qatar's education system has been subjected to a process of deep structural reform.

One of the core beliefs which underpins Qatar's pedagogical reformation is the assumption that learner-centred pedagogy is more effective for students at all levels, kindergarten through to tertiary, than traditional teacher-centred pedagogy. Thus, teacher-centred pedagogy, which has been historically dominant, is currently being replaced with more learner-centred pedagogies. Although the transition to learner-centred pedagogies has generally been welcomed by many stakeholders in Qatar (Ellili-Cherif & Romanowski, 2013) and Qatari students' academic performance in Qatar's primary and secondary schools has been steadily improving, concerns regarding the adoption of Western originating educational practices have been expressed by locals (Al-Thani & Romanowski, 2013, p.10; Nasser, 2017, p.15). Currently there is limited empirical evidence from a Qatari classroom context regarding the effectiveness of using learner-centred pedagogies. This lack of empirical evidence extends to the teaching of English as a foreign language. Without empirical data, it is not possible to make definitive claims about the effectiveness of learner-centred pedagogy when employed in a Qatari context. In order to thoroughly investigate the effectiveness of collaborative learning when teaching L2 form, the theoretical framework of Vygotskian sociocultural theory is employed.

**Chapter 3 – Literature review**

This chapter will outline the theoretical framework of Vygotskian sociocultural theory and apply some of its key concepts to the learning of L2 form. Then, the concept of peer mediation is examined and the efficacy of collaborative learning on L2 form is explored.

*3.1 Vygotskian sociocultural theory*

Vygotskian sociocultural theory is based on the work of Lev Semenovich Vygotsky (1896-1934). Vygotskian sociocultural theory argues that "the human mind is a dialectic unity of biological and cultural processes" (Lantolf & Poehner, 2008, p.6) and that higher psychological functions are of sociocultural origin (Vygotsky, 1978, p.46). For Vygotsky, human mental development arises through interaction between biological roots and sociocultural origins (Lantolf, 1994, p.418). More specifically, biologically endowed mental functions (e.g., natural memory, involuntary attention, perception, and sensation) can be united and transformed into higher order culturally determined mental functions (e.g., voluntary attention, logical memory, and planning) (Lantolf & Appel, 1994, p.5). When this occurs "[h]igher psychological functions are not superimposed as a second story over the elementary processes"; instead, "they represent new psychological systems" (Vygotsky, 1978, p.124). This means that less complex mental systems have the potential to develop into more complex mental systems (Newman, Griffin, & Cole, 1989). The development of higher cognitive functions within a Vygotskian sociocultural framework refers to the creation of higher psychological functions as well as the continuous development of existing higher psychological functions over time (Wertsch, 1985, p.24). Vygotskian sociocultural theory is a psychological theory of human mental development rather than a specialized theory of second language learning; thus, it attempts to explain the development of complex human cognitive abilities, one of which is the ability to acquire a second language (Storch, 2013, p.6). In order for higher order culturally determined psychological functions, including the process of second language acquisition, to arise from biologically endowed functions, social activity is required.

Vygotskian sociocultural theory maintains that mental development is derived through interaction with other humans. Vygotsky's general genetic law of cultural development asserts that higher psychological functions appear twice; "first, *between* people (*interpsychological*), and then *inside* the child (*intrapsychological*). This applies equally to voluntary attention, to logical memory, and to the formulation of concepts. All the higher functions originate as actual relations between human individuals [italics in original]" (Vygotsky, 1978, p.57). This means that "[a]ny higher mental function necessarily goes through an external stage in its development because it is initially a social function … Any higher mental function was external because it was social at some point before becoming an internal, truly mental function" (Vygotsky, 1981b, p.162; cited in Anton & DiCamilla, 1999, p.234). Vygotsky (1989) argues that "interaction actually produces new, elaborate, advanced psychological processes that are unavailable to the organism working in isolation" (p.61). Thus, organic structures in the brain are constructed using external means (Vygotsky, 1989, p.55). None of the higher psychological functions are 'pure' in the sense of a biologically given module or faculty (Chaiklin, 2003, p.48); instead, they are dependent of the social practices in which and for which they develop (Wells, 1999b, p.250). Ultimately, the social environment is the source of an individual's mental development. This includes language learning.

Sociocultural theory provides an explanatory framework of how language learning occurs in the social environment. Sociocultural theory differs from other psycholinguistic and SLA theories in that it does not separate the phenomena of social setting and psycholinguistic processes. Because its underlying premise is that an individual's higher cognitive development originates and continually develops in social interaction, sociocultural theory provides an overarching explanatory framework for the second language development which occurs during collaborative learning. Vygotskian sociocultural theory provides a conceptual framework for the description and explanation of the role learner-learner interaction plays in the development of L2 grammatical structures. Next, Vygotskian sociocultural theory is unpacked and some of its key concepts applied to the learning of L2 form.

*3.1.1 Concepts*

Concepts are explanations of phenomena; they are processed perceptions and ideas (Vygotsky, 1989, p.67). "Concepts are relevant for the formation of consciousness because they shape how we perceive, understand, and act in and on the world" (Lantolf & Poehner, 2014, p.61). Vygotsky proposed two types of concepts: spontaneous or everyday concepts, and scientific concepts. Everyday concepts are based on direct experience; they are intuitive, unsystematic, and situated (Swain, Kinnear, & Steinman, 2011, p.52). An example of a linguistic everyday concept is a grammatical 'rule of thumb' which is applied indiscriminately; for example, never end a sentence with a preposition (Swain et al., 2011, p.58). Scientific concepts represent abstract relationships; they are conscious, systematic, and not bound to context (Swain et al., 2011, p.52). Examples of linguistic scientific concepts are using parallelism to restructure a sentence or rewriting a sentence in the passive voice in order to intentionally omit an agent. Scientific concepts can be consciously manipulated and applied to diverse contexts (Swain et al., 2011, p.58). Both types of concepts are dynamic. Vygotsky (1986) explains that "… a concept is not an isolated, ossified, and changeless formation, but an active part of the intellectual process constantly engaged in serving communication, understanding, and problem solving" (p.98). Furthermore, the relationship between everyday and scientific concepts is dialectical and transformative. "We believe that the two processes – the development of spontaneous and nonspontaneous [scientific] concepts – are related and constantly influence each other. They are part of a single process: the development of concept formation …" (Vygotsky, 1986, p.157). Scientific concepts do not replace spontaneous concepts; instead, scientific concepts strengthen intuitive practices (Swain et al., 2011, p.52).

The learning of a second language would be incomplete without conceptual understandings. Sociocultural theory understands second language acquisition as a "psychological process that should be accounted for through the same principles and concepts that account for all other higher mental processes" (Lantolf, Thorne, & Poehner, 2015, p.208). From a Vygotskian perspective, learning a second language "is about acquiring new conceptual knowledge and/or modifying already existing knowledge as a way of re-mediating one's

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interaction with the world and with one's own psychological functioning" (Lantolf & Thorne, 2006, p.5). Thus, scientific concepts are "important mediational mechanisms" which can be used to "explicitly examine and further understand language" (Gánem-Gutiérrez, 2013, p.131). As well as having a conceptual understanding of the properties of language, it is also important for learners to understand how language is used. This is because the meanings imbued within language resides in "concreate goal-directed activity" of communities of speakers rather than in "the signs themselves" (Lantolf & Thorne, 2006, p.4). Whenever we speak or write we make selections from a language's entire lexical and grammatical system to produce appropriate meanings for the context of a situation. Therefore, language learning "is not about building up complete and perfect grammar in order to produce well-formed sentences" but "is about enhancing one's repertoire of fragments and patterns that enables participation in a wider array of communication activities" (Lantolf & Thorne, 2006, p.17). Sociocultural theory argues against learners being given rules and definitions to memorize as they often fail when transferred to a different context. Instead, it advocates teaching how the underlying concepts are used to convey meaning in a wide range of communicative activities.

*3.1.2 Internalization*

Internalization is the negotiated process through which external higher order mental processes take on a psychological function. A Vygotskian understanding of the world perceives all traits as emergent and dynamic rather than innate and stable. This means that abilities do not suddenly appear within an individual; instead, they emerge gradually as a result of socially interacting with the world. Over time, abilities that once resided in an individual's social interactions on the *interpsychological* plane become internalized and can be used as a resource for new cognitive functions on the *intrapsychologica*l plane. Stetsenko and Arievitch (1997) explain that "psychological processes emerge first in collective behaviour, in co-cooperation with other people, and only subsequently become internalized as the individual's own 'possessions'" (p.161). Through jointly constructed mental activity with guiding individuals (e.g., knowledgeable peers), goal-directed higher mental processes (e.g.,

selective attention, planning, and logical memory) can be internalized, then developed and refined. This transformative process is called internalization. Culturally organized activity with artefacts that others have produced (e.g., books) can also bring about internalization. Thus, internalization is the appropriation and conversion of the psychological functions employed by others into mental functions. Internalization is the "internal reconstruction of an external operation" (Vygotsky, 1978, p.56). Ultimately, all higher mental functions are derived and internalized from interpsychological activity.

The process of internalization is transformative. Through the internalization of socially originating higher mental processes "the social nature of people comes to be their psychological nature as well" (Luria, 1979, p.45). However, the process of internalization is not a process of transmission which results in a simple copy of external interpsychological processes (Wertsch, 1985, p.63-64). Instead, when the social converges with the individual the internalized higher mental processes "are appropriated and reshaped to meet the needs of the individual" (Lantolf & Poehner, 2014, p.45). Internalization reorganizes an individual's relationship to their social environment and generally carries forward into future performance (Winegar, 1997, p.31); it enables individuals to move towards being able to intentionally monitor and control their mental activity in unrelated contexts. Internalization leads to self-regulation.

### 3.1.3 Self-regulation

Self-regulation is the ability to intentionally monitor and control one's mental activity. Through self-regulation an individual can control their responses "so that actions are not merely instinctive but instead result from voluntary consideration of possible alternatives and intentional selection of a course of action" (Poehner, 2008, p.28). Automatic control stems from the ability to self-regulate (Lantolf & Aljaafreh, 1995, p.631). Thus, self-regulation can be said to have occurred "when the activity and practice appears in a learner's own performance, and when those activities are internalized and automated" (Winne & Hadwin, 2011, p.37). As well as resulting in the capability to perform a task independently (Aljaafreh & Lantolf, 1994, p.468), self-regulation also results in

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the ability to monitor that performance (Swain et al., 2011, p.76). The concept of self-regulation explains how the ability to intentionally control one's behaviour resides in an "internally self-generated cognitive plan" (Anton & DiCamilla, 1999, p.234). Furthermore, self-regulation is a "relative phenomenon" (Lantolf & Appel, 1994, p.12). If a learner is able to self-regulate their performance during a specific type of task, it cannot be assumed that the learner will be able to self-regulate their performance of the same concept in all tasks and at all times. As the ability to self-regulate is an outcome of internalizing socially originating higher mental processes and knowledge, it must be remembered that the ability to self-regulate mental processes is still "very much social in origin, quality, and function" (Lantolf & Thorne, 2007, p.200).

Self-regulation allows for independent linguistic performance. Sociocultural theory understands second language acquisition as a social process which gradually becomes a psychological process (Lantolf, 2012, p.60). That is, linguistic knowledge which is originally located on the social (i.e., intermental/interpsychological) plane moves to the individual (i.e., intramental/intrapsychological) plane as an individual's ability to self-regulate the language in question develops. Gánem-Gutiérrez (2013) explains that "[l]anguage development is ultimately determined by both the increasing ability to control our linguistic resources for communication and the increasing ability to make use of those resources for self and other regulation" (p.136). Successful self-regulation of a linguistic feature results in its automatic control (Lantolf & Thorne, 2006, p.282); successful self-regulation of an L2 is the "the ability to determine for oneself what elements of one's language use are right or wrong, appropriate or inappropriate" (Swain et al., 2011, p.85). Furthermore, self-regulation of an L2 is not a permanent or stable state of development (Anton & DiCamilla, 1999, p.234). Lantolf and Thorne (2007) explain that "[e]ven the most proficient communicators, including native speakers, may need to re-access earlier stages of development (i.e. other- or object-regulation) when confronted with challenging communicative situations" (p.200). How self-regulation is derived from semiotically mediated processes is now explored.

*3.1.4 Symbolic mediation*

A central tenet of Vygotskian sociocultural theory is that the mind is mediated (Wertsch, 2007). Humans exist in two worlds: one comprised of signs and symbols, and the other comprised of material objects. Tools, including both material objects (e.g., hammers) as well as symbolic tools (e.g., language and scientific concepts), are culturally created auxiliary devices which allow humans to control and reorganize both the world of objects as well as the world of mental behaviour (Lantolf & Thorne, 2007, p.201). However, the symbolic world can take shape in the material world. For example, verbal action is simultaneously material (i.e., sound waves) and symbolic (i.e., language). Practical activity combined with sign use "is the very essence of complex human behavior" (Vygotsky, 1978, p.24). Symbolic tools can be inwardly or cognitively directed (Lantolf, et al., 2015, p.211), creating "new connections in the brain" (Vygotsky, 1997, p.55). Because they allow abstraction from material actions and physical objects, symbolic tools are auxiliary means which "imbue us with the capacity to organize and gain voluntary control over our biologically specified mental functions" (Lantolf & Thorne, 2006, p.25). In other words, they enable us to self-regulate our mental activity. All higher-order mental functioning is enabled, organized, regulated, and developed by the internalization of culturally constructed auxiliary devices.

Mediation refers to the act of employing culturally created auxiliary devices. Lantolf and Thorne (2006) define mediation as "the process through which humans deploy culturally constructed artifacts, concepts, and activities to regulate (i.e. gain voluntary control over and transform) the material world of their own and each other's mental activity" (p.79). The Forbidden Colours Task illustrates this process. Vygotsky (1978, p.40-45) describes an experiment in which he and his fellow researchers investigated the internalization of symbolic mediation. Children of different ages were asked a series of questions about objects in front of them. The questions were intended to elicit colours. When answering, the children were asked not to repeat the same colour more than once. The children were provided with a set of coloured cards and were told that they could use these strips to help them to remember the forbidden colour. Very young children were unable to integrate the cards into the task; they were

unable to use the strips of paper to mediate their thinking.  Older children were able to integrate the cards into the task; they avoided the forbidden colours through the use of the strips.  Adults who took part in the study did not use the coloured strips, but they had no difficulty in avoiding the forbidden colour.  This is because, unlike the younger children, they were able to internally mediate their thinking covertly through the use of linguistic signs.  Vygotsky and his colleagues hypothesized that as we become more cognitively developed, external mediation moves from the interpsychological plane to the intrapsychological plane, eventually resulting in self-regulation.

Although mediation can take many forms, the culturally developed artefact of language is the primary form.  Language mediates thinking; it enables us to complete our thoughts and transform them into artefacts which then allow for further contemplation (Swain, Lapkin, Knouzi, Suzuki, & Brooks, 2009, p.5).  In order to develop their ability to self-regulate, individuals need to internalize the concepts and processes embodied within socially rooted speech.  When this happens, language loses its unidirectional quality and acquires bidirectional functions (Lantolf, 2006, p.90).  Control shifts from the other-regulated intermental plane to the self-regulated intramental plane, resulting in increased self-regulation over developing concepts and processes.  "According to Vygotsky, it is in the process of privatizing speech that higher forms of consciousness arise on the inner plane and in this way our biological capacities are organized into a culturally mediated mind" (Lantolf, 2000, p.15).  Vygotsky (1978) explains that "as soon as speech and the use of signs are incorporated into any action, the action becomes transformed and organized along entirely new lines" (p.24).  Thus, the use of language as a cognitive tool does not facilitate mental actions which may otherwise not have occurred, rather it "alters the entire flow and structure of mental functions" (Vygotsky, 1981a, p.137; cited in Lantolf & Poehner, 2008, p.7).  For example, Vygotsky (1986) believed that the formation of both spontaneous and scientific concepts developed through "… the functional use of the word, or any other sign, as a means of focusing one's attention, selecting distinctive features and analyzing and synthesizing them …" (p.106).  By mastering language as a meaning making system and being able to deploy it, a learner can also master and develop their own

cognitive activity (Lantolf, 2012, p.57-58). This includes the internalization and self-regulation of a new language.

Language possesses a double function. Language can simultaneously operate outwardly "as a unit of social interaction (i.e. a unit of behavior)" and inwardly, "as a unit of thinking (i.e. as a unit of the mind)" (Prawat, 1999, p.268). Initially speech is social. Over time speech which has social origins is privatized and migrates underground, moving to the intrapsychological plane and becoming inner speech (Vygotsky, 1986, p.32-33). According to Vygotsky, inner speech is "pure meaning"; it is a combination of a culture's meaning and an individual's personal experiences of a particular word or concept with all language stripped away (Swain, et al., 2011, p.45). Inner speech represents the "practice of using the semiotic system of language as a tool for self-regulation and cognitive orientation to a task or situation" (Thorne, 2000, p.231). However, inner speech can resurface as private speech on the intramental (i.e., subvocal) or the intermental (i.e., vocal self-directed speech) plane whenever a cognitively demanding task is encountered. Private speech has many cognitive functions, including: "focusing attention, problem solving, orienting oneself to a task, to support memory related tasks, to facilitate internalization of novel or difficult information, … and to objectify and make salient phenomena and information to the self" (Lantolf, et al., 2015, p.212). Private speech may have the characteristic of reduced phonology (Gánem-Gutiérrez, 2013, p.140) or it may be similar in appearance to communicative speech. To summarize, social speech can be transformed and internalized into inner speech which can then be used to self-regulate the subsequent performance of other tasks. In the case of a particularly complex task, inner speech can emerge as private speech and help an individual to gain control of his/her cognitive activities (Knouzi, Swain, Lapkin, & Brooks, 2010, p.25). Language has a dialectical relationship with thought; language both shapes thought and is shaped by thought.

In summary, all higher order cognitive functioning, including speaking a second language, originates in social activity. Participation in socioculturally organized activity provides opportunities for the development of higher cognitive functions through the internalization of externalized cognitive processes, concepts, and auxiliary devices. Newly integrated processes and tools can then be employed

to voluntarily regulate behaviour and further develop previously internalized mental functions.  Thus, "the mechanism of individual developmental change is rooted in society and culture" (Vygotsky, 1978, p.7).  Gánem-Gutiérrez (2013) argues that language learning is "the increasing ability to use the new language as a mediational tool, both socially and cognitively" (p.129).  In order to better understand how interaction facilitates cognitive development, Vygotsky proposed the metaphor of the zone of proximal development (ZPD).

*3.1.5 Zone of proximal development*

The ZPD was formulated to enable a better understanding of learning and development.  Sociocultural theory establishes two aspects of development: what an individual can perform without assistance (i.e., actual development) and what an individual can perform with assistance (i.e., potential development).  Vygotsky defines the ZPD as, "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p.86).  Regarding language learning, Ohta (1995) reformulated the concept of the ZPD as "the difference between the L2 learner's developmental level as determined by their independent language use, and the higher level of potential development as determined by how language is used in collaboration with a more capable interlocutor" (p.96).  Gánem-Gutiérrez (2013) identifies that "[t]he essence of actual development is self-regulation" (p.135).  Over time, potential development becomes actual development.  Thus, "what learners are able to carry out under mediation at a particular point in time is an empirically based prediction of what they will be able to carry out independently at a future point in time" (Lantolf & Poehner, 2014, p.54).

Mediated activity within the ZPD enables psychological functions to develop. Meaningful interaction facilitates the internalization of abilities and knowledge from the intermental plane to the intramental plane.  This allows potential development to become actual development.  Unsurprisingly, not all activity leads to cognitive development.  Higher cognitive processes do not simply

emerge through task completion; they emerge "as a result of the interaction" (Lantolf & Appel, 1994, p.10). Ohta (2000) explains that "development cannot occur if too much assistance is provided or a task is too easy" (p.52). When engaging in joint activity, the intent is not to arrive at the correct answer as efficiently as possible, but rather to develop learners' higher mental processes.

As development occurs, a learner becomes increasingly independent. Table 2 outlines possible developmental levels within the ZPD (adapted from Adair-Hauck & Donato, 1994, p.541-548; Alijaafreh & Lantolf, 1994, p.470; Gánem-Gutiérrez, 2008, p.13; Wertsch, 1985, p.162-164).

Table 2 outlines how as learners move through their ZPD, their performance transitions from being other-regulated to being self-regulated. Progression within the ZPD is nonlinear and emergent. As actual development is realized, new possibilities open up (Wells, 1999b, p.249), "which in turn leads to further development" (Lantolf & Poehner, 2014, p.57). A study by Aljaafreh and Lantolf (1994) shows how the hierarchical regulation offered within the ZPD can be used to better understand the language learning process.

Aljaafreh and Lantolf (1994) investigated the relationship between error correction and language learning. Three intermediate ESL learners volunteered for eight extra tutorial sessions that focused on four frequently reoccurring grammatical/usage problems (articles, tense marking, prepositions, and modal verbs) within their writing. The goal of the study was to promote language development by helping the participants to gain control over the relevant structures. The mediator endeavoured to co-construct a ZPD with each learner, with the mediation emerging from the interaction between the mediator and the learner. Mediation cycles were unplanned; they involved an initial mediation move by the tutor, a learner response, and then adjustments (either more or less explicit) to the previous mediation. Although a predetermined set of hints was not prepared in advance, an analysis of the sessions did lead to the subsequent formulation of a regulatory scale (appendix A). The scale is graduated and contingent upon the responses of the learners. It ranges from providing broad and implicit assistance (levels 0-3), to providing progressively

Table 2

*Possible developmental levels within the ZPD*

| Level | Description |
|-------|-------------|
| 1 | External strategic assistance is required in order to complete a task. A lack of coherence and a lack of involvement in the task exists. The expert's speech in relation to the specific activity is frequently misinterpreted. The learner is beginning to develop a definition of the task which will allow for participation in a new communicative context. Even with explicit assistance from the teacher, the learner is not able to self-correct errors. |
| 2 | The learner's responsibility for the success of the task increases. The learner and the expert start to create a temporarily shared perspective (i.e., 'intersubjectivity' (Anton & DiCamilla, 1999, p.236)) of the task. However, the learning is controlled by the expert. Although the learner is able to react to the feedback offered, the assistance provided tends to be explicit. |
| 3 | Intersubjectivity increases, which enables the learner to function successfully. The expert's explicit speech is now replaced with abbreviated speech. Level three is still mostly located on the intermental plane. The learner gains more control (i.e., accuracy and consistency) over their performance. The leaner notices and corrects the error with minimal feedback. However the assistance provided is becoming more strategic and implicit. |
| 4 | Performance is becoming more automatized. Negotiation diminishes as the novice starts to assume the instructional role previously assigned to the expert. The novice is more capable of independent problem solving often self-corrects mistakes and is able to independently transfer their knowledge to other contexts. |

more focused and explicitly phrased corrections (levels 10-12). Aljaafreh and Lantolf (1994) show how within their own written production their participants moved away from being dependent on the other-regulation, which was generated by the tutor, and moved towards a partially or completely self-generated capacity to notice and correct errors of the target language. This movement, from other-regulation to self-regulation, indicates that the target

structures were being internalized by the learners.  Aljaafreh and Lantolf's (1994) study highlights that the mediation offered should be of high quality and focused on promoting learner development rather than task completion.

Although individual performances may be similar, individual ZPDs will be different.  Learners who perform to a similar linguistic level (e.g., attaining identical scores on a test) may significantly differ when their potential level of development is taken into account.  In the above study by Aljaafreh and Lantolf (1994), two of the learners were unable to appropriately use the definite article with 'US', for example traveling to *the* US.  Even though these learners omitted the same obligatory linguistic feature, they required different amounts of mediation.  One learner needed explicit intervention, whilst the other learner produced the missing article after being prompted to think about what may be incorrect about her sentence.  Thus although on the surface these two learners performed at a similar linguistic level, they greatly differed in their control over the feature.  This example highlights how language development can be observed at two distinct levels: *actual* (i.e., self-regulated) performance and *potential* (i.e., other-regulated) performance.  From a sociocultural perspective, evidence that development has taken place includes both improvements in actual linguistic performance and a reduction in the "frequency and quality of mediation needed by a particular learner to perform appropriately in the new language" (Lantolf, et al., 2015, p.213).

> '… a learner who is able to produce a particular structure as a consequence of more strategic (i.e. implicit) forms of regulation (for example the collaborative frame) is developmentally more advanced than one who needs direct and explicit feedback for the same property.  This means that linguistic forms alone do not provide us with the full picture of a learner's developmental level. It is essential to know the degree to which other regulation, or mediation, impacts on the learner's production of the particular form.' (Aljaafreh & Lantolf, 1994, p.480)

Solely taking into account actual performance is an inadequate way to measure learning within the ZPD; it is also important to know the *extent* to which learners

can self-regulate their own production as well as changes in the frequency and quality of mediation required.  Thus, L2 development should be "measured in terms of the extent and nature of the mediational mechanisms needed for regulation" (Gánem-Gutiérrez, 2013, p.130).

The ZPD is a metaphor which can be used to understand how learners' emerging capacities develop through dialogically constructed interpsychological events with others.  It offers "a theoretical account of the relation between interactions with others and the development of new cognitive functions" (Lantolf & Poehner, 2014, p.147).  Within a shared cognitive space, more capable others strategically guide novices to carry out potential abilities.  It is through this process that learners internalize a second language.  Internalization can be observed at two distinct levels (i.e., actual performance and potential performance).  The ZPD also shows how Vygotskian sociocultural theory takes the position that cognition is socially distributed.  One way of assessing the learning which takes place within the ZPD is through dynamic assessment.

*3.2 Dynamic assessment*

Dynamic assessment describes a range of assessment approaches that are rooted in the metaphor of the ZPD.  As previously explained, sociocultural theory theorizes that although different learners may perform at a similar level, their underlying abilities may be different.  Therefore, "determining the actual level of development not only does not cover the whole picture of development, but very frequently encompasses only an insignificant part of it" (Vygotsky, 1998, p.200).  The purpose of dynamic assessment is to gain an understanding into abilities which have been fully internalized as well as abilities which are still in the process of developing (Poehner, 2008, p.42).

Dynamic assessment involves the unification of assessment and instruction.  Central to the concept of dynamic assessment is the notion that cognitive abilities can only be fully understood by actively promoting their development.  Thus in order to accurately understand a learner's abilities, dynamic

assessment embeds mediation into the assessment procedure. This is achieved by establishing a ZPD and bringing developed and developing mental processes into the intermental plane. The assessor collaborates with a learner within their ZPD in order to complete assessment tasks, extending the learner's independent performance to levels that they could not reach alone. Though the use of questions, hints, prompts, suggestions, or explanations an assessor may "guide learners in highlighting important content, making connections, setting goals, planning, regulating and controlling behavior" (Anton, 2009, p.579). Interactions between the assessor and the learner are not haphazard; they are carefully attuned (i.e., mediated) to the learner's current abilities. If a learner experiences difficulties during administration of the dynamic assessment, then "the mediator responds to learners' discourse by adjusting intervention to what is needed in each individual case in order to complete the task and show the full potential of the learners' ability" (Anton, 2009, p.592). Learners are encouraged to take as much responsibility for the completion of a task as possible with the assessor ready to provide mediation when needed. The amount and type of mediated assistance needed by the learner as well as learner responsiveness to mediation can be recorded in a number of ways (e.g., grades, scores, profiles). The type of assessment (e.g., multiple-choice, open-ended essay) does not determine the dynamicity of an assessment; how an assessment is administrated determines its dynamicity. Ultimately, dynamic assessment attempts to understand the scope of a learner's abilities through the promotion of their development (Poehner, 2007, p.325).

Three concepts which are important to dynamic assessment are: intentionality, reciprocity, and transcendence. Firstly, intentionality refers to the assessor's deliberate efforts to mediate an activity for a learner. During interaction, the assessor must constantly offer feedback which is sensitive to a learner's ZPD. This mediation must be contingent; it must be "withheld when learners show signs of functioning, and if mediation continues to be offered when not required it may in fact inhibit development" (Lantolf & Poehner, 2014, p.172). Secondly, reciprocity describes a learner's receptivity to mediation. During mediation learners share in the responsibility for development; thus, the learner "is not a passive recipient of knowledge but an active co-constructor of it" (Lantolf & Thorne, 2006, p.336). The assessor must continually be attentive to the learner

and recalibrate the mediation offered in a timely and appropriate manner based on the learner's responses. Consequently, learner responsiveness guides the quality and quantity of mediation provided. Finally, dynamic assessment is not limited to an individual's mastery of a single task. Transcendence relates to an individual's ability to transfer and re-contextualize the knowledge that has been internalized to a more complex and demanding task. True development goes beyond one specific task and "manifests itself in a variety of ways under a multitude of differing conditions" (Lantolf & Thorne, 2006, p.336). Thus, it is expected that assessors and learners collaborate on tasks with increasing complexity.

### 3.2.1 Interactionist vs interventionist dynamic assessment

Divergent interpretations of Vygotsky's theory as well as it being applied in a range of contexts for a variety of purposes have led to a variety of dynamic assessment approaches and methods (Poehner, 2008, p.16). However, the two kinds of mediation that researchers can employ when administering dynamic assessment are interventionist and interactionist (Lantolf & Poehner, 2004). Although both kinds of mediation provide learners with contingent and graduated help, one tends to be more quantitative (i.e., interventionist) and the other tends to be more qualitative (i.e., interactionist).

Interventionist dynamic assessment is used to quantify the amount of assistance required for a learner to complete a pre-specified task. It relies on standardized forms of mediation and administration procedures. Assessors use a hierarchical and fixed set of clues which are determined and scripted in advance. These prescribed cues are carefully arranged on a scale from implicit to explicit and are usually assigned a numerical value. As providing mediation which is more explicit than a learner needs obscures the developmental level of the learner, the assessor attempts to provide the minimal level of support required for the learner to complete the task. The mediator starts at the most implicit hint and follows the prescribed cues, until either the learner answers correctly or the final hint is reached, and the solution is then revealed. Interventionist dynamic assessment assumes that if a learner is able

to respond appropriately to a more implicit form of mediation, then they do not require more explicit assistance. Examples of interventionist dynamic assessment include: diagnosing language aptitude (Guthke, Heinrich, & Caruso, 1986), understanding phonological development (Glaspey & Stoel-Gammon, 2007), attempting to trace mediation which occurred during group work back to participation in classroom dynamic assessment (Davin & Donato, 2013), and developing L2 reading and listening comprehension (Poehner, Zhang, & Lu, 2014). Interventionist dynamic assessment has psychometric properties. Performance is constructed as a property of the learner; thus, the mediator's role "is to determine the degree of explicitness of mediation required to prompt a correct response from the learner" (Poehner, 2008, p.85). As the number of predetermined hints that interventionist dynamic assessment uses is fixed and standardized, comparable numerical scores can be generated for each participant (Lantolf, 2009, p.360). This means that this form of assessment can be conducted with large numbers of participants to produce quantitative data which can be compared at the group level.

The mediation employed within interactionist dynamic assessment is open-ended and emerges from the interactions between the examiner and the learner. Interactionist dynamic assessment is focused on gaining an insight into the kinds of psychological process that the learner might be capable of in the next phase of development and identifying the kinds of instruction, or assistance that will be required if the learner is to realize this potential (Minick, 1987, p.127). Mediation is negotiated with a learner by continually being adjusted according to the learner's developmental needs (Lantolf, 2009, p.360), resulting in qualitative data. Examples of interactionist dynamic assessment include: investigating the relationship between error correction and language learning, although not framed using dynamic assessment (Aljaafreh & Lantolf, 1994), implementing a language enrichment program with advanced learners of L2 French (Poehner, 2008), and devising individualized instructional plans for third-year Spanish majors (Anton, 2009). Interactionist dynamic assessment trades standardization for "access to unique information on psychological processes" (Lantolf & Poehner, 2004, p.68). Researchers who employ interactionist dynamic assessment often adopt a "clinical perspective on diagnosing ZPDs and helping individuals to develop" (Lantolf & Poehner, 2004, p.68). Because

this approach it is more labour-intensive and time-consuming, it is more suited for generating detailed qualitative data on individuals or a relatively small number of learners.

Through the employment of either type of dynamic assessment, rich and detailed information on the extent of a learner's actual and emergent knowledge can be obtained. As well as potentially revealing the depth of a learner's abilities, dynamic assessment also helps learners to realize their future by acting as a catalyst for development (Poehner, 2007, p.325). By attempting to realize learners' potential performance, the assessor gains deeper insights into the extent of the abilities in question and development ensues for the learner. Thus, the process of moving through a learner's ZPD assists a learner in becoming able to self-regulate that which they are being assessed on. Another methodology which seeks to understand learners' emerging abilities is the genetic method.

*3.3 The genetic method*

Vygotsky desired an analytic processes which captures the development of higher mental functions. Vygotsky (1978) explained that "in psychology we often meet with processes that have already died away, that is, processes that have gone through a very long stage of historical development and have become fossilized" (p.63). Thus, he proposed a distinctive research methodology which is currently referred to as the genetic method. Here, genetic is used to indicate historical time frames (Thorne, 2005, p.398). Vygotsky sought to "explain thinking by tracing its development over time" (Lantolf & Poehner, 2008, p.2) within individuals, groups, and processes. Vygotsky (1978) noted that "it is only in movement that a body shows what it is" (p.65). Thus, the genetic method focuses on the phenomena in the *process* of change rather than as the *product* of development (Vygotsky, 1978, p.65). By focusing on the formation of a system, the genetic method attempts to expose the origin, inner workings, and causal dynamics of mental processes as they emerge and subsequently develop (Vygotsky, 1978, p.62). Furthermore, Vygotsky (1978) maintained that in order to understand psychological

phenomena (e.g., language learning), their genesis needs to be examined within culturally specific activity. Because the genetic method examines the process of change as it is happening, it can help to reveal how "processes that originate in social action shaped by semiotic mediation are transferred to the individual plane and shape higher mental processes" (Wertsch, 2010, p.40). Thorne (2005, p.398) writes that Vygotsky defined four genetic domains: phylogenesis (i.e., the development of humans as a species), sociocultural development (i.e., the development of human culture and its mediational tools), ontogenesis (i.e., life histories), and microgenesis (i.e., the development of particular processes over short periods of time).

Vygotsky (1978, p.61) argued that mental functions and processes can develop over short periods of time, a process currently referred to as "microgenetic" (Wertsch, 1985, p.54-55). Because human thinking can be mediated in the interpsychological plane, it should be possible to observe and study mental processes as they undergo change "right before one's eyes" in the space of "a few seconds, or fractions of seconds", and that it should be possible to "trace this development" as it happens (Vygotsky, 1978, p.61). Even in the course of a single lesson, psychological processes externalized on the interpsychological plane can become internalized and in doing so propel a learner towards self-regulation. Thus, a microgenetic approach can capture "language learning in progress" (Swain, et al., 2011, p.41). Due to the intimate connection between thought on the intrapsychological plane and symbolic mediated action on the in interpsychological plane, when learners collaboratively complete L2 tasks the language learning processes that becomes visible in their dialogue offers a window into their L2 learning. Many L2 studies have investigated learner-learner interaction over short periods of time.

*3.4 Peer mediation*

Collaborative learning assumes that during collaborative tasks learners get collective help and guided support as a result of interacting with each other. In other words, learners are able to mutually regulate each other's performance. A study by Ohta (1995) provides empirical evidence of this mutual regulation.

Ohta (1995) analysed the collaborative interaction which occurred between two intermediate learners of Japanese during a role play task.  The pairing was asymmetrical due to the learners differing levels of proficiency.  Mark had weaker language skills; whilst, Becky had a higher level of L2 proficiency.  This asymmetry resulted in Becky often assuming the expert role within the dyad.  In the following example, Becky actively supports Mark's language production.

| 4 | M: | Seko. Seko no. Seko No:: Seko no tokei ga:: (.) a::h um. |
|   |   | *Seiko. A seiko. A seiko:: a seiko watch:: (.) a::h um.* |
| 5 | B: | Ka:: |
| 6 | M: | Katte? itadakitai n desu ga? |
|   |   | *Buy? I'd like you to buy?* |

<div align="right">(Ohta, 1995, p.107)</div>

In line five, Becky helps Mark by providing him with the first syllable of the verb (Ka).  This prompts Mark to produce the second half of the utterance.  Although Mark's learning is located on the intermental plane and is still other-regulated, Becky's assistance has intentionality; it is strategic, implicit, and abbreviated.  However, the role play task also provided Becky, the expert, with an opportunity to develop her linguistic performance.  In the following example, Mark supports Becky's language production.

| 5 | B: | ((pointing to Mark's vest)) Besuto o kitte kitte kitte imasu. |
|   |   | *((pointing to Mark's vest)) You are cutting a vest.* |
| 6 | M: | ((fingering his own vest)) Kiteimasu? |
|   |   | *((pointing to Mark's vest)) Wearing?* |
| 7 | B: | Kiteimasu. Kiteimasu. (.) |
|   |   | *Wearing. Wearing. (.)* |

<div align="right">(Ohta, 1995, p.109)</div>

In line 6, Mark recognizes Becky's pronunciation error and provides her with the correct pronunciation.  Here, the role of the expert has shifted.

Differences in learner abilities are not fixed.  Even a peer who has overall weaker language skills can fill the position of mediator if they have linguistic knowledge to contribute.  Foster and Ohta (2005) explain that "ZPDs are evident wherever one learner is enabled to do something by the assistance of another that he or she would not have been able to do otherwise" (p.414).  The important points here are that learners can provide each other with "developmentally appropriate assistance" (Ohta, 2000, p.52) and each learner has the potential to concurrently be an expert and a novice.  How working collaboratively allows L2 learners to both provide and receive mediation when learning L2 grammatical structures is explored through the concepts of collaborative dialogue, vertically co-constructed linguistic structures, and languaging.

*3.4.1 Collaborative dialogue*

Swain (2000) defines collaborative dialogue as "dialogue in which speakers engage jointly in problem solving and knowledge building" (p.102).  Collaborative dialogue can provide insights into learners' cognitive and strategic processes in language learning (Swain, 2001b).  This is because when learners jointly problem solve and knowledge build, they may overtly use language as a psychological cognitive tool in order to organize and mediate each other's linguistic performance.  Swain (1998; cited in Swain 2000, p.110) gives an example of learners co-constructing linguistic knowledge.  Two students (Kathy and Doug) were audiotaped as they attempted to write a story based on a set of pictures.

| | | |
|---|---|---|
| 1 | K | Et brosse les cheveux. |
| | | *(and brushes her hair)* |
| 2 | D | Et les dents. |
| | | *(and her teeth)* |
| 3 | K | Non, non, pendant qu'elle brosse les dents et… |
| | | *(No, no, while she brushed her teeth and …)* |
| 4 | D | Elle se brosse…elle SE brosse |
| | | *(She brushes…she brushes.)* |

| 5 | K | Pendant qu'elle se brosse lens dents et peigne les cheveux. |
|---|---|---|
|   |   | *(While she brushed her teeth and combs her hair)* |
| 6 | D | Ya! |
| 7 | K | Pendant qu'elle…se brosse…les cheveux, I mean, no pendant qu'elle se PEIGNE les cheveux. |
|   |   | *(While she…brushes…her hair, I mean, no while she COMBS her hair)* |
| 8 | D | Ya. |
| 9 | K | Er se brosse… |
|   |   | *(And brushes…)* |
| 10 | D | Les dents. |
|   |   | *(Her teeth.)* |
| 11 | K | Pendant qu'elle SE peigne les cheveux et SE brosse les dents. |
|   |   | *(While she combs her hair and brushes her teeth.)* |

Kathy starts with 'brosse les cheveux'; Doug offers 'et les dents' (2). Kathy then uses 'brosse' with 'les dents' to form the phrase 'pendant qu'elle brosse les dents et… '(3). Doug then points out the 'brosse' is a reflexive verb 'elle SE brosse' (4); his suggestion is incorporated by Kathy into their construction. The resulting final sentence (11) was created by both Kathy and Doug.

This example illustrates how collaborative dialogue is an enactment of mental processes. For these learners, knowledge was not a pre-existing product waiting to be exchanged (Gánem-Gutiérrez, 2008, p.144). Instead, knowledge was mutually co-constructed on the interpsychological plane through participation in dialogue. By using language to: draw attention to linguistic problems, which noun goes with which verb and the reflexive properties of the verbs, and to test their problem solving hypotheses, Kathy and Doug successfully built linguistic knowledge and problem solved on the intermental plane. Language was used to develop linguistic meaning. The learners controlled their cognitive functioning by using language to externalize and verbalize their inner processing, resulting in the construction of linguistic knowledge. In other words, their learning was mutually regulated by their own

and each other's use of language.  Swain and Lapkin (2002) argue that "through speaking, thought is externalized.  Externalized as an utterance, it becomes an object.  As an object it can be scrutinized, questioned, reflected upon, disagreed with, changed, or disregarded" (p.286).  In summary, Swain (2000) argues that collaborative dialogue "is where language use and language learning can co-occur.  It is language use mediating language learning" (p.97).  As well as co-constructing linguistic knowledge, learners may also co-construct linguistic structures.

### 3.4.2 Vertical co-construction

The vertical co-construction of a linguistic structure can occur within collaborative dialogue.  According to Ohta (2001), co-construction is an explicit form of assistance which occurs "as the peer chimes in with a syllable, inflection, word, or phrase, or completes an utterance started by the peer.  Co-construction sometimes results in vertical construction, in which peers collaborate to produce an utterance, alternately providing words or phrases to the growing utterance" (p.88-89).  Donato (1994) provides evidence of how learners may vertically co-construct grammatical structures as well as the benefits of collaboratively constructing linguistic structures.

Donato (1994) sought to reveal how L2 learning is brought onto the interpsychological plane and then appropriated by individuals.  Donato (1994, p.39) posed the question can learners exert developmental influence on each other's interlanguage systems in observable ways?   His study involved recording L2 learners of French as they completed a one-hour planning session for an oral activity.  The subsequent presentations, one week later, were also recorded.  The learners were told that they could not use notes during their presentation, but they could make notes during the preparation session.  The group talk was analysed for instances where learners resolved deliberations about language (e.g., lexical choices and grammatical constructions).  32 instances of socially co-constructed knowledge were found.  In order to visualize how students resolved the target language, Donato (1994) plotted their conversations onto an axis.  The horizontal axis represents interactional time;

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the vertical axis represents the complexity of the target language; the numbers refer to the participants; and the positive/negative signs represent correct/complete or incorrect/incomplete knowledge.  Figure 2 provides the protocol and its corresponding diagram as the group attempt to render 'you remembered' into French.

A1   Speaker 1   …and then I'll say…tu as souvenu notre anniversaire de marriage…or should I say mon anniversaire?

A2   Speaker 2   Tu as…

A3   Speaker 3   Tu as…

A4   Speaker 1   Tu as souvenu… 'you remembered?'

A5   Speaker 3   Yea, but isn't that reflexive? Tu t'as…

A6   Speaker 1   Ah, tu t'as souvenu.

A7   Speaker 2   Tu es

A8   Speaker 1   Tu es

A9   Speaker 3   tu es, tu es, tu…

A10  Speaker 1   T'es, tu t'es

A11  Speaker 3   tu t'es

A12  Speaker 1   Tu t'es souvenu.
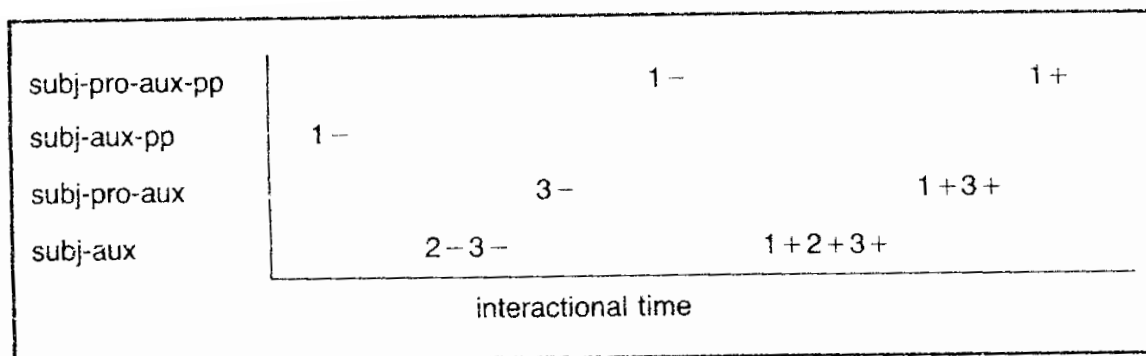


*Figure 2.* Protocol of 'you remembered' and corresponding diagram (Donato, 1994, p.44-5)

Each student is only able to construct a specific aspect of the French past compound tense of the reflexive verb 'to remember'.  Speaker one correctly

produces the past participle (A1); speaker two recognizes the verb as a reflexive (A5); however, speaker three does not include the correct reflexive pronoun into his utterance (A7).  Speakers one and three are then able to arrive at the correct construction by jointly managing components of the problem and building upon the linguistic knowledge which has been previously externalized (A9-12).  The grammatical structure was vertically co-constructed.

Individual knowledge was pooled, forming a linguistic resource.  A distinguishable expert was not present in the group.  However, by pooling their linguistic resources the learners were able to share their fragmentary L2 knowledge in order to surpass the knowledge possessed by any single group member in isolation.  "Wertsch (1979) describes scaffolding as a dialogically produced interpsychological process through which learners internalize knowledge they co-construct with more capable peers" (Thorne & Hellermann, 2015, p.286).  Donato (1994, p.46) builds on this definition, calling the pooling of knowledge in order to solve linguistic problems *collaborative scaffolding*.  In Donato's (1994) study, of the 32 instances of socially co-constructed knowledge, 24 were used correctly by learners in their subsequent presentations.  Therefore, Donato's study provides evidence that collaboratively constructed linguistic knowledge and structures can lead to L2 learning.

*3.4.3 Languaging*

In order to better understand how learners employ language as a cognitive tool to self-regulate their own learning, Swain (2006) proposed the concept of "languaging" (p.96).  The concept of languaging describes the metatalk (i.e., all language used in order to refer to the properties of language) that learners engage in as a means of mediating cognitively complex activities such as internalizing a new language (Swain, 2006, p.96).  Languaging can be performed by both private speech and collaborative dialogue.  Swain et al. (2011, p.40) give an example of two French immersion students who reconstructed and rephrased a text during a dictogloss activity.

1    Rachel        des nouveaux menaces [*some new threats*]

| 2 | Sophie | Good one! {congratulating Rachel on finding a synonym for 'problemes'} |
| 3 | Rachel | Yeah, nouveaux, des nouveaux, de nouveaux. Is it des nouveaux or de nouveaux? |
| 4 | Sophie | Des nouveaux or des nouvelles? |
| 5 | Rachel | Nou…des nou…de nou |
| 6 | Sophie | It's menace, un menace, une menace, un menace, une menaceay ay ay! {exasperated} |
| 7 | Rachel | Je vais le pauser [*I'm going to pause it*] {i.e., the tape recorder} |

{Sophie and Rachel look up 'menace' in the dictionary}

| 8 | Sophie | C'est des nouvelles! {triumphantly}. |
| 9 | Rachel | C'est feminine…des nouvelles menaces. |

Swain et al. (2011, p.40) explain that Sophie and Rachel had heard the phrase 'de nouveaux problemes' (some new problems); however, Rachel suggested using 'des nouveaux menaces' (some new threats). The utterance of 'des nouveaux menaces' creates an artefact that they can discuss, reflect upon and refine. Because the learners identified a linguistic problem, collaboratively solved it, and in the process created new knowledge, the example is a form of collaborative dialogue. Additionally, each learner employed private speech to attend to their own self-set agendas embedded within a broader collaborative activity. Rachel is concerned with the form of the partitive; Sophie is concerned with the form of the adjective (Swain, et al., 2011, p.42).

The above example shows how through languaging, learners "articulated and transformed their thinking into an artificial form and as such it became available as a source for further reflection" (Swain, 2006, p.106). By transforming thoughts into "artifacts that allow for further contemplation, which in turn, transforms thought" (Swain, et al., 2009, p.5), their languaging, which involved both collaborative dialogue and private speech, mediated their language learning. It is an example of how languaging "transforms inner thoughts to external knowing (externalization) and conversely, it transforms external knowing into internal cognitive activity (internalization)" (Swain, et al., 2009, p.5). Furthermore, languaging "assists learners in making connections between

developed concepts and those in the process of development" (Brooks, Swain, Lapkin, & Knouzi, 2010, p.90), mediating the transformation of concepts as they move from the interpsychological plane to the intrapsychological plane. However, languaging is not to be directly equated with thought. Here it is important to remember that sociocultural theory believes that thinking and speaking are not the same thing, and thinking and speaking are not completely independent of each other, rather they are "tightly interrelated in dialectic unity" (Lantolf, 2000, p.7). Lantolf and Thorne (2006) state that "languaging activity is not constructed as the equivalent of thinking; rather it is a means of regulating the thinking process" (p.79). In summary, languaging is "the process of making meaning and shaping knowledge and experience through language" (Swain, 2006, p.89).

### 3.4.4 Peer mediation summary

Working collaboratively allows learners to both provide and receive peer mediation. Mediating each other's linguistic performance provides opportunities for all task participants to restructure and develop features of their linguistic knowledge and L2 production which are not fully self-regulated. Numerous studies have documented how working collaboratively provides learners with opportunities to adjust, refine, develop their linguistic accuracy and communicative competence, and thus perform at a level higher than that at which they could be expected to perform individually (e.g., Anton & DiCamilla, 1999; Dobao, 2012, 2014a, 2014b; Donato, 1994; Gánem-Gutiérrez, 2008; Guerrero & Villamil, 2000; Lapkin, Swain & Smith, 2002; Ohta, 1995, 2000; Storch, 2002a, 2005, 2007; Storch & Aldosari, 2012; Storch & Wigglesworth, 2007; Swain, 2001a; Swain & Lapkin, 1998; Wigglesworth & Storch, 2009), whilst other studies have attributed a lack of learning to the absence of co-construction of knowledge (Storch, 2002b). Sociocultural theory understands learning as a socially mediated process which gradually becomes a psychologically mediated process. Peer mediation is one example of how the development of higher order mental processes is situated within symbolically mediated joint activity.

*3.5 Peer interaction and linguistic gains*

Studies which have used a Vygotskian sociocultural perspective to investigate peer mediation have often been conceptually and theoretically rich but parsimonious with data (Donato, 2004, p.299). This has largely resulted in a micro-level qualitative approach which is not tied to the attainment of specific linguistic outcomes (Lafford, 2007, p.749), especially at the group level. Therefore, in order to give an overview of the studies which have investigated a possible relationship between peer interaction and the attainment of specific grammatical outcomes, I need to include research from an approach which is located within a cognitivist perspective of language learning, the interactionist approach.

The interactionist approach has often been used as a lens with which to investigate the potential language learning benefits of working collaboratively. As well as drawing upon the work of other researchers, the most recent version of the interactionist approach has its roots in Krashen's Input Hypothesis (Krashen, 1977, 1980), Long's Interaction Hypothesis (Long, 1983, 1985, 1996), Swain's Output Hypothesis (Swain, 1985, 1993), and Schmidt's Noticing Hypothesis (Schmidt, 1990, 1993). Norris and Ortega (2003) explain that within this approach, language is believed to be acquired "through engagement with the environment, through inductive and/or deductive learning from input, and in a constructive process (in the Piagetian sense) constrained by general cognition" (p.727). The core components of the interactionist approach are "interactionally modified input, having the learner's attention drawn to his/her interlanguage and to the formal features of the L2, opportunities to produce output, and opportunities to receive feedback" (Mackey, Abbuhl, & Gass, 2012, p.10). Conversation repair acts which occur as a result of some kind of communication breakdown are deemed to be especially beneficial for L2 development.

Unlike a sociocultural perspective which views second language "learning as manifesting itself first in social interaction and only subsequently becoming internalized" (Ellis & Shintani, 2014, p.15), Storch (2013) explains that in theories which are located within an interactionist approach, "the learner's

existing mental capacity is the source of their own learning" (p.7). Interactionist approaches "view language acquisition as primarily a cognitive process and thus focus on what triggers learner internal cognitive processes" (Storch, 2013, p.7). As well as focusing on the efficacy of interaction on L2 learning as learners engage with their environment, theories which are located within an interactionist approach also focus on "*how* learner-internal cognitive mechanisms (such as attentional control and working memory capacity) mediate the relationship between interaction and L2 learning [italics in original]" (Mackey, Abbuhl, & Gass, 2012, p.10).

Whether their research is located within a cognitivist perspective or a Vygotskian sociocultural perspective, SLA researchers have utilized four types of designs. Firstly, collaboratively written texts have been compared with individually written texts. Secondly, linguistic items which learners discuss during their interactions have been identified and subsequently tested using tailor-made posttests. Thirdly, linguistic items discussed during interactions have been traced through to their attempted use in a target-like manner in subsequent individual performance. Finally, the pretest and posttest results of learners who completed a task individually have been compared with those who completed the same task collaboratively. Due to word limit constraints, only one or two studies in each category will be discussed; however, 18 studies are summarized in appendix B.

*3.5.1 Comparison of texts*

Several studies have compared collaboratively written texts with individually written texts. Adopting an interactionist approach, Storch (1999) investigated the impact of peer assistance on students' linguistic accuracy by comparing the accuracy of texts produced in collaboration to the accuracy of texts produced individually. Eleven high-intermediate ESL students completed a series of grammar focused tasks (cloze exercise, text reconstruction, composition). There were two isomorphic versions of each task; they: featured the same theme, were the same length, and contained approximately the same number of grammatical items to attend to. The first version was completed individually; the

second version was completed collaboratively in a following session. When working collaboratively, the participants took almost twice as long to complete the exercises (Storch, 1999, p.366). Tasks completed collaboratively were more accurate than those completed individually; suggesting collaboration has a positive effect on grammatical accuracy (articles, verb tense, aspect, derivational morphology, nominal morphology). The finding that students working collaboratively produce texts which were more linguistically accurate than texts produced by students working individually has since been augmented by Dobao (2012), Malmqvist (2005), Nassaji and Tian (2010), Reinders (2009), Storch (2005), and Wigglesworth and Storch (2009). These studies suggest that working collaboratively provides learners with opportunities to pool their linguistic resources in order to perform at a higher level than individual capabilities.

However, several issues arise from Storch's (1999) study. Firstly, the results may have been confounded by a practice effect since the same participants first performed the versions individually, then in pairs. Secondly, the results could have been influenced by task time as learners took more time to complete the collaborative task than the individual task. Thirdly, a varying effect was observed for different grammatical items, suggesting that "not all grammatical items and structures benefit from the same kind of classroom treatment" (Storch, 1999, p.371). Finally, and this applies to the other studies which have similar findings, improved accuracy must not be mistaken for language learning. This design does not measure language learning through the attainment of specific grammatical outcomes (i.e., measure individual performance before and after the treatment); therefore, it does not show whether working collaboratively results in the internalization of new linguistic knowledge.

*3.5.2 Using tailor-made posttests*

Several studies have investigated the effects of peer interaction by using tailor made posttests. In this approach, learner interactions serve as a type of pretest by indicating a learner's lack of knowledge or mastery. Posttests are then constructed. One study which stands out for its thoroughness is Adams' (2007).

Taking an interactionist approach, Adams (2007) investigated the effectiveness of peer-peer interaction on three linguistic features (past tense, question formation, and locative preposition collocations) for 25 adult intermediate learners of English. Over the course of a week, participants collaboratively completed tasks targeted at each of the target structures. These sessions were audio-recorded. In order to trace the learning of the language discussed with their peers, each learner completed a tailor-made posttest which consisted of two types of items (i.e., acceptability judgment tests and picture labelling items). The posttest, administered five days after the last interaction session, was designed to assess the learning of the forms which participants received feedback on during their interactions. Adams (2007) found that the participants tended to retain the grammatical knowledge discussed with their peers, with evidence of learning for nearly 60% of the items tested. Similar to Storch (1999), there was substantial variation in the learning rates for the different linguistic structures; the past tense items showed the most evidence of learning. Adams' (2007) study suggests that learner-learner interactions can promote the learning of second language forms. Other studies which employed tailor-made posttests have had similar findings (Eckerth, 2008; Spielman-Davidson, 2000; Swain & Lapkin, 1998; Williams, 2001).

However, Adams' (2007) study raises a couple of queries. The acceptability judgment tests used in the tailor-made post-tests are a form of grammaticality judgment tests. Grammaticality judgment tests measure learning through receptive skills. As learners were not asked to produce the target language, it is unclear to what degree their L2 linguistic system has developed. One further point emerges which applies not only to Adams' (2007) study but to others like it. The posttests may simply have indicated consolidation of existing knowledge rather than learning of new knowledge (Storch, 2013, p.83). As pre-testing did not occur, "it is not possible to determine whether the learners did not know the correct linguistic forms before the interactions" (Adams, 2007, p.50). Due to the absence of pre-tests, Adams (2007) acknowledges that it is "important to interpret these results with caution" (p.50).

*3.5.3 Tracing linguistic items*

Several studies have explored whether grammatical knowledge discussed by peers when completing a task carries over into individual performance. This research design attempts to trace whether linguistic knowledge which is discussed by learners can be appropriated and utilized in subsequent independent activity.

Drawing on an interactionist approach, Lapkin et al. (2002) traced the development of the pronominal verbs of eight grade seven French immersion students as they: completed a task (either a jigsaw or a dictogloss task) which involved writing a text, discussed their text in relation to a reformulated model (two days later), completed a stimulated recall activity (two days later), and then individually made changes to their text (four days later). Lapkin et al. (2002) were interested in whether the participants made independent revisions to their stories based on the act of jointly comparing the reformulated text to their initial stories. Pairs' discussions were video-recorded. In order to measure language learning, Lapkin et al. (2002, p.488) compared the incorrect verbs in pronominal contexts from the students' initial story (pretest) with rewritten verbs contained within their subsequent independent revisions (posttest). The posttest data provides evidence that most of the learners progressed in their correct use of pronominal verbs in French. Lapkin et al. (2002) argue that these results and the collaborative dialogue which accompanies the discussion of the reformulations provide evidence of linguistic development. Other studies with similar methodologies have similar findings (Swain & Lapkin, 2002; Tocalli-Beller & Swain, 2005).

However, issues surround Lapkin et al.'s (2002) study. Firstly, there was no comparison group. There was not a group of participants who individually wrote the initial text, compared it to a reformulated text, and made subsequent revisions. As the independent variable of working collaboratively was not fully isolated, it is unclear whether the improvements in the participants' pronominal verbs were due to collaboratively discussing the reformulated text or due to completing the treatment tasks. Secondly, the robustness of the participants' linguistic gains can be questioned. In Lapkin et al.'s (2002) study, the posttest

involved making corrections to a previously written text and took place just six days after comparing the previously written text to a reformulated model. Thus, the participants' linguistic gains could be simply due to memorizing chunks of the reformulated model and regurgitating them in an almost identical context. The linguistic concepts which underpin that knowledge may have remained undeveloped. Asking the participants to complete a different task which required them to transfer and re-contextualize their knowledge would have provided stronger evidence of linguistic development.

*3.5.4 Comparing the pretest and posttest results*

Several studies have investigated the impact of completing tasks individually and collaboratively using a pretest-posttest research design. These studies have tended to use form-focused tasks in order to measure gains in participant's knowledge of specified linguistic structures. The results of these studies are mixed.

Drawing on an interactionist approach as well as a Vygotskian sociocultural perspective, Nassaji and Tian (2010) investigated whether completing tasks (reconstruction cloze and reconstruction editing) in pairs led to greater gains in knowledge of phrasal verbs than completing the tasks individually for twenty six low-intermediate adult learners of English over a two-week period. Each week began with a pretest, a mini lesson on the targeted verbs, completion of exercises either in pairs or individually, and four days later a posttest. Participants were given eight minutes to complete the tasks; all pair work was audio recorded. Linguistic gains were measured by testing the participants using a five-point vocabulary knowledge scale. Similar to other studies (Dobao, 2012; Malmqvist, 2005; Reinders, 2009; Storch, 1999, 2005; Wigglesworth & Storch, 2009), Nassaji and Tian (2010) found that learners working in pairs completed the tasks more accurately than learners working alone. In the posttests, all twenty-six participants improved on their knowledge of the targeted phrasal verbs. However, the results of the pretests and posttests did not reveal the existence of any statistically significantly linguistic gains for the condition tested (i.e., individual vs collaborative). Thus, superior task

performance did not translate into superior learning.  Other studies which have employed a similar pretest and posttest research design also have non-significant findings (Kuiken & Vedder, 2002; Reinders, 2009).

Limitations exist in Nassaji and Tian's (2010) study.  Nassaji and Tian (2010, p.412) hypothesize that the lack of learning in their study may have been caused by: the difficulty of the target forms, the developmental readiness of the learners, the goals of the participants, or the participants' limited collaboration skills.  Furthermore, the relatively short treatment time (eight minutes) may have been problematic.  Nassaji and Tian (2010) speculate that the interactions between the learners, which were brief and "may not have been rich enough to lead to the appropriation and internalization of the word knowledge" (p.412).

One study which employed a pretest-posttest design found a statistically significant learning effect for collaborative learning.  Spielman-Davidson (2000) employed a Vygotskian sociocultural lens to investigate whether completing tasks collaboratively led to greater gains in knowledge of French conditionals than completing the regular classroom curriculum.  Two samples of eight students took part in the study ($N = 16$).  The participants were grade 8 students who were studying in a French Immersion setting.  After the initial pretest, the participants of the experimental group received four weeks of treatment sessions.  An immediate posttest was given; the delayed posttest took place eleven weeks later.  The treatment for the experimental group consisted of a mini-unit, comprising of two main writing activities as well as writing a comic strip and two dictoglosses.  These treatment sessions were audio-recorded. The comparison group "received their teacher's regular instruction based upon his 17 years of experience" (Spielman-Davidson, 2000, p.41).  Also, the instruction of the comparison group was not scheduled around the timeline of the study.  Testing consisted of a cloze test, a paragraph writing test, and an interview.  An analysis of covariance indicated that a statistically significant difference occurred between the two groups at posttesting on the paragraph writing test and the interview.  Additionally, the audio-recording of the experimental group revealed how learners are able to mediate each other's learning of the target structure.  Spielman-Davidson (2000) concluded that

"learners can and do resolve linguistic problems by jointly constructing linguistic knowledge … and applying this knowledge in subsequent use" (p.iii).

However, several concerns exist. Firstly, the treatment given to the comparison group between pretesting and posttesting is not clearly detailed. It is not clear what, how and when the comparison group were taught. Spielman-Davidson (2000) acknowledges that "the study group likely received more time on the conditional during the intervention period than did this comparison group" (p.36). Thus, the statistically significant differences between the two groups may be due to higher levels of exposure to the target structure. Secondly, Spielman-Davidson's (2000) study was not a "true experiment" (Cohen, Manion, & Morrison, 2007, p.275) as it did not include a control group. Thus, we cannot be certain that the statistically significant language learning gains reported in this study are due to the treatment tasks or are due to an unknown concurrent experience. Finally, the small sample size limited the power of the statistical tests.

*3.5.5 Current limitations*

From the studies which sought to link peer interaction to the attainment of specific grammatical outcomes, several methodological weaknesses emerge.

Previous studies have overlooked the degree to which their participants developed their linguistic knowledge. As previously explained (see *section 3.1.5*), language development can be observed at two distinct levels: actual performance and potential performance. Because previous studies have only measured actual performance, they have neglected to pay attention to the possible improvements that their participants may have made in their potential performance. Thus, the development of emerging abilities may have gone undetected. This is problematic because a participant may have developed in their ability to self-regulate a linguistic feature but not to the extent that their improvement registers on a study's data collection tools. Thus, the treatment used in these studies may have been more effective than initially thought. This point is salient for the findings of previous studies which found that working

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collaboratively led to superior task performance but not superior learning (Kuiken & Vedder, 2002; Nassaji & Tian, 2010; Reinders, 2009).

Participants may not have been provided with a meaningful amount of exposure to the target language.  Alegría de la Colina and García Mayo (2007) identify that a single task may not have immediate effects but, rather, "triggers a process, so repeated exposure is needed to consolidate gains" (p.28).  Kuiken and Vedder (2002), Nassaji and Tian (2010), and Reinders (2009) all investigated L2 gains and working collaboratively by employing three or fewer treatment sessions.  These three studies did not find statistically significant differences within their results.  However, studies which employed more treatment sessions did find statistically significant differences between learning individually and learning collaboratively, for example Spielman-Davidson (2000) had fifteen sessions.

The durability of the linguistic gains is not clear.  With the exception of Spielman-Davidson (2000) who administered a post-test in week 15, the studies examined within the literature review have focused on short-term linguistic gains.  If linguistic gains which are thought to have been brought about by the act of working collaboratively lack durability, then it is possible that peer interaction may be less effective at bringing about self-regulation than currently thought.

Previous studies did not employ a control group.  Even though some of these studies use the word control group (e.g., Kuiken & Vedder, 2002), what they are actually referring to is a comparison group (i.e., a group which completed the treatment tasks individually).  Thus, the effects of working collaboratively have not been fully disentangled from concurrent experiences.  In other words, the reported linguistic gains may not have been due to the treatment condition.

Previous studies used a small sample size.  Of the studies which compared pretest and posttest results of individual task completion with collaborative task completion, the number of participants was relatively small, ranging from eight (Spielman-Davidson, 2000) to 34 (Kuiken & Vedder, 2002).  Small sample sizes limit the power of statistical analyses.  A statistically significant result can be

obtained either by "having a large coefficient together with a small sample or having a small coefficient together with a larger sample" (Cohen et al., 2007, p.520).  It is possible that statistically significant differences were not detected due to the use of small sample sizes.   This is known as a Type II error (Cohen et al., 2007, p.145).

Inferential statistical tests may have been used inappropriately.  All studies discussed in the literature review did not report information about their data which underpins their choice of inferential statistical test.  For example, Kuiken and Vedder (2002) employed an analysis of covariance (Ancova).  An analysis of covariance (Ancova) assumes that the data for each category of the independent variable is approximately normally distributed and the distributions of data in the groups being compared have the same shape (Laerd Statistics, n.d.).  However, Kuiken and Vedder (2002) did not report the distribution or variance of their data.  For studies which omit key information about their data, it is impossible to independently verify whether their use of inferential statistical tests is appropriate.  Additionally with the exception of Eckerth (2008), studies which have employed inferential statistical tests did not report their effect sizes.

In 1994, Donato (1994) stated that independent validation is required in order to determine whether peer co-constructed linguistic knowledge "brings about independent L2 performance at a later time when support is no longer available" (p.51).  Over 20 years later, this independent validation has yet to be provided in a robust way.

*3.6 Academic rationale*

There is both qualitative and quantitative evidence which suggests that when learners collaboratively complete form-focused tasks, the processes which take place and the knowledge created can be a source of language learning.  However, the findings of the studies which have explored the complex relationship between peer interaction and improvements in L2 performance are either conceptually and theoretically rich but parsimonious with data (Donato, 2004, p.299) or have employed designs with limitations.  Thus as well as a

contextual rational (see *section 2.3*), an academic rationale for this study also exists.  Utilizing the framework of Vygotskian sociocultural theory, this study will investigate the effects of working collaboratively on longer-term self-regulated performance of a complex grammatical structure as well as the cognitive processes involved.  The following research questions will be investigated in tandem.

- To what extent does working collaboratively to complete form-focused tasks impact on learners' longer-term performance of a complex grammatical structure?

- How does working collaboratively enable undergraduate learners in a Qatari context to move towards being able to self-regulate a complex grammatical structure?

A careful exploration of the relationship between working collaboratively and the resulting longer-term effects on linguistic performance is an important step in understanding the benefits of peer mediation when teaching L2 form in a Qatari undergraduate context.

**Chapter 4 – Methodology**

This chapter describes the context in which the study was carried out, rationalizes and explains the research design, methodologies and data collection tools, and outlines the data collection procedures.

*4.1 The research site*

This study is situated within a general proficiency English course (ENGL250) which is part of Qatar University's undergraduate core curriculum. All students at Qatar University are required to complete language classes in both English and Arabic regardless of their college's medium of instruction. These language classes contribute towards their GPA. ENGL250 has been designed to meet the English proficiency needs of students who are enrolled in colleges whose medium of instruction is Arabic. ENGL250 is intended to be of a difficulty which is equivalent to the Common European Framework of Reference (CEFR) level of B1 (Council of Europe, 2001). Qatar University's 2015-2016 Undergraduate Student Catalog contains the following description of ENGL250.

> "This course provides an opportunity for students to continue to increase their English language proficiency but with major weight on reading and writing skills. Readings include a diverse range of articles from authentic texts so that critical thinking, reading strategies, and fluency are developed. Both semi-formal and formal writing skills are incorporated in writing times so that students are familiar and flexible with texts required for collage study and different majors. Vocabulary, grammar, listening and speaking are extended through integrative, immersive activities using highly interactive and collaborative strategies, as well as technology-based communication tools. All sessions are designed around the principles of active learning and student-centered practices." (Qatar University, 2015, p.348-9)

ENGL250 requires five contact hours a week over a 15-week period and uses the textbook *Life: Intermediate*, (Stephenson, Dummet, & Hughes, 2013). Since this study was carried out, ENGL250 has been modified.

*4.2 The participants*

Six classes of male ENGL250 students were invited to participate in the study. The participants were recruited over two semesters. Three parallel classes participated in fall 2015 and three parallel classes participated in spring 2016. These classes were selected because their class teacher agreed to help with the study. Initially, 105 students volunteered to participate in this study; however, this number was later reduced to 52 participants (see *section 4.14*). The participants completed a background questionnaire (appendix C) which was designed to find out basic biographical information, previous educational experience of learning grammar, and attitudes towards working collaboratively. The results contained within appendix D pertain to the 105 students who initially volunteered to participate in the study.

All of the participants were between 17-44 years old, nationals of Arabic speaking countries, and shared Arabic as their L1. Other languages spoken include: Turkish, French, Korean, Hebrew, German and Portuguese. Most participants had been learning English for between 11 and 15 years. The most frequently identified high school methods of English grammar instruction were: 'the teacher told me the grammar rules' (69%); 'my teacher said a sentence and I repeated it' (35%), 'memorizing the grammar rules' (30%), and 'translating sentences in English to Arabic' (30%). 65% of the participants indicated that they preferred to learn with other students with 51% of the participants identifying that working with other students is either very helpful or extremely helpful in improving their knowledge of grammar. Because Qatar's relatively recent government reforms in primary and secondary education (see *section 2.2*) are still in the process of filtering down into actual classroom practices, it is probable that the participants had uneven high school experiences of learning English.

It was assumed that the English proficiency level of the participants was heterogeneous. ENGL250 is compulsory for all students who are studying in Arabic. When the study was undertaken, no exemption policy was in place. Thus regardless of English proficiency level, ENGL250 was compulsory for all

students who studied through the medium of Arabic.  This resulted in an intake of students who had varying levels English proficiency.

The sampling was convenient, concurrent, and nested.  Firstly, the sample is convenient (Cohen et al., 2007, p.113).  All classes were taught by the teacher who agreed to help with the study.  Thus, the participants were students who happened to find themselves in one of these classes.  Secondly, the sample is concurrent (Collins, Onwuegbuzie, & Jiao, 2007, p.276-7).  Each time the experiment was run, data were collected around the same time and the groups did not interact each other.  Finally, the sample is nested (Collins, et al., 2007, p.276-7).  Additional data was collected from several participants within the experimental group.

*4.3 The teacher*

All participants were taught by the same teacher.  The teacher worked full time and was employed by the institute in which this study is situated.  The teacher has a Master's in TESOL and over 10 years of experience.

*4.4 Ontology*

Vygotskian sociocultural theory unites the mind and the material world in dialectical unity.  The dualism between autonomous learners and their social environment which underpins many SLA theoretical assumptions does not exist in sociocultural theory.  For Vygotsky, the emergence of cognitive functions (e.g., voluntary attention) is not simply a matter of innate abilities growing into a mature state.  Instead, cognitive functions are the consequence of the interaction between the brain and social activity (Lantolf & Poehner, 2014, p.37).  Although "neurobiology is a necessary condition for higher mental processes" (Lantolf, et al., 2015, p.207), organic structures in the brain are constructed using external means (Vygotsky, 1989, p.55).  For example, when solving a complex task, language provided by a mediator, which is accessed through the medium of sound waves, can be incorporated into the solution of a task by a learner, subsequently modifying the neural structures in the learner's

brain.  Lantolf and Poehner (2014, p.19) explain that "the human body is essentially comprised of the same material as the objects about which it thinks" (p.19).  Thus, a material reality exists, and humans are a part of this reality.  Thinking exists not separate from the material word but is a "mode of existence of the body itself" (Lantolf & Poehner, 2014, p.19).  This position results in Vygotsky's understanding of consciousness as "the subjective reflection of material reality by animate matter" (Wertsch, 1985, p.187).

Humans both affect and are products of their material and social conditions.  Sociocultural theory posits that higher cognitive development originates and continually develops in interaction.  We are all born into a pre-existing world of meaning.  Cognitive functions emerge from "new ways of thinking, acting, and being that result from an individual's engagement in activities where he or she is supported by cultural artifacts and by interactions with others" (Poehner, 2008, p.1).  If the material and social conditions of humans change, then their psychology can change.  In other words, social circumstances can shape psychology.  For example, stressful events have been shown to negatively impact on working memory (Lantolf & Poehner, 2014, p.35).  Conversely, humans can use their higher mental functions in conjunction with mediating tools to affect changes in their material and social conditions which in turn has the potential to affect their own psychology in a positive manner.  When Vygotsky attempted to formulate his educational psychology, he drew heavily from Marxism, emphasizing that sociocultural theory should look widely at "the context in which the individual and the activity are situated" (Swain, et al., 2011, p.xii).

As well as individual development being located within material and social conditions, it is also located within historical conditions.   As a person mentally develops over the course of their lifetime (i.e., ontogenesis), their environment and their relationship with their environment also changes.  This is because as each generation internalizes culturally created auxiliary devices, it has the opportunity to modify them; this includes language (Lantolf & Poehner, 2014, p.52).  Thus, "human consciousness is built upon the foundation of biological mental processes that are retained but restructured by culture in the creation of higher mental functions" (Lantolf & Poehner, 2014, p.21).  This ontology is

termed "dialectical materialism" (Lantolf & Poehner, 2014, p.17).  Vygotskian sociocultural theory proposes "a dialectical understanding of biology and culture as mutually influencing processes that together form the conditions of ontogenetic (individual) and societal development" (Thorne & Hellermann, 2015, p.282).  Ultimately, the mind is formed through a historical process of recursive change.


*4.5 A mixed methods design*


Traditionally, studies which have employed a sociocultural lens have investigated peer interaction through methodologies which originate from the interpretive paradigm (Thorne, 2005, p.398).  This has led to "close empirical study of symbolic interaction in naturally occurring microsocial situations" (Sawyer, 2002, p.285) and resulted in detailed pictures being built up of how and why languages are learned through participating in socially situated activity (Gánem-Gutiérrez, 2008, p.147).  However, a social environment has the potential to facilitate and promote language development for *all* individuals who are located in that environment.  Thus although variability in linguistic development exists across learners (Lantolf, et al., 2015, p.219), we *all* still appropriate linguistic knowledge through participating in social interaction within our respective environments.  Ergo, if a specific type of interaction tends to facilitate linguistic development in a particular context, then tasks which promote this type interaction should facilitate linguistic development, not just for one individual, but for the majority of individuals who are located in that context.

In order to answer the research questions, the methodology needs to examine both the outcomes and the process of learner-learner interaction.  Firstly, the methodology needs to determine the extent to which working collaboratively impacts on learners' longer-term performance of a complex grammatical structure.  Large amounts of learners need to be involved as well as standardization.  Secondly, in order to gain an understanding into how working collaboratively enables learners to move towards being able to self-regulate a complex grammatical structure, the cognitive processes involved need to be accessed.  A mixed methods approach can address both of these needs.

Although many mixed methods designs exist, an embedded design is able to examine both outcomes as well as the processes which may have influenced those outcomes.

*4.5.1 An embedded design*

An embedded design is a mixed methods approach in which the collection of one type of data is embedded within the research design of the other type of data. Hashemi and Babaii (2013) explain that "embedded designs can be used to provide detailed qualitative analysis of the sub-systems that exist or the processes that prevail within an experiment" (p.842). In this study, the collection of qualitative data was embedded within a quasi-experimental design. Figure 3 illustrates how the embedding occurred at the design level (Creswell & Plano Clark, 2011, p.68).



*Figure 3.* Flowchart of the embedded design (adapted from Creswell & Plano Clark, 2011, p.70 & 93)
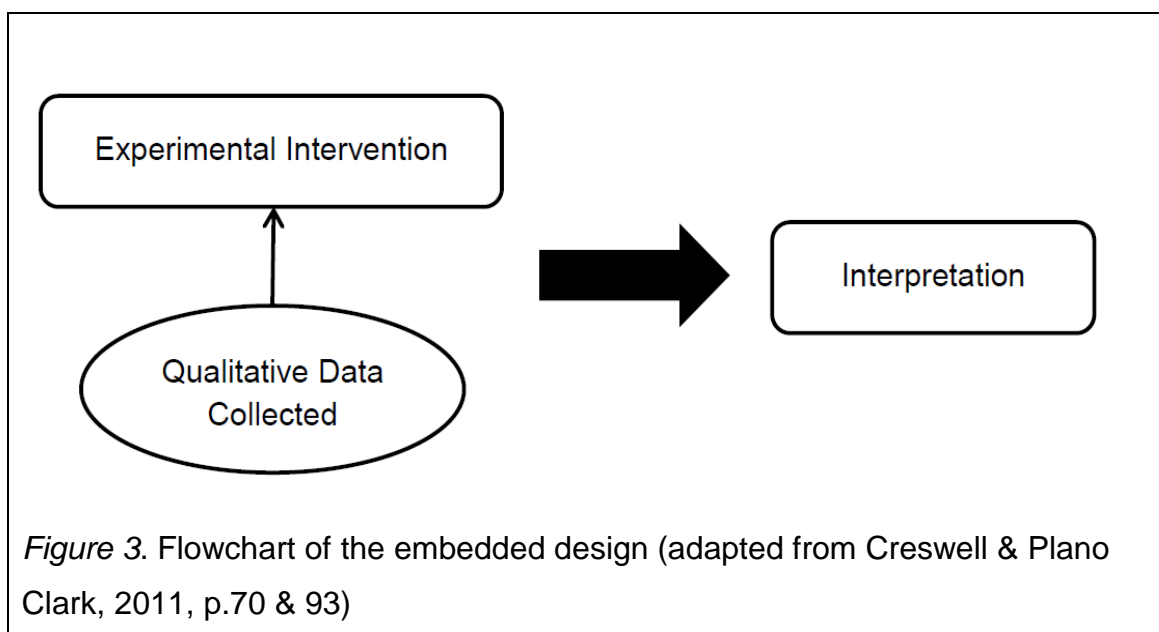
Quantitative data produced by experimental intervention can provide evidence of longer-term improvements in linguistic performance at the group level; whilst, qualitative data can provide rich and detailed information about how learners may have developed their linguistic performance at the individual level. These two sets of data are collected concurrently and are of equal priority (Creswell & Plano Clark, 2011, p.65). An embedded design is able to tie microsocial level data which explains how complex processes unfold in a specific situation to the

attainment of specific linguistic outcomes which are a likely outcome of those processes.

*4.5.2 The design*

This study employed a quasi-experimental pretest-posttest embedded mixed methods design.  Three groups were utilized: an experimental group, a comparison group, and a control group.  The experimental group completed the treatment tasks collaboratively; the comparison group completed the treatment tasks individually; and the control group did not complete the treatment tasks. For more detailed information which explains what each group did during the study, please see *section 4.13.3.*  Quantitative data was collected three times (i.e., pretest, posttest, delayed posttest) over a 12-week period.  Between the pretest and the posttest, the treatment tasks were administered, and qualitative data was collected.  Figure 4 provides an overview of the design.
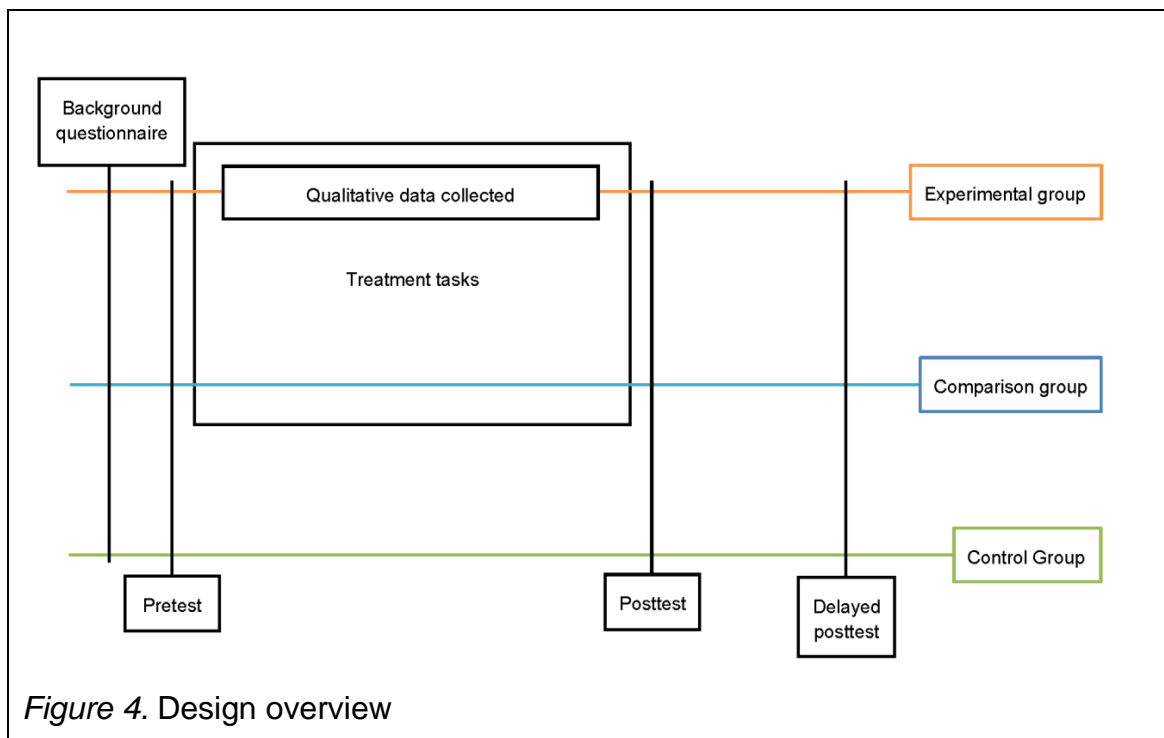


*Figure 4.* Design overview

The experiment was carried out twice, once in the fall 2015 semester and once in the spring 2016 semester.  The quantitative data generated was combined, producing one data set for each group.  Qualitative data was only collected during the fall 2015 semester.

*4.6 Measuring linguistic gains*

Linguistic knowledge is the dependent variable; whilst, how the treatment tasks are carried out is the independent variable. A Vygotskian understanding of the world perceives all traits as emergent and dynamic, rather than innate and stable. Solely taking into account a second language learner's actual performance is an inadequate way to measure learning; it is also desirable to know the *extent* to which learners can self-regulate their own production. Therefore in this study, linguistic ability includes both actual and potential performance. Linguistic knowledge is operationalized as the ability to accurately produce two predetermined structures of the passive voice at the sentence level with the aid of mediation. Linguistic development is operationalized as a reduction in the explicitness of mediation required to accurately produce these two predetermined structures of the passive voice in both the tests and the treatment tasks. Knowing to what extent the participants are able to self-regulate the target structures provides a clearer understanding of linguistic development. Ultimately, language learning is conceptualized as moving from being able to do something with the help of others to being able to do it independently (Vygotsky, 1978).

*4.7 Target structures*

As previously explained, linguistic knowledge is operationalized as the ability to accurately produce two predetermined structures of the passive voice at the sentence level with the aid of mediation. Using predetermined structures allows for a more focused picture of development at the microgenetic level and facilitates the comparison of performance gains across tests. Additionally, the use of two target structures provides the study with two dependent variables. If a statistically significant result is shown for each target structure, then the case for the independent variable (i.e., working collaboratively) is stronger.

The participants' linguistic performance is operationalized through their ability to produce the structures of the simple past passive and the present continuous

passive. Both of these structures have clearly defined structural elements and semantic properties. The simple past passive has the following construction.

- passive subject + be verb + past participle + by + agent

The present continuous passive has the following construction.

- passive subject + be verb + being + past participle + by + agent

Voice is a grammatical concept. The passive voice is expressed by a syntactic pattern which can be manipulated by speakers in order to meet their communication needs. For example, the passive voice can be used to hide the agent of an action or to make the subject of a sentence the victim of an action. Within the series of courses that ENGL250 is part of, the passive voice is not explicitly taught until ENGL250. This means that within this sequence of courses the participants would not yet have had their awareness raised of the conceptual and transferable properties of the target structures. From a sociocultural perspective, it was anticipated that at the start of the study the participants' knowledge and performance of the target structures would be primarily based on spontaneous conceptual knowledge rather than scientific conceptual knowledge. However, it is possible that any participant may have had their awareness raised of the conceptual properties of either target structure before the start of the study.

Learners may experience the following difficulties with either target structure. They may believe that the subject of the sentence is the agent; they may not correctly conjugate the past participle; they may omit auxiliary verbs; they may use an incorrect auxiliary verb; they may unintentionally not produce the agent; they may use an incorrect preposition instead of 'by'; they may mix up the order of the words; finally, they may confuse the concept of time with the concept of aspect (Aitken, 2001; Parrott, 2002). However each time a difficulty arises, an opportunity for joint knowledge building and joint problem solving also arises. Consequently during the treatment sessions, the complexity of the target structures creates opportunities for different learners to supply different information about different structural elements and semantic properties, whilst

the structural complexity of these structures should also provide opportunities to measure improvements in potential performance during testing.

*4.8 Interventionist dynamic assessment*

This study's design requires a testing procedure which can be administrated with a relatively large number of participants in order to produce comparable quantitative data which shows the extent of the mediation required for the participants to produce the target structures. Interventionist dynamic assessment can meet this requirement. Interventionist dynamic assessment can be used to quantify the explicitness of mediation required for a learner to complete a pre-specified task. Thus, interventionist dynamic offers the possibility of quantifying improvements in the participants' potential performance of the target structures.

The use of interventionist dynamic assessment necessitates the use of a control group. An issue arises when tests which are based on the theory of dynamic assessment are administered in conjunction with treatment activities. Dynamic assessment attempts to gain a deeper understanding of an individual's cognitive abilities by actively promoting their development. It accomplishes this by providing a mediated learning experience. However, this provision of mediation also assists the learners in internalizing that which they are being assessed on. This means that the use of interventionist dynamic assessment offers each participant, regardless of which group they belong to, an opportunity to develop their linguistic knowledge of the target structures independent of the treatment tasks. In order to disentangle the potentially performance enhancing effects of the testing procedure from the potentially performance enhancing effects of the treatment, a control group is needed. Even though the control group received no formal classroom instruction on the passive voice, it was still expected that their knowledge of the target structures would improve.

*4.9 The tests*

The tests were designed around the principles of interventionist dynamic assessment. This section explains how the tests were constructed; how each test item was validated; how the mediation was conceptualized; and how the testing process was validated.

*4.9.1 A test item*

Each test item is a sentence level written production task. To create an obligatory context for the production of the target structures, each test item contains a scenario which requires participants to write a predetermined sentence. Both text and illustrations are used to create this scenario (see figure 5). A local artist was commissioned to draw each picture.

A stem sentence begins the target sentence. The main verb and the agent are supplied in parentheses. The participants were expected to use and modify the words in the parentheses as well as adding their own function words to complete the sentence. Each test item was administered dynamically. Participants were given four attempts to correctly write each target sentence. For each target structure, a bank of test items was created.

*4.9.2 Creating the test items*

Several principles guided the construction of each test item.
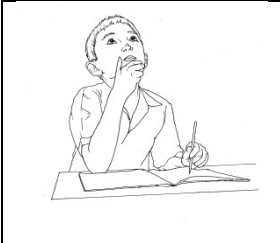
The sentences that the participants needed to produce were standardized. Firstly, only regular verbs were used. Irregular verbs each have their own unique past participle that must be learned on a word by word basis. If the participants did not know a specific irregular past participle, then they would be unable to write the target sentence correctly. Secondly, all of the sentences required an agent. Agents were required in order to gain a fuller understanding of each participant's knowledge. Thirdly, the verb and the agent in the stem sentence never shared the same root word. For example, 'solve/student' is

acceptable but 'climb/climber' is not.  Fourthly, the participants were only required to produce the auxiliary verbs 'was' for simple past passive, and, 'is' and 'being' for the present continuous passive.  Finally, no phrasal verbs or modal passives were used.

| | | |
|---|---|---|
| $4(4x) + 2(x) = 72$ | + | $4(4x) + 2(x) = 72$<br>$16x + 2x = 72$<br>$18x = 72$<br>$x = 72$ |
| a math question | a student | |

Last lesson, a teacher asked his students a math question.  The question was very difficult.  Many students could not find the answer to the question.  Finally, one student found the answer.  The question _____(answer/student). The teacher was very pleased.


1._____


2. _____


3. _____


4. _____

*Figure 5.* Example test item

The construction of the paragraphs was controlled.  Firstly, all words were within the first three thousand words of the British National Corpus and the Corpus of Contemporary American English (BNC/COCA)[1].  These corpuses were chosen because the participants may have had exposure to both British and American English.  The first three thousand words were chosen as a cut-off

[1] http://www.lextutor.ca/

point because the participants were deemed to be of intermediate proficiency. However, some words that are not within this cut-off point were exempted, including: proper nouns, words depicted by the accompanying pictures, or words that are very familiar to the participants (e.g., downloaded).  Secondly, each paragraph contains 4-7 sentences and 35-53 words.  Additionally, all of the paragraphs have a Flesch-Kincaid readability test score of 70 or higher.  A cut-off point of 70 was chosen as the readability level of texts with this score is deemed to be "fairly easy" (Ward, 2008).  Thirdly in order to better contextualize each target sentence, it was placed in the middle of the paragraph.  The sentences before and after the target sentence are in the same tense.  Finally, all sentences, except the target sentence, are in the active voice.  Thus, participants were not provided with a model of the target structure within a test item.

Initially, a test bank of 25 potential test items was created for the simple past passive target structure and a test bank of 26 potential test items was created for the present continuous passive target structure.

### 4.9.3 Validating the test items

In order to ensure a high level of internal consistency, all test items were validated.  Each test item was piloted non-dynamically (i.e., statically, without external mediation).  Static assessment is an efficient way to validate large numbers of test items.

Thirteen ENGL250 classes were recruited to validate the test items.  To varying degrees, these learners had already received instruction pertaining to the passive structure within ENGL250.  It was unrealistic to give each student all 51 test items (i.e., 25 simple past items and 26 present continuous test items); therefore, each target structure's test items were distributed into five test versions (appendices E and F).  Each pilot test version contained five or six test items and an equal amount of active voice distractor items.  Distractor items ensured that the students needed to think about the context that each test item

created and then make a conscious decision about which voice was required. Each test item was completed by between 35–46 learners.

Partial scoring was used to grade the piloted test items. The passive voice is a complex grammatical structure. Thus, there may be different degrees of correctness to a student's answer. If scoring is in proportion to accuracy, then the scores generated "should differentiate between more comprehensive, precise, or sophisticated responses and incomplete or partially correct responses" (Anderson & Morgan, 2008, p.41). For each target structure, a scoring system was devised for partially correct answers (appendices G and H).

From the scores, the following values were calculated the facility index of each test item, the discrimination index of each test item, and the Cronbach's alpha coefficient of each test version. Appendix I explains how each of these values were calculated and applied. Six test items were removed from the test banks. Appendices J and K provide the metadata for each test item. Table 3 summarizes the measures of internal consistency for the remaining test items.

Table 3

*Measures of internal consistency*

| Test Bank | Number of test bank items remaining | Range of facility scores (%) across the items | Range of discrimination scores across the items | Range of Cronbach's alpha scores across the versions |
|---|---|---|---|---|
| Simple past passive | 21 | 41.304 - 77.906 | 0.667 - 0.958 | 0.738 - 0.882 |
| Present Continuous passive | 24 | 30 - 47.143 | 0.667 - 1 | 0.898 - 0.923 |

A Cronbach alpha was calculated for all of the remaining items in each test bank. The test bank of simple past passive test items scored 0.843; the test bank of present continuous passive test items scored 0.887. Thus, the test

banks demonstrate high levels of internal consistency. Appendices L and M provide the finalized test banks with the removed items clearly identified.

### 4.9.4 Construction of the tests

Each test contained two test items, one for the structure of the simple past passive and one for the structure of the present continuous passive. A randomization program[2] was used to select the items for each test. Test items or scenarios that were duplicated across a participant's set of tests were corrected using the same randomization program.

### 4.9.5 The moves of mediation

The mediation provided was controlled. As previously explained, linguistic development is operationalized through a reduction in the explicitness of mediation required to accurately produce the target structures. A standardized inventory of *moves of mediation*, which could be used to quantify the explicitness of mediation required to accurately write a target structure, was created.

The moves of mediation were based upon Aljaafreh and Lantolf's (1994, p.471) thirteen-point regulatory scale (see appendix A), specifically points three, five, seven, and ten (see table 4). From the points in table 4, a standardized set of four moves of mediation was formulated (table 5). Each move is based around the explicitness of the regulation required to produce a target structure. The moves are arranged from most implicit to most explicit. A score was assigned to each move.

---

[2] https://www.randomizer.org/

Table 4

*Points taken from Aljaafreh and Lantolf's (1994) regulatory scale*

| Point | Action taken |
|-------|--------------|
| 3 | Tutor indicates that something may be wrong in a segment. |
| 5 | Tutor narrows down the location of the error but does not identify the nature of the error. |
| 7 | Tutor identifies the error. |
| 10 | Tutor provides the correct form. |

If a participant writes the correct answer at the first attempt, then the participant is considered to be self-regulated within the context of the test and receives a score of 4. If a participant initially writes an incorrect answer, the assessor will initiate the moves of mediation. Firstly, the participant is alerted to the presence of their mistakes. This is the most implicit form of mediation offered. Secondly, the participant is shown the location of their mistake(s). Thirdly, the participant is given specific information about the nature of each mistake and alerted to its specific location. Linguistic terms such as 'past participle' were not explained to the participant during a test. Finally, the correct answer is revealed. Explanations of mistakes were not given due to the need to comply with the time limit for testing (see *section 4.12*). Table 6 provides an example of how the moves of mediation could be applied for the test item previously given in figure 5. The hypothetical participant in table 6 would be given a score of 0.

By quantifying the explicitness of mediation required to accurately produce a target structure, each score quantifies a participant's potential performance in the context a test item. A reduction in the explicitness of mediation required, as shown by a score change across tests, represents linguistic development and movement towards self-regulation. However, a score received by a participant only represents the explicitness of the mediation required to write a target structure. A score does not represent the amount or the exact nature of mediation required to write a target structure. Participants can receive differing quality and amounts of mediation but still achieve the same score. To illustrate, two participants each reached the third move mediation level and are supplied with specific information about the nature of their mistakes. The sentence of the first participant has one mistake; whilst the sentence of the second participant

Table 5

*Moves of mediation*

| Move of Mediation | Purpose of assessor's actions | Example of phrasing | Physical action of assessor | Score received |
|---|---|---|---|---|
| 1 | To indicate presence of mistake(s) | There is a mistake./There are mistakes. | none | 3 |
| 2 | To indicate location of mistake(s) | There is a mistake here. | To indicate location of mistake(s) | 2 |
| 3 | To give information about error(s) | The sentence needs to be in the simple past/present continuous tense. | none | 1 |
| | | This word needs to be in the past/present. | To indicate the word which is incorrect | |
| | | The main verb should be a past participle. | To indicate the word which is incorrect | |
| | | You need to use a different preposition. | To indicate the word which is incorrect | |
| | | A/an be verb/ing be verb/past participle/preposition is missing here. | To indicate the location of the missing word | |
| | | These words are in the wrong order. | To indicate which words are in the incorrect order | |

| | | You have (an) extra word(s). | To indicate which word(s) are extra |
|---|---|---|---|---|
| 4 | To give the correct answer | Here is the correct answer. | To show the correct answer | 0 |

Table 6

*Example application of moves of mediation*

| Participant's production | Move of mediation | Assessor's comment(s) | Assessor's actions(s) |
|---|---|---|---|
| *The question answers the student. | 1 | There are mistakes. | none |
| *The question answer the student. | 2 | There are mistakes here, here, and here. | To indicate where the mistakes are |
| *The question is answer the student. | 3 | The sentence needs to be in the simple past. This be verb needs to be in the past. The main verb should be a past participle. A preposition is missing here. | To indicate where the mistakes are |
| *The question is answered by the student. | 4 | Here is the correct answer. | To give the correct answer |

has three mistakes.  Therefore, the first participant receives one piece of specific information; whilst, the second participant receives three pieces of specific information.  If both participants write the target sentence correctly on their fourth attempt, then they both receive a score of one.  Thus, scores do not represent how much mediation a participant has received or the exact nature of that mediation; a score only represents the explicitness of the mediation required to write a target structure.  Each time a participant completes a test item, a score is created which represents the subsumption of the information collected and the conditions under which it was collected.  I acknowledge that a different incarnation of interventionist dynamic assessment, for example one with a more nuanced scoring system, implemented under different testing conditions could have yielded data that was a more accurate representation of each participant's linguistic knowledge.  For more information pertaining to the limitations of how the participants' linguistic knowledge was measured see *section 7.3.2*.


*4.9.6 Piloting the testing procedure*


Ten tests were piloted under test conditions with learners enrolled in ENGL250. These learners had already received instruction pertaining to the passive structure within ENGL250.  Several concerns surfaced.

When writing the target sentence, as well as using the words provided in the parentheses, some learners also added their own content words.  When questioned, these learners explained that it was not clear from the instructions that adding their own content words was prohibited.  Therefore before the pretest, each group was given a whole class demonstration on how the tests would be administered.  Additionally when administering a test, the assessor could give additional instruction on an ad hoc basis on how to complete a test.

Several learners took an excessive amount of time to write a sentence.  This resulted in some learners taking over five minutes to complete a test.  In my application for the Exeter University Certificate of Ethical Research Approval (appendix W), I stated that,

"In order to carry out the dynamic assessment, the participants will be removed from their classroom for a short time (less than 5 minutes). Due to the short duration, this will have minimal impact on the participants of the study."

In order to stay within the limits of my 'Certificate of Ethical Research Approval', two changes were made to the dynamic assessment procedure. If a participant did not write a sentence, then it was not possible to administer a move of mediation. Thus, no time limit was imposed for a participant to write their initial answer; however, a time limit of 30 seconds was imposed for each subsequent sentence. After receiving a move of mediation, if a student did not write a sentence within the specified time limit, the next move of mediation was administered. To further save time, after receiving a move of mediation, participants were not required to write each sentence afresh; they could just write the corrections on the line below. After introducing these changes, the majority of the pilot participants were able to complete two test items within the five-minute time limit.

Some students looked at their answers to previous questions in an attempt to figure out an answer. This resulted in some participants ignoring a move of mediation and importing an incorrect structure from a previous test item. In order to prevent this, each test item was presented on a separate piece of paper. Once a test item was completed, it was collected.

### 4.9.7 Reliability and validity

Standardized administration procedures, scripted moves of mediation, as well as a high level of internal consistency within each test bank contribute to the reliability of the scores generated.

The quantitative data has a high level of construct validity. The construct that this study attempts to measure is the participants' linguistic knowledge of the structures of the simple past passive and the present continuous passive.

Several features contribute to the construct validity.  Firstly, the target structures are clearly defined.  The participants were expected to produce passive structures in the simple past and present continuous tenses which contain singular or uncountable subjects, regular main verbs, and agents which are countable, singular, and animate.  Secondly unlike receptive measurements (e.g., grammatical judgment test or multiple-choice questions), production reduces the possibility of a participant guessing a correct answer.  Also unlike tailor made posttests (e.g., Adams, 2007; Eckerth, 2008; Spielman-Davidson, 2000; Swain & Lapkin, 1998), the results do not allow for the possibility of confusing the possible consolidation of linguistic knowledge with linguistic development.  Thirdly unlike static tests, dynamic assessment provides a nuanced insight into the participants' linguistic development of a target structure across tests because it attempts to reveal both actual and potential performance.

*4.9.8 Summary - Testing*

The testing procedure attempts to measure the participants' linguistic development of the target structures.  If the participants in the experimental group show the biggest improvement in their posttest scores, then working collaboratively is thought to better promote longer-term self-regulated performance of the target structures than working individually.  However, it is also understood that the participants' performance is "an artifact of the assessment procedure rather than a representation of their true abilities" (Poehner, 2008, p.72).

*4.10 Microgenesis*

As previously stated (see *sections 4.2 and 4.5.2*) additional data was collected from several participants within the experimental group.  This data was transcribed and subjected to a microgenetic analysis.  The construct of microgenesis refers to both "those observed language learning instances as the *object* of the study" and "the methodological *tool* to investigate language learning instances as observed in short periods of time" (Gánem-Gutiérrez,

2008, p.120).  Thorne (2000, p.228) explains that it is through language use that developmental processes are most clearly illustrated.  A microgenetic analysis of participants in the experimental group collaboratively completing the treatment sessions may provide a window into their inner processing.  This window may reveal how learners use language as a cognitive tool to mediate each other's learning.  Furthermore, a microgenetic analysis allows for each utterance to be analysed in relation to the sequence of the other utterances. Thus, a microgenetic analysis also offers the potential to trace the participants' understanding and performance of the target structures through the completion of the treatment sessions.  A microgenetic approach was applied to the data collection and data analysis of the experimental group during the fall 2015 semester.

*4.10.1 Unit of analysis*

In this study, the concept of microgenesis is operationalized through a unit of analysis called the Language-Related Episode (LRE).  LREs capture instances of learners' explicit attention to language use.  Initially, Swain and Lapkin (1995) defined LREs as instances when "a learner either spoke about a language problem he/she encountered while writing … or simply solved it without having explicitly identified it as a problem" (p.178).  Later, Swain and Lapkin (1998, p.326) refined their definition, identifying that LREs are any part of a collaborative dialogue in which the learners talk about the language they are producing or produced, including: talking about the language they are using, questioning an aspect of their language use, or correcting themselves or others. Swain and Lapkin (2002, p.292) explain that LREs can focus on lexical items (e.g., adverbs, nouns, adjectives, verbs etc.), form (e.g., articles, pronouns, prepositions, sentence structure etc.), discourse markers (e.g., temporal sequencing, text structure etc.) or mechanics (e.g., pronunciation, spelling, punctuation etc.).  By providing "evidence of language use as both enactment of mental processes and as an occasion for L2 learning" (Swain & Lapkin, 1998, p.320), the construct of LREs can provide a detailed picture how language learning occurs in peer interaction.  LREs can provide empirical evidence of moment by moment changes in the participants' performance and

understanding as well as how the participants use language as a cognitive tool to mediate each other's learning. Consequently, the use of LREs as this study's unit of analysis enables Vygotsky's general genetic law of cultural development to be studied within a sequential series of "microcosms" (Wertsch, 1985, p.193).

In this study, LREs are defined in terms of the participants' interpsychological use and discussion of the target structures. LREs about the target structures were identified using both Swain and Lapkin's 1995 definition and 1998 elaboration. As well as the learners discussing properties of the target structures, this also includes instances of learners using the target structures as well as instances of learners applying the concept of the passive voice to a sentence in the active voice. Excluded in this study's definition of an LRE are instances of learners reading the instructions of a task, reading a text (e.g., to orient themselves with a task), and instances of learners checking their answers with the aid of an answer key unless these instances are accompanied by a discussion or a comment about a target structure. Thus, an LRE will either show the participants' attempting to produce a target structure or contain evidence of discussion, reflection, or questioning pertaining to the linguistic properties of a target structure. An LRE is determined to be over when the participants either: finish answering a question, finish editing a sentence, finish writing a sentence, or conclude discussing a feature or property of a target structure.

## 4.11 The treatment tasks

In order to provide the participants with a meaningful amount of exposure to the target structures as well as a context for meaningful interaction, there were six treatment sessions, three for the structure of the simple past passive and three for the structure of the present continuous passive. All treatment tasks were created by me for use in the present study.

*4.11.1 Creating the treatment tasks*

Each target structure has its own guided learning task, text-editing task, and dictogloss task.  Several principles guided the construction of these tasks.

Each task required written output.  Writing tasks create a permanent record which invites discussion and revision.  Thus, written output aligns well with an intent to access externalized cognitive processes.

Each task was form-focused rather than meaning-focused.  Studies have shown that more controlled grammar tasks tend to generate more form-based interaction than more meaning-based tasks (e.g., Alegría de la Colina & García Mayo, 2007; Philp, Walter, & Basturkmen, 2010; Storch 1998, 2001b; Williams, 1999).  Designing the tasks around form should result in the participants' attention being directed towards the target structures.

Each task could be completed either individually or collaboratively.  The comparison group required treatment tasks which could be completed individually; whilst, the experimental group required treatment tasks which could be completed collaboratively.  Although the treatment tasks were constructed with the intention of facilitating dialogic interaction, each activity was not reliant on another learner for completion.

The vocabulary of the text-editing and dictogloss tasks was controlled.  Firstly, all words used within each of these tasks were within the first three thousand words of the British National Corpus and the Corpus of Contemporary American English (BNC/COCA).  This excluded proper nouns, words depicted by the accompanying pictures, or contemporary words that are very familiar to the participants.  Additionally, each task has a Flesch-Kincaid readability test score of 70 or higher.  Also, the main verbs contained within the passive structures within each treatment task are different to the main verbs that the participants needed to produce within each test.

*4.11.2 Guided learning*

The first treatment task was a guided learning task. Guided learning is a form inductive pedagogy. Inductive pedagogy is a process that moves from the specific to the general, with learners studying examples and from these examples deriving an understanding (Thornbury, 2007, p.49). Alfieri, Brooks and Aldrich (2011) analysed 164 studies, concluding that "the construction of explanations or participation in guided discovery is better for learners than being provided with an explanation or explicitly taught how to succeed on a task" (p.11). A guided learning task provided an opportunity for the participants to discuss and reflect upon the conceptual properties of the target structures through identifying their syntactic structures and then solving linguistic problems.

Each guided learning task contains two parts. Part one involves answering a series of questions about example sentences. One example sentence is an active construction and one example sentence is a passive construction. The accompanying questions are designed to focus the participants' attention on the similarities and differences in form and meaning between the active voice and the passive voice. Some questions pertain to metalinguistic terminology. Metalinguistic terminology was included because previous research has shown that when completing form-focused tasks, knowledge of metalanguage can assist with focusing attention and solving language problems (e.g., Alegría de la Colina & García Mayo, 2007; Fortune, 2005; Gánem-Gutiérrez & Roehr, 2011). Also, the moves of mediation contain metalinguistic terminology. Part two involves completing a restricted practice activity. The participants were required to convert passive voice sentences into the active voice and active voice sentences into the passive voice.

The guided learning tasks were piloted with ENGL250 students. 24 students completed the tasks collaboratively; 23 students completed the tasks individually. The students were given around 20 minutes to complete each task. No assistance was provided until the feedback stage. No major problems arose from the piloting. However, one change was made to the tasks. A sentence containing a plural 'patient' was added into the restricted practice

activity. This was done to ensure that the participants did not assume that 'was' is the only be verb needed to make the simple past passive construction and 'is' is the only be verb needed to make the present continuous passive construction. The ENGL250 syllabus requires learners to have an understanding of plural patients. Also, the text-editing tasks contain mistakes which concern verb plurality, adding a plural 'patient' should better prepare the participants for these tasks. Appendices N and O provide the finalized guided learning tasks.

*4.11.3 A text-editing task*

The second treatment task was a text-editing task. A text-editing task focuses on grammatical accuracy. Learners are presented with a text in which sentences have been omitted or changed. Learners then need to locate and correct the errors. Several studies have found that text-editing tasks can elicit learner discussion and reflection on predetermined grammatical structures (García Mayo, 2002; Nassaji & Tian, 2010, Storch, 1998, 2001b, 2002a, 2004, 2007), including one study from an Arabic context (Storch & Aldosari, 2010). The text-editing tasks provided an opportunity for the participants to discuss and apply the knowledge gained from the guided learning tasks.

Initially, three text-editing tasks for each target structure were made and piloted (appendices P and Q). Each piloted text-editing task contains one paragraph which is between 64-80 words in length, consists of five-nine sentences, and contains three active voice mistakes and three passive voice mistakes. Appendices R and S contain the metadata for the piloted text-editing tasks. Containing mistakes in both active and passive sentences ensured that the participants could not employ the strategy of finding a sentence that seems odd and then rewrite it using a passive structure.

The six text-editing tasks were piloted with ENGL250 students. 22 students completed the tasks collaboratively; 23 students completed the tasks individually. The students were given around 15 minutes to complete each task. No major problems arose from the piloting. The students indicated that

the texts about the rhinos were the most interesting.  Both texts about rhinos were selected.

*4.11.4 A dictogloss task*

The third treatment task was a dictogloss task (Wajnryb, 1990).  Dictogloss involves reading a short text which contains predetermined linguistic structures. The learners take notes which they use to reconstruct the text as closely as possible to the original text in terms of grammatical accuracy.  In the feedback stage, the version produced by the learners is: analysed, compared to the original text, and corrected.  Studies have suggested that dictogloss tasks can be used with L2 learners to develop their knowledge of the passive structure (Kuiken & Vedder, 2002; Qin, 2008).  Dictogloss tasks can draw participants' attention to the target structures and encourage them to reflect on and discuss the grammatical accuracy of their own output.

Two of the unused paragraphs that had previously been written and piloted for the text-editing task were used for the dictogloss task.  The paragraphs used were the historical text about the uses of oil (appendix P) and the narrative text about traveling on an airplane (appendix Q).  These dictogloss passages were recorded by a female with a neutral American accent.  Each passage was read at normal speed; no special emphasis was placed on the target structure.  Each recording is approximately 30 seconds.

The dictogloss tasks were piloted with ENGL250 students.  22 students completed the tasks collaboratively; 23 students completed the tasks individually.  When piloting the task pertaining to the simple past passive, the students listened twice to the recording.  Initially, students just listened; the second time they took notes.  The students were then given around 15 minutes to recreate the original text.  Under these conditions the majority of the students in both groups struggled to recreate the original text.  The following step was taken; the students listened three times to each recording, taking notes on the second and third times.  When the students completed the dictogloss task pertaining to the present continuous passive, they were not able to write down

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the recording verbatim, but they were able to fairly accurately reconstruct the original text. No further changes were made.

### 4.11.5 Summary of treatment sessions

Each treatment task is a cultural artefact which contains the potential to mediate learning. The mediational means embedded within each treatment task are the linguistic knowledge contained within a task, the way in which a task is organized, the way in which the knowledge is presented, and the theories of learning grammar imbued within each type of task. Additionally, all participants could supplement this mediation by drawing upon previously internalized linguistic knowledge. This knowledge includes existing spontaneous and conceptual knowledge of grammatical rules and syntactic structures. When the participants in the comparison group completed the treatment tasks individually, they self-regulated their interaction with the target structures. As well as self-regulation, completing the treatment tasks collaboratively provided the participants of the experimental group with access to a shared cognitive space in which they could pool their resources in order to provide and receive peer mediation. The treatment tasks were intended to provide learners with an opportunity to produce the target structures and in doing so consciously reflect on the grammatical accuracy and the meaning of their language use. Although what transpires during a task may substantially differ from what is expected, completing the treatment tasks was expected to enable the participants to develop their understandings of the target structures. Learners could then employ these new understandings to better regulate their performance of the target structures in the other treatment tasks and on the tests.

### 4.12 Ethics

Approval to carry out the study was gained from both Qatar University's Institutional Review Board (appendix V) and Exeter University's Graduate School of Education (appendix W).

Participation in the study was voluntary. All potential participants were informed about the aims and purposes of the study in a whole class context; additionally, a demonstration of the testing procedure was given. It was also conveyed that participation was not obligatory and not participating would not be disadvantageous.

Informed and written consent was given by all participants. There were two consent forms. The first consent form (appendix X) was required for general participation. The second consent form (appendix Y) was required in order to be audio-recorded during each of the treatment tasks. Each consent form gave a brief overview of the study and detailed what participation involved. If they signed the first consent form, then the 2015 fall semester participants in the experimental group were given the option of signing the second consent form. Learners who were unsure about participating were allowed to take the consent form(s) home and reflect. All potential participants were offered an opportunity to ask questions in a face-to-face meeting with me before deciding whether or not to take part.

An ethical consideration arises from administering the tests and treatment tasks during class time. In order to complete a test, a participant needed to leave their respective class. When each participant completed a test, their class continued to be taught without them. In order to cause as little disruption as possible to the academic lives of the participants, a five-minute time limit for testing was imposed. Also, a five-minute time limit enabled a test (e.g., the pretest) to be carried out with a class of 25 over a period of three days or less.

It is ethical to subject all students who are in the classes which have been assigned as the comparison and experimental groups to the treatment tasks whether they have agreed to being participants or not. This is because the ENGL250 syllabus was still fully covered by the class teacher; the treatment tasks just provided additional level-appropriate practice.

*4.13 Procedures*

Data collection followed the timeline in table 7.  Each participant took the pretest prior to completing the treatment tasks; the posttest was administered after the completion of the final treatment task; the delayed posttest was given five weeks later.  The class teacher was confident that space could be found within the syllabus to complete one treatment session per week.  Although the Exeter University Certificate of Ethical Research Approval (appendix W) states that three 30-minute treatment sessions were to be administered, the administration of six shorter treatment sessions equated to a similar amount of time.  Additionally, the participants consented to receiving six treatment sessions (appendices X and Y).  Evidence exists that interleaved learning conditions are more effective than blocked learning conditions (Carpenter & Mueller, 2013; Rohrer, 2012).  Therefore, the sequence of the treatment sessions alternated between target structures.

*4.13.1 The tests*

A whole class demonstration of the testing procedure was given.  This demonstration used simple past and present continuous test items in the active voice.  Using active voice items ensured that the participants were shown how the testing process functioned but were not provided with models of the target structures.  As well as demonstrating how the moves of mediation would be administered, it was demonstrated how the participants were required to add their own 'grammar' words to write an answer.  The participants were also shown that once their initial sentence was written, they were not required to write each sentence afresh; they could just write the corrections on the line below.  The participants were informed that linguistic terms, such as 'past participle', would not be explained during the test.  Finally, the participants were made aware of the 30 second and five-minute time limits.

On a day of testing, the class teacher proceeded with the lesson.  Meanwhile, I located myself in the corridor outside the classroom.  Each participant stepped out of the classroom and was tested.  When being tested, each participant was

Table 7

*Timeline of events*

| Group | Week | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 12 |
| Control | | •pretest | | | | | •posttest | |
| Comparison | •demonstration and consent form<br>•background questionnaire<br>•pretest | •pretest<br>•guided learning (simple past passive) | •guided learning (present continuous passive) | •text-editing (simple past passive) | •text-editing (present continuous passive) | •dictogloss (simple past passive) | •dictogloss (present continuous passive)<br>•posttest | •delayed posttest |
| Experimental | | | | | | | | |

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told the following, '*Read the paragraph.  Use these words to write the missing sentence*'.  When administering a test, I gave additional instruction on an ad hoc basis on how to complete a test.  Each test item was administered on a separate piece of paper.  No time limit for the first sentence was imposed; however, for each subsequent sentence a time limit of 30 seconds was imposed.  If a sentence was not complete after this time, then I administered the next move of mediation.  If requested, a move of mediation was repeated.  Apart from the initial sentence, the participants did not have to write in complete sentences; they could alter existing sentences by writing replacement words underneath.  Participants who were not able to complete a test within the prescribed five-minute time limit were provided with the correct answer(s) and returned to their class.  Initially, I intended to give these participants a score of zero for the test items for which they received the answers and to keep them in the study.  However upon reflection, these participants were later removed from the study (see *section 4.14*).  After each participant was tested they went back to the classroom and continued with their lesson.  As it was not possible to test all participants within the timeframe of one lesson, the tests took place over several consecutive days.

Participants who scored maximum points on a pretest were kept in the study for two reasons.  Firstly, it was impossible to completely remove all traces of these participants from the study.  This was because some of these learners would still participate in the treatment sessions as they were administered in a whole class setting.  Secondly, the possibility of regression exists (Anton & DiCamilla, 1999, p.234; Lantolf & Thorne, 2007, p.200).  It is theoretically possible that the treatment sessions adversely affect some participants; for example, this may happen if incorrect linguistic knowledge is co-constructed with peers.

*4.13.2 Treatment sessions*

The experimental and comparison groups completed the treatment sessions.  The treatment sessions occurred during class time and were administered by the participants' regular class teacher in a whole class setting.  Each treatment task has its own administration procedures (appendix Z).  When the participants

were completing the treatment tasks, the class teacher avoided answering all questions about the target structures; however, questions pertaining to task instructions were answered.  All written work was collected.

The target structures were included in a unit covered by the ENGL250 syllabus. For all groups, the unit in the course book in which the target structures were explicitly taught was moved to week 13 of the study, after all data had been collected.  This was achieved by exchanging the course book unit in question with the course book unit initially intended for week 13.

The experimental group completed the treatment sessions in groups of two or three.  In order to build knowledge and solve linguistic problems, leaners need to pool individual knowledge.  Working in pairs may be problematic.  If one member of a dyad has limited knowledge of a target structure, then the dyad may be stifled in their attempts to build knowledge.  Groups of three result in a potentially greater pool of linguistic knowledge.  However, it is acknowledged that when working in groups, learners may have fewer opportunities for individual participation (Storch, 2013, p.60) and learners may feel less pressure to contribute (Dobao, 2012, p.53).  Groups of three were encouraged; however, groups of two were permitted.

The participants in the experimental group self-selected their own groups.  Due to preexisting social relationships, self-selection of group members can result in the formation of groups which are collaborative (Storch, 2013, p.163). However, it is acknowledged that self-selection prevented the control of L2 proficiency (Kim & McDonough, 2008; Storch & Aldosari, 2012; Watanabe, 2008; Watanabe & Swain, 2007; Yule & McDonald, 1990).  Learner roles within groups (e.g., scribe) were also not prescribed.  Thus, each group was left to decide the distribution of labour, develop the relations of power, and to manage the task.  The completion of the task was the shared objective of the group.

No L1 restrictions were imposed.  Studies have shown that learners can successfully use their L1 as a cognitive tool to mediate the learning of another language for themselves and for their peers (e.g., Alegría de la Colina & García

Mayo, 2009; Anton & DiCamilla, 1999; Gánem-Gutiérrez & Roehr, 2011). The use of an important cognitive tool was not denied to the participants.

Four participants in the experimental group were audio-recorded for all treatment sessions. On the condition that their partner(s) gave consent to being audio-recorded, these participants were free to decide with whom they completed each treatment task. In order to obtain high quality audio-recordings, when the treatment sessions took place the audio-recorded participants were removed from their classroom and located in a nearby empty classroom. The teacher still introduced the activity and gave feedback to these students after the task was completed.

Initially, I intended to exclude participants from the study if they missed three or more treatment sessions. However upon reflection, participants were removed from the study if they missed one treatment session of either target structure (see *section 4.14*).

### 4.13.3 Summary of each group's participation

Participants in the control group completed the pretest, posttest, and delayed posttest. Participants in the control group did not complete any of the treatment tasks. Participants in the control group were explicitly taught the target structures in week 13 of the study, after all data had been collected.

Participants in the comparison group completed the pretest, posttest, and delayed posttest. Participants in the comparison group completed the treatment tasks (i.e., guided learning, text-editing, and dictogloss) individually in a classroom setting. When the participants were completing the treatment tasks, the class teacher avoided answering all questions about the target structures; however, questions pertaining to task instructions were answered. Post-task feedback was given by the class teacher in a whole class setting. All written work was collected. Participants in the comparison group were explicitly taught the target structures in week 13 of the study, after all data had been collected.

Participants in the experimental group completed the pretest, posttest, and delayed posttest.  Participants in the experimental group completed the treatment tasks (i.e., guided learning, text-editing, and dictogloss) collaboratively in a classroom setting.  Participants in the experimental group completed each treatment task in self-selected groups of two or three.  Learner roles were decided by the group's members and participants were not prevented from using their L1.  When the participants were completing the treatment tasks, the class teacher avoided answering all questions about the target structures; however, questions pertaining to task instructions were answered.  Post-task feedback was given by the class teacher in a whole class setting.  All written work was collected.  Participants in the experimental group were explicitly taught the target structures in week 13 of the study, after all data had been collected.

*4.14 Final participant numbers*

53 participants were excluded from the data analysis.

Mediation received pertaining to one target structure could potentially aid the development of the other target structure.  Participants could receive exposure to the target structures in two ways.  They could participate in a treatment session or they could complete a test.  Because the two target structures share some of the same parts of speech which are used in the same way (i.e., past participle and the preposition 'by'), participants could theoretically use information learned from one target structure to improve their performance of the other target structure.  For example, a participant could receive information about how to use the proposition 'by' in a treatment session pertaining to the structure of the simple past passive and then apply this information during a test to their performance of the structure of the present continuous passive.  Initially it was intended that participants who did not complete all tests and participants who were absent for less than three treatment sessions would *not* be removed from the data analysis.  However upon reflection, in order to completely standardize opportunities for mediation for all participants, each participant

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should complete all tests and all treatment tasks. It is preferable to have a smaller set of complete data than a larger set of incomplete data.

As this study was set in an authentic context and participation was voluntary, many students did not fulfil the criteria for participation. Firstly, many students were absent for either a treatment session or a test. Many of the participants had other commitments, including family, work, and academia. Secondly, some participants were not able to complete both tests within the prescribed five-minute time limit. A participant whose testing time expired may have been able to write a target structure but because of the time limit they were denied the opportunity. Thirdly, for some students completing a test was a stressful experience. The moves of mediation were prescripted and administered within a fixed time limit. Therefore, when a participant wrote an incorrect answer, they received feedback in the form of a predetermined and inflexible move of mediation. Some participants became frustrated and removed themselves from testing. In total, 52 participants completed all tests and all treatment tasks. The participants were distributed as follows: control ($n = 16$), comparison group ($n = 16$), and experimental group ($n = 20$).

*4.15 Methodology - Summary*

In order to explore how working collaboratively may impact upon learners' longer-term performance of a complex grammatical structure, two methodologies which have their roots in Vygotskian sociocultural theory were integrated into a quasi-experimental pretest-posttest embedded mixed methods design. The attainment of specific linguistic outcomes was measured by using interventionist dynamic assessment to quantify the explicitness of assistance that a learner required to write each target structure at the sentence level. Each participant completed a pretest, posttest, and delayed posttest. Any participant who could not complete a test item independently was given mediation in the form of standardized moves of mediation. Participants in the comparison and experimental groups completed six treatment sessions, three for the structure of the simple past passive and three for the structure of the present continuous passive. The cognitive processes which were verbalized when learners worked

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collaboratively to complete the tasks were investigated using a microgenetic approach.  As well as providing a window into learners' inner processing and their use of language as a cognitive tool, the microgenetic approach also provided an opportunity to trace learners' understanding and performance of the target structures across the treatment sessions.  The design of the present study was intended to examine both the outcomes of working collaboratively as well as the cognitive processes which may have influenced those outcomes.  This design was then carried out over a 12-week period with 52 undergraduate EFL learners who were enrolled in a Qatari institute of higher education.

**Chapter 5 – Findings and data analysis**

The findings are divided into two sections. The first section reports to what extent collaboratively completing the treatment tasks impacted upon learners' performance of the target structures. The second section explores how completing the treatment tasks collaboratively may facilitate longer-term movements towards self-regulation of the target structures.

*5.1 Data analysis – The tests*

> *To what extent does working collaboratively to complete form-focused tasks impact on learners' longer-term performance of a complex grammatical structure?*

By examining group level changes in performance across tests, the quantitative data attempted to determine to what extent working collaboratively impacted upon the participants' linguistic development. This section explains how changes in performance were quantified; then, descriptive statistics are given, and inferential statistical tests are applied to the data.

5.2 Scoring

Linguistic development is operationalized as a reduction in the explicitness of mediation required to accurately produce a target structure. This involved quantifying a participant's performance based on the number of moves of mediation received during a test (see *section 4.9.5*). Table 8 summarizes how the mediation was quantified.

Each score represents the explicitness of mediation requited to accurately write a target structure. If a participant receives a score of four, then they are considered to be able to self-regulate their performance of a target structure in the context of the test. The more explicit the other-regulation required to correctly produce a target structure, the lower the score a participant received. If on a subsequent test participants show a reduction in the explicitness of

Table 8

*Quantifying the moves of mediation*

| Number of moves of mediation required to write a target structure | Score |
|:---:|:---:|
| 0 | 4 |
| 1 | 3 |
| 2 | 2 |
| 3 | 1 |
| 4 | 0 |

mediation required to produce a target structure and thus receive a higher score, then linguistic development is considered to have taken place.  Even though the scores generated have a meaningful order, the intervals between the scores are not equally spaced on a linear scale.  In other words, the distance between each score cannot be quantified.  Thus, the test score data are ordinal in nature (Cohen et al., 2007, p.502) and the most appropriate measure of central tendency is the median.

*5.3 Descriptive statistics*

Table 9 provides the medians and ranges for the two target structures for each group over the duration of the study.

Descriptive differences exist between the results of the target structures.  Nearly all median scores for the simple past passive are higher than their equivalent score for the present continuous passive.  The groups did not begin the study with the equal levels of knowledge.  For the structure of the simple past passive, the control group has the highest median pretest score ($Mdn = 3$) when compared to the comparison ($Mdn = 2$) and experimental ($Mdn = 2$) groups.  This means that the scope for further simple past passive gains for the control group was more limited compared to the other two groups.

Table 9

*Medians and ranges*

| Group | Simple Past Passive | | | | | | Present Continuous Passive | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pretest | | Posttest | | Delayed Posttest | | Pretest | | Posttest | | Delayed Posttest | |
| | *Mdn* | *Range* | *Mdn* | *Range* | *Mdn* | *Range* | *Mdn* | *Range* | *Mdn* | *Range* | *Mdn* | *Range* |
| Control (*n* = 16) | 3 | 4 | 3 | 4 | 3 | 4 | 0 | 4 | 0 | 4 | 0 | 4 |
| Comparison (*n* = 16) | 2 | 4 | 3 | 4 | 3 | 4 | 0 | 3 | 0 | 4 | 1.5 | 3 |
| Study (*n* = 20) | 2 | 4 | 3 | 3 | 3 | 2 | 0 | 3 | 1.5 | 4 | 3 | 4 |

In order to better understand the effectiveness of the treatment tasks, the *median score differences* between consecutive tests were calculated for each participant by subtracting earlier scores from latter scores.  For example, if a participant scored one on a pretest and four on a posttest for the same target structure, then their score gain difference would be a pretest to posttest gain of +3.  Table 10 provides the median score differences and respective ranges for each group.

Table 10 shows how each group's performance of the target structures changed between consecutive tests.  Only the comparison and experimental groups were able to achieve median score gains.  The comparison group achieved a median score gain from the pretest to the posttest for the structure of the simple past passive and the experimental group achieved median score gains from the pretest to the posttest for both target structures.  All median score gains occurred between a pretest and a posttest (i.e., when the treatment tasks were administered).  The participants of the experimental group were responsible for the largest median score gains.  In contrast, the control group did not achieve any median score gains, and for all groups no median score gains were achieved from the posttest to the delayed posttest for both target structures.  This indicates that firstly, for both target structures more than half of the participants in the control group failed to register any performance improvement between each subsequent test; and secondly, for both target structures more than half of the participants in the comparison and experimental groups failed to register any performance improvement from the posttests to the delayed posttests.  However, for both target structures, no groups recorded median score declines between consecutive tests.  This shows that all groups either improved or maintained their level of performance between tests and suggests that any previous gains made were stable over the duration of the study at the group level.  Table 10 also indicates that the highest range was 7 and the lowest range was 3.  Since a participant could score a maximum of 4 points on any given test, a range of over 4 indicates that the scores of some participants decreased from one test to the next.  The high range scores suggest that the data contains a high level of individual variation.

Table 10

*Median score differences and respective ranges*

| Group | Simple Past Passive | | | | Present Continuous Passive | | | |
|---|---|---|---|---|---|---|---|---|
| | Pretest-Posttest | | Posttest-Delayed Posttest | | Pretest-Posttest | | Posttest-Delayed Posttest | |
| | *Mdn* | *Range* | *Mdn* | *Range* | *Mdn* | *Range* | *Mdn* | *Range* |
| Control (*n* = 16) | 0 | 7 | 0 | 6 | 0 | 3 | 0 | 4 |
| Comparison (*n* = 16) | 0.5 | 6 | 0 | 6 | 0 | 7 | 0 | 5 |
| Study (*n* = 20) | 2 | 6 | 0 | 3 | 0.5 | 4 | 0 | 5 |

*5.3.1 Histograms of median score differences*

In order to better understand the individual variation within the data, histograms are utilized. It is important to remember that the experimental group contained twenty participants and the control and comparison groups each contained sixteen participants.

Figure 6 shows the median score differences from the pretest to the posttest for the structure of the simple past passive.



*Figure 6.* Score differences from the pretest to the posttest for the structure of the simple past passive
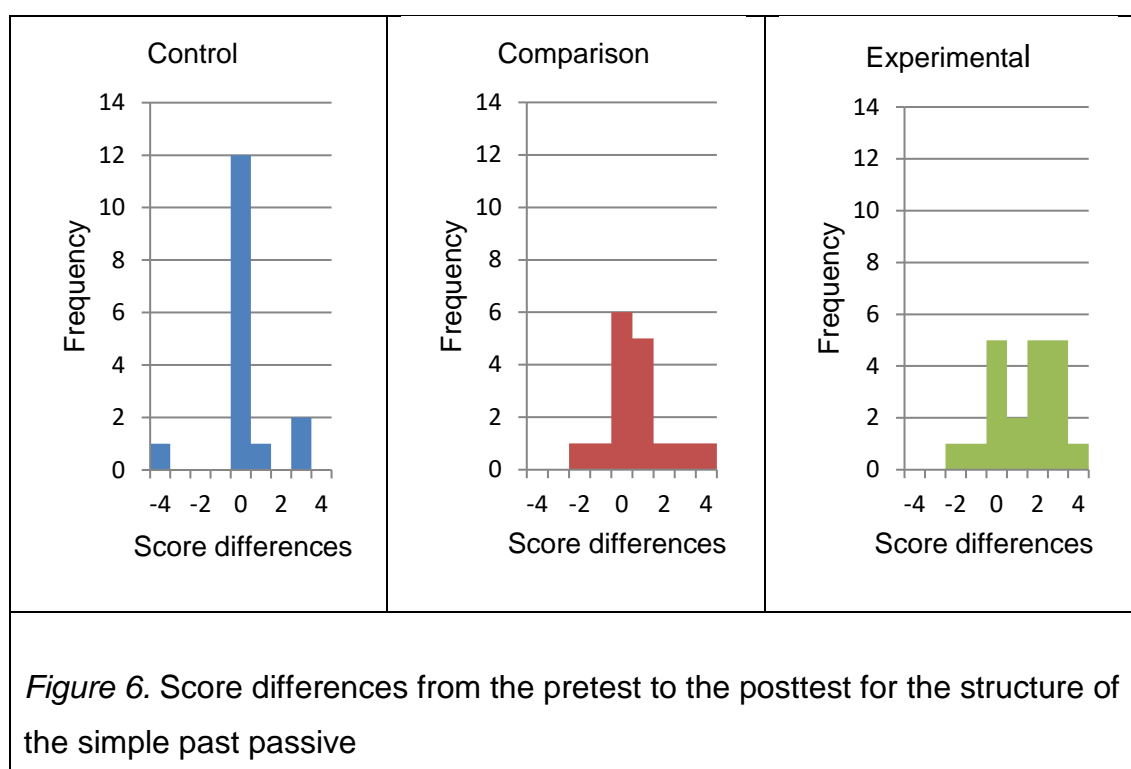
The control group contains the fewest number of participants who improved on their pretest performance (three), followed by the comparison group (eight), followed by the experimental group (13). The control group contains the highest number of participants whose performance remained unchanged (12), followed by the comparison group (six), followed by the experimental group (five). All groups contain participants whose scores decreased. In the control group, one participant decreased from a score of four on the pretest to a score of zero on the posttest; this outlier explains the range of seven in table 10. Overall, the scores of most participants in the control group remained unchanged; whilst the majority of the participants in the comparison group and the experimental group

were able to improve on their pretest performance. The distribution of score gains reveals how the median score differences for the comparison (*Mdn* = 0.5) and experimental (*Mdn* = 2) (see table 10) were derived.

Figure 7 shows the median score differences from the posttest to the delayed posttest for the structure of the simple past passive.
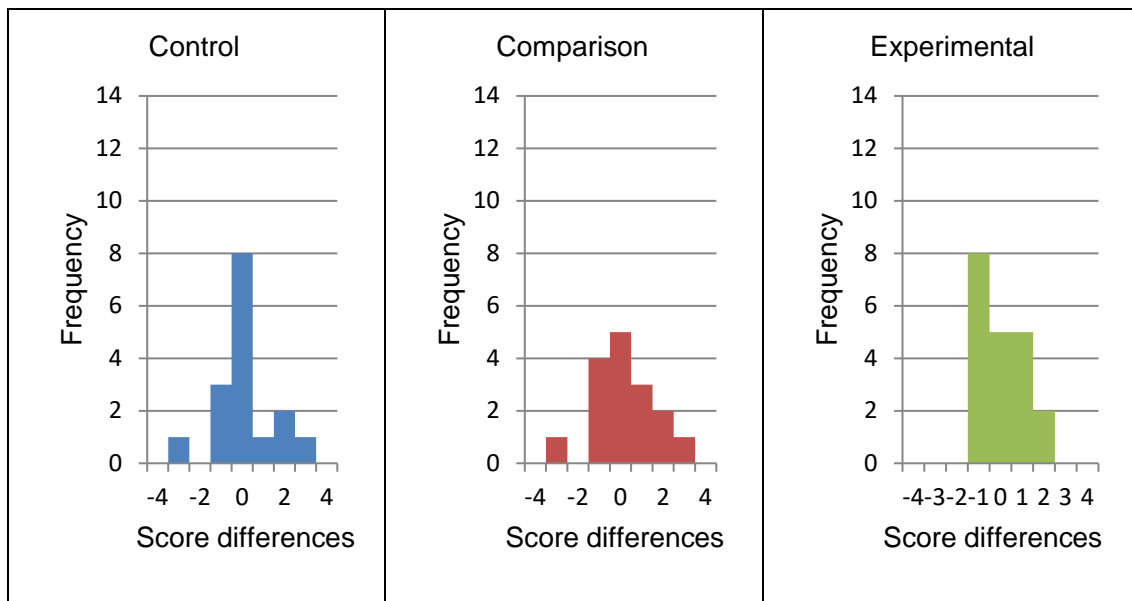


*Figure 7.* Score differences from the posttest to the delayed posttest for the structure of the simple past passive

The control group contains the fewest number of participants who improved on their posttest performance (four), followed by the comparison group (six), followed by the experimental group (seven). All groups contain participants whose performance remained unchanged, with the control group one again containing the highest number of these participants (eight). All groups contain participants whose performance decreased. The experimental group contains eight such participants, followed by the comparison group (five), followed by the control group (four). Overall, the performance of most participants in the control group remained unchanged; whilst although the comparison group and the experimental group contain participants whose performance improved; these groups also contain an almost equal number of participants whose performance declined from the posttest to the delayed posttest. All groups have a median score difference of zero (see table 10).

Figure 8 shows the median score differences from the pretest to the posttest for the structure of the present continuous passive.



*Figure 8.* Score differences from the pretest to the posttest for the structure of the present continuous passive
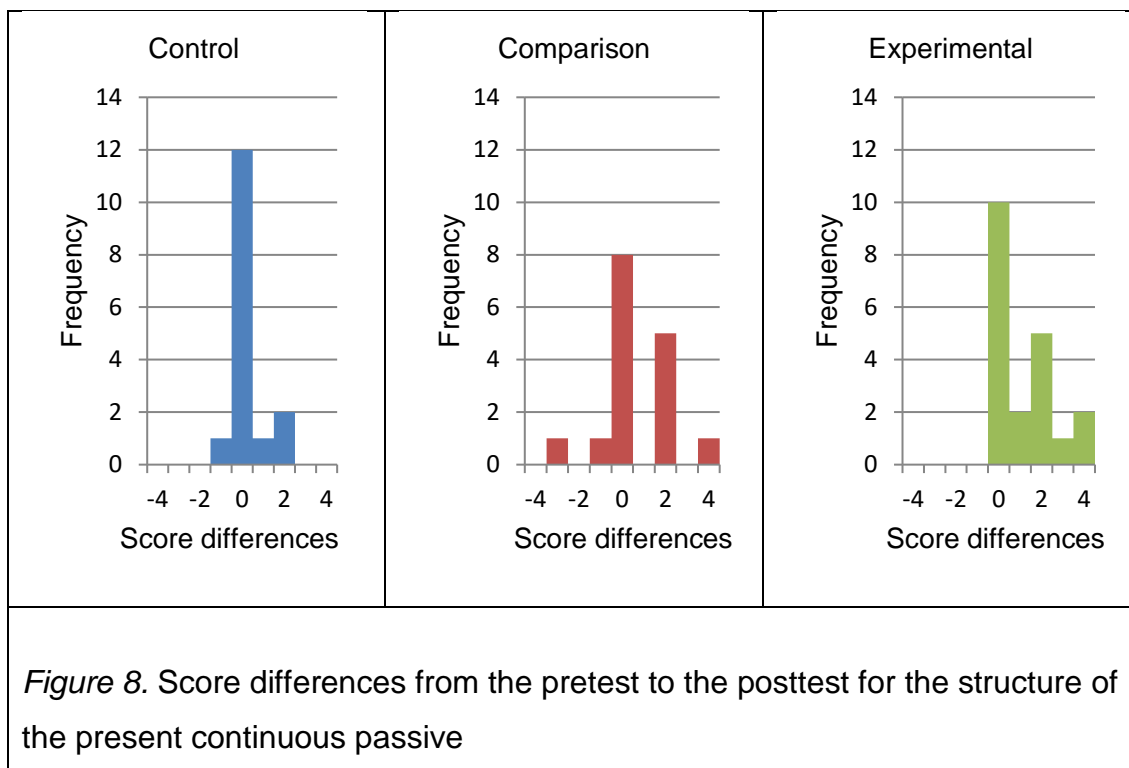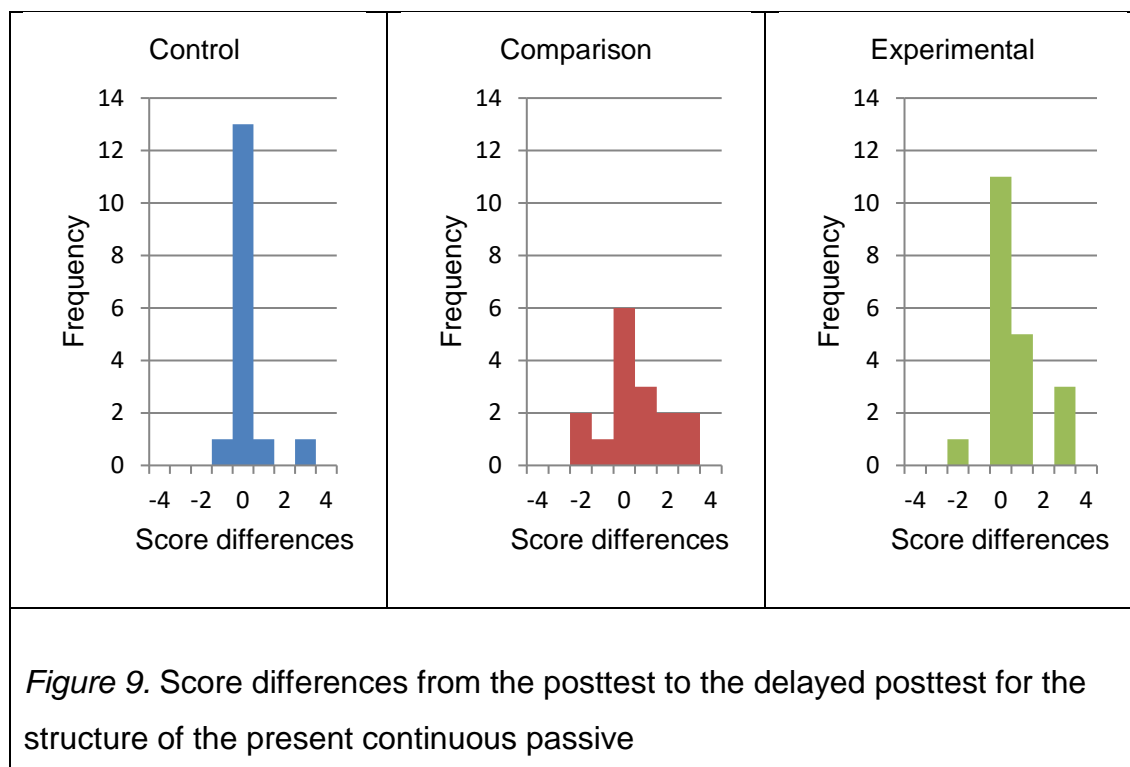
The control group contains the fewest number of participants who improved on their pretest performance (three), followed by the comparison group (six), followed by the experimental group (ten).  Of the ten participants in the experimental group who improved on their performance, two achieved the maximum gain of four points.  The control group contains the highest number of participants whose performance remained unchanged (twelve), followed by the experimental group (ten), followed by the comparison group (eight).  Both the control and the comparison group contain participants whose scores decreased with the comparison group containing an outlier whose score decreased by three points.  Overall, the scores of most participants in the control and comparison groups remained unchanged; whilst the experimental group has an equal amount of participants whose score either remained unchanged or increased.  The experimental group's even distribution of unchanged scores (ten) and positive scores (ten) results in a median score difference of 0.5 (see table 10).

Figure 9 shows the median score differences from the posttest to the delayed posttest for the structure of the present continuous passive.



*Figure 9.* Score differences from the posttest to the delayed posttest for the structure of the present continuous passive

The control group contains the fewest number of participants who improved on their posttest performance (two), followed by the comparison group (seven), followed by the experimental group (eight). All groups contain participants whose performance remained unchanged. The control group contains the highest number of these participants (thirteen), followed by the experimental group (eleven), followed by the comparison group (six). All groups contain participants whose performance decreased. However, the declines in performance are relatively small when compared to the posttest to delayed posttest declines for simple past passive. Overall, all groups contain a relatively large number of participants whose performance from the posttest to the delayed posttest remained unchanged or declined. This explains the lack of median score differences in table 10.

*5.3.2 Trends within the data*

Four trends are prominent within the data.

Between every consecutive set of tests for both target structures, a relatively large proportion of each group's participants were unable to improve on their previous test score. In total, there are 101 unchanged scores. Table 11 shows where these unchanged scores occurred.

Table 11

*Amount and location of unchanged scores*

| Group | Unchanged scores | | | |
|---|---|---|---|---|
| | Simple past passive | | Present continuous passive | |
| | Pretest - Posttest | Posttest – Delayed Posttest | Pretest - Posttest | Posttest – Delayed Posttest |
| Control (*n* = 16) | 12 | 8 | 12 | 13 |
| Comparison (*n* = 16) | 6 | 5 | 8 | 6 |
| Experimental (*n* = 20) | 5 | 5 | 10 | 11 |

Table 11 shows that the control group has the highest number of unchanged scores (45). Additionally, the participants in the comparison and experimental groups did receive the treatment and a relatively large proportion of participants in both groups were unable to improve on a previous test score.

There are thirty instances of a participant's score declining. Table 12 shows where these declines occurred. With the exception of the experimental group between the pretest and the posttest for the structure of the present continuous passive, each group contains at least one participant whose score declined between consecutive tests. This breaks down into: seven for the control group, eleven for the experimental group, and twelve for the comparison group. Across the groups, the majority of these performance declines occurred between the posttests and the delayed posttests (twenty-two); however, eight score declines also occurred between the pretests and the posttests.

Table 12

*Amount and location of score declines*

| Group | Score declines | | | |
|---|---|---|---|---|
| | Simple past passive | | Present continuous passive | |
| | Pretest - Posttest | Posttest – Delayed Posttest | Pretest - Posttest | Posttest – Delayed Posttest |
| Control (*n* = 16) | 1 | 4 | 1 | 1 |
| Comparison (*n* = 16) | 2 | 5 | 2 | 3 |
| Experimental (*n* = 20) | 2 | 8 | 0 | 1 |

To varying degrees, all median score difference data is positively skewed. Although all groups contain a relatively large proportion of participants whose performance remained static between consecutive tests, all groups also contain more participants whose performance improved than whose performance declined between consecutive tests.  The asymmetric distribution of the data is visually presented by the histograms in *section 5.3.1.*

Although much individual variation exists within the data, the greatest median score gains for both target structures were made by the experimental group between the pretest and the posttest.  In other words, for the participants in this study the largest proportion of the recorded performance gains for both target structures can be attributed to the experimental group and occurred after the treatment condition of collaborative learning was administered.  A key question here is are these gains statistically significant?

*5.4 Effectiveness of intervention*

In order to negate pretest differences, the effectiveness of the treatment tasks was determined through the application of inferential statistical tests on

participants' gain score data (i.e., median score differences; see table 10) rather than changes in absolute scores (see table 9).  Gain scores control for individual differences in pretest scores by measuring the posttest score relative to each participant's pretest score (Becker, 1999, para. 10; Rogers, Webb, & Nakata, 2015, p.18).  The median score differences between consecutive tests were calculated for each participant by subtracting earlier scores from latter scores (see *section 5.3*).  The inferential statistical tests were performed on these individual median score differences.


*5.4.1 Testing for normality*

The median score difference data were tested for normality using a Shapiro-Wilk test (see table 13).

The Shapiro–Wilk test revealed that seven of score difference data sets significantly deviate from normality; whilst, there is not robust evidence that five score gain data sets differ from normality.  Taking into consideration the results of the Shapiro–Wilk test, the ordinal nature of the data, the median as the most appropriate measure of central tendency, the positive skewedness of the data, and the small sample size, non-parametric tests will be employed in order to determine whether the participants' performance on the tests changed in a statistically significant way.


*5.4.2 Equality of variance*

In order to check that the variances of the data are homogenous, a Non-parametric Levene *F*-test was performed (see table 14).  The null hypothesis for the Non-parametric Levene *F*-test is that there is an equality of variance.  If the *p*-value is above 0.05, then it assumed that the distribution of data in the groups being compared has a similar shape.

Table 13

*Shapiro-Wilk test*

| Group | Shapiro-Wilk test | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Simple Past Passive | | | | | | Present Continuous Passive | | | | | |
| | Pretest-Posttest | | | Posttest-Delayed Posttest | | | Pretest-Posttest | | | Posttest-Delayed Posttest | | |
| | *W* | *df* | *p*-value | *W* | *df* | *p*-value | *W* | *df* | *p*-value | *W* | *df* | *p*-value |
| Control (*n* = 16) | 0.66 | 16 | 0.00* | 0.90 | 16 | 0.07 | 0.66 | 16 | 0.00* | 0.53 | 16 | 0.00* |
| Comparison (*n* = 16) | 0.92 | 16 | 0.16 | 0.95 | 16 | 0.51 | 0.88 | 16 | 0.04* | 0.93 | 16 | 0.24 |
| Experimental (*n* = 20) | 0.93 | 20 | 0.17 | 0.84 | 20 | 0.00* | 0.79 | 20 | 0.00* | 0.79 | 20 | 0.00* |

*$p \leq .05$.

Table 14

*Non-parametric Levene F-test*

| Consecutive tests | Non-parametric Levene *F*-test | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | Simple Past Passive | | | Present Continuous Passive | | |
| | *F* | *df* | *p*-value | *F* | *df* | *p*-value |
| Pretest-Posttest | 2.31 | 2 | 0.11 | 5.63 | 2 | 0.01* |
| Posttest-Delayed Posttest | 0.50 | 2 | 0.61 | 7.34 | 2 | 0.00* |

*$p \leq .05$

Table 14 indicates that the median score differences for the structure of the simple past passive have a statistically similar variance; whilst, the median score differences for the structure of the present continuous passive violate the homogeneity of variance. All sets of score gain data are treated as having heterogeneous variance. This results in the data analysis being more robust.

## 5.4.3 Effectiveness of treatment

Mood's median test (Mood, 1954) was employed in order to analyse the median score differences (how2stats, 2011). Mood's median test was selected because it can be used with three independent groups, can be used with ordinal data, and it does not make assumptions about distribution (i.e., whether the data is normally distributed and whether the variance of the data is approximately equal across samples). However, Mood's median test is more conservative in relation to comparable statistical tests (e.g., Kruskal-Wallis test). For each target structure, the score differences between two consecutive tests (i.e., dependent variable) were compared across treatment conditions (i.e., independent variable). The null hypothesis of the Mood's median test is that the scores of the data being compared are equal. If the *p*-value is below 0.05, then it assumed that the median scores of the groups being compared differ in a statistically significant way.

Table 15

*Mood's median test*

| Consecutive tests | Mood's median test | | | | | |
|---|---|---|---|---|---|---|
| | Simple Past Passive | | | Present Continuous Passive | | |
| | *M* | *df* | *p*-value | *M* | *df* | *p*-value |
| Pretest-Posttest | 7.79 | 2 | 0.02* | 3.75 | 2 | 0.15 |
| Posttest-Delayed Posttest | 0.05 | 2 | 0.72 | 4.34 | 2 | 0.11 |

*\*p ≤ .05*

Table 15 shows that for the structure of the present continuous passive, the results of the Mood's median test suggest that completing the treatment tasks, either individually or collaboratively, did not have a statistically significant effect on the performance of the participants.  However, a statistically significant effect was found between the pretest and posttest for the structure of the simple past passive (*M* = 7.79, *df* = 2, *p* = 0.02).  Additionally, the non-significance from the posttests to delayed posttests for both target structures confirms that learning was maintained.  The Mood's median test does not identify between which groups the statistically significant differences occurred. Thus, a post-hoc analysis is required.

*5.4.4 Post-hoc analysis and effect size*

In order to conduct a post-hoc analysis, the Mood's median test was thrice repeated on the results of the simple past passive from the pretest to posttest with a different group omitted from the analysis each time (see table 16).  Again, the same null hypothesis was tested.  In order to correct for making a Type-1 error, a Bonferroni adjustment was made by dividing the alpha level (0.05) by the number of between group comparisons (three).  This resulted in a post-hoc alpha level of 0.02.  If the *p*-value is below 0.02, then it assumed that the median score differences of the groups being compared differ in a statistically

significant way.  Additionally, in order to better understand the strength of any association, the effect size was calculated using Cramer's coefficient (Cramér's *V*).  An effect size of 0.3 indicates a medium effect and an effect size of 0.5 indicates a large effect (Cohen, 1988, p.222).

Table 16

*Post-hoc analysis for the simple past passive between the pretest and posttest*

| Groups Compared | *M* | *df* | *p*-value | Cramér's *V* |
|---|---|---|---|---|
| Control - Comparison | 3.46 | 1 | 0.06 | 0.33 |
| Comparison - Experimental | 0.82 | 1 | 0.36 | 0.15 |
| Experimental - Control | 7.70 | 1 | 0.01* | 0.46 |

*$p \leq .02$

The results of the post-hoc analysis suggest that there is a statistically significant difference between the performance of the experimental group and the performance of the control group for the structure of the simple past passive between the pretest and the posttest ($M = 7.70$, $df = 1$, $p = 0.01$).  Furthermore, the difference between these groups is approaching a large effect (Cramér's *V* = 0.46).  A moderate effect exists between the control and comparison groups (Cramér's *V* = 0.33); however, the *p*-value suggests that this effect is not statistically significant ($M = 3.46$, $df = 1$, $p = 0.06$).  Finally, no statistically significant difference was found between the experimental and comparison groups for the structure of the simple past passive between the pretest and the posttest ($M = 0.82$, $df = 1$, $p = 0.36$).

*5.4.5 Summary of statistics*

The descriptive statistics reveal that even though a high level of individual variation exists within the data, the greatest median score gains for both target structures were made by the experimental group between the pretest and the posttest.  In other words, for the participants in this study the largest proportion of the recorded performance gains for both target structures can be attributed to the experimental group and occurred after the treatment condition of

collaborative learning was administered.  However, only one statistically significant difference was found.  The statistical analysis shows a pretest to posttest statistically significant difference between the performances of the experimental group and the control group for the structure of the simple past passive which is moderate to large in size.  No other statistically significant differences were found.  No statistically significant differences were found for the target structure of the present continuous passive, and no statistically significant differences were found between the control group and the comparison group or between the experimental group and the comparison group.  The lack of a statistically significant difference between the experimental and comparison groups for both target structures indicates that the experimental group's median score performance gains over the comparison group (see table 10) are not at a statistically significant level.  In order to better understand how changes in the performance of a collective may relate to the subjective experiences of the individuals who constitute that collective, a microgenetic analysis of the interaction between the participants in the experimental group who were audio-recorded is required.

*5.5 Data analysis – The treatment tasks*

> *How does working collaboratively enable undergraduate learners in a Qatari context to move towards being able to self-regulate a complex grammatical structure?*

This research question seeks to gain a deeper understanding into *how* completing the treatment tasks collaboratively may facilitate longer-term movements towards self-regulation of the target structures.  A microgenetic analysis was applied to the data collected from the participants of the experimental group who were audio-recorded as they completed the treatment tasks.  Firstly, how the audio-recordings were transcribed is explained.  Next, the concept of microgenesis is operationalized.  Then, how the transcripts were coded is explained.  Finally, one participant's journey towards self-regulating the structure of the present continuous passive is subjected to a microgenetic analysis.

*5.5.1 Transcribing the audio-recordings*

All audio-recordings were transcribed.  Four participants from the experimental group agreed to be audio-recorded for all treatment sessions.  These became the 'core' participants for the qualitative data collection.  Each of these participants was free to decide with whom they completed each of the six treatment tasks.  Sometimes the core participants completed a treatment task with each other; sometimes they recruited other members of the experimental group.  All audio-recorded participants signed consent form two (appendix Y).  Table 17 shows the audio recordings obtained for each participant.  The data consisted of 15 audio-recordings with a combined time of 2 hours, 16 minutes, and 54 seconds.

Table 17

*Obtained audio-recordings*

| Participant number | Treatment task | | | | | |
|---|---|---|---|---|---|---|
| | Guided learning | | Text-editing | | Dictogloss | |
| | Simple past | Present continuous | Simple past | Present continuous | Simple past | Present continuous |
| 2 | | x | x | | | |
| 11* | x | x | x | x | x | x |
| 12* | x | x | x | x | x | x |
| 16* | x | x | x | x | x | x |
| 17* | x | x | x | x | x | x |
| 19 | x | | x | | x | x |
| 22 | | | | | x | x |

*core participants

All audio recordings were professionally translated and transcribed by a company based in Cairo.  Sending the audio-recordings to a professional translator is stated within my Exeter ethics certificate (see appendix W).  Apart from a participant's voice, the audio-recordings did not contain any data pertaining to a participant's identity.  The transcription conventions are given in

appendix AA.  In order to ensure that the transcripts are a true representation of the speech stream, the translation company was only provided with the audio files; they were not given copies of the participants' written work.  Thus, if a translator was unable to decipher a word from the speech stream, then they were unable to infer meaning from additional documentation.  This contributed to some parts of the audio-recording not being transcribed; the word 'inaudible' appears in the transcripts 73 times.  Additionally due to the financial costs involved, the transcribed documents excluded suprasegmentals (e.g., intonation, stress and rhythm) and temporal features of the data (e.g., pauses, restarts, and speaker overlap).  However, the omission of these features still allowed for a microgenetic analysis of the data.  I checked each of the transcripts against its corresponding speech stream in the audio files.  The transcription company then received feedback and made the requested corrections.  The Arabic to English translation within two of the transcripts was checked by two bilingual adults who were familiar with both Qatari and Egyptian dialects of Arabic.  The selected transcripts did not contain any data pertaining to a participant's identity.  No discrepancies were found that related to meaning of the Arabic to English translations.  However, an Egyptian accent was present in some Arabic words which are written using an English script.

*5.5.2 Initial coding*

For the four audio-recorded participants, all LREs within each transcript were identified.  If during the completion of a treatment task participants returned to an LRE, then a new LRE was created.  For the text-editing and dictogloss tasks, the participants were given the original texts to compare their answers to.  This resulted in some participants re-discussing previously discussed sections of a text.  Counting revisited LREs as separate episodes simplified the coding process.

To check the reliability of the LRE identification process, two transcripts were re-coded.  The re-coder held the position of lecturer of English at the institution where this study took place.  The selected transcripts did not contain any data pertaining to a participant's identity.  Within the two transcripts, I had initially

identified 18 LREs; however, the second coder identified 15 LREs. This resulted in an inter-rater reliability of 83%. Points of contention related to sections of transcript which contained several LREs. Figure 10 provides an example.

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07:29 Participant 12: **Hathy** "by the rhino" **wala** "by rhino" **'ala toul**? {Is it always "by the rhino" or simply "by rhino"?}

07:32 Participant 11: By the rhino, **sah** {Correct}. The grass is chewed by… three mistakes. Oh, okay. [inaudible] **ha nsawi** {we will do it like this} is, the grass is being chewed by the rhinos. Maha watch, Maha is being watched, Maha is being watched by the [inaudible]. Maha is being observing **aw** {or} Maha observed… **Akid ma feeh…**{surely there's not} [inaudible]

08:35 Participant 12: **Khalast?** {You're done?} **Ba'ed?** {There is more?}

*Figure 10.* A section of transcript

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This section of speech is deemed to contain four LREs. Table 18 breaks this section of transcript into its LREs and provides their corresponding sentence within the test-editing activity.

Within the 15 transcripts, a total of 94 LREs were identified which pertained to the target structures. Table 19 shows the number and distribution of LREs for each participant. Table 19 reveals that each of the core participants were involved in a similar number of LREs. Additionally for all participants, the guided learning tasks contributed the most LREs to their total.

Table 18

*LREs and their corresponding sentences within a text-editing activity*

| LRE | Corresponding sentence within text-editing activity | Explanation |
|---|---|---|
| 07:29 Participant 12: **Hathy** "by the rhino" **wala** "by rhino" **'ala toul**? {Is it always "by the rhino" or simply "by rhino"?} <br> 07:32 Participant 11: By the rhino, **sah** {Correct} | The grass is chewed by the rhinos. | Discussing the use of 'by' |
| 07:33 Participant 11: The grass is chewed by… three mistakes. Oh, okay. [inaudible] **ha nsawi** {we will do it like this} is, the grass is being chewed by the rhinos. | The grass is chewed by the rhinos. | Attempting to correct a mistake within a passive voice sentence |
| 08:04 Participant 11: Maha watch, Maha is being watched, Maha is being watched by the [inaudible]. | Maha watch by one rhino as it slowly chews the grass. | Attempting to correct a mistake within a passive voice sentence |
| 08:21 Participant 11: Maha is being observing **aw** {or} Maha observed… **Akid ma feeh…**{surely there's not} [inaudible] <br> 08:35 Participant 12: **Khalast?** {You're done?} **Ba'ed?** {There is more?} | Maha observing a zoo keeper feed two rhinos. | Attempting to correct a mistake within an active voice sentence by applying the concept of the passive voice |

Table 19

*Number and distribution of LREs for each participant*

| Participant | Simple Past Passive | | | Present Continuous Passive | | | Total |
|---|---|---|---|---|---|---|---|
| | Guided learning | Text-editing | Dictogloss | Guided learning | Text-editing | Dictogloss | |
| 11 | 9 | 3 | 6 | 12 | 8 | 4 | 42 |
| 12 | 9 | 3 | 5 | 9 | 8 | 6 | 40 |
| 16 | 8 | 6 | 6 | 12 | 4 | 5 | 41 |
| 17 | 8 | 6 | 6 | 12 | 4 | 5 | 41 |

*5.5.3 Second-level coding*

The 94 LREs were coded using NVivo version 10.  Within NVivo, an adult node was created for each audio-recorded participant.  Child nodes were then created for each target structure (see Table 20).

Table 20

*The nodes created within NVivo for each participant*

| Adult node | Child node |
|---|---|
| Participant 11 | •simple past |
| | •present continuous |
| Participant 12 | •simple past |
| | •present continuous |
| Participant 16 | •simple past |
| | •present continuous |
| Participant 17 | •simple past |
| | •present continuous |

For each audio-recorded participant, their LREs were coded chronologically and according to target structure.  If a participant was present when an LRE took place but did not contribute to the LRE, then the LRE is considered to be part of that participant's data set.  Dobao (2014a, p.515) has shown that even if a participant does not speak, they still have access to their group's shared cognitive space and thus, they can still potentially benefit from any joint problem solving and knowledge building which takes place.  Finally, a reflective commentary was embedded into the data (see figure 11).

Within the commentary, attention was paid to knowledge building and problem solving, movements from other-regulation towards self-regulation, changes in conceptual understanding, the externalization of cognitive processes, and the use of language as a cognitive tool.  The organization and analysis of the qualitative data helped to reveal how each participant's ability to self-regulate each target structure developed over the course of the treatment sessions.

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*Figure 11.* Example of research commentary
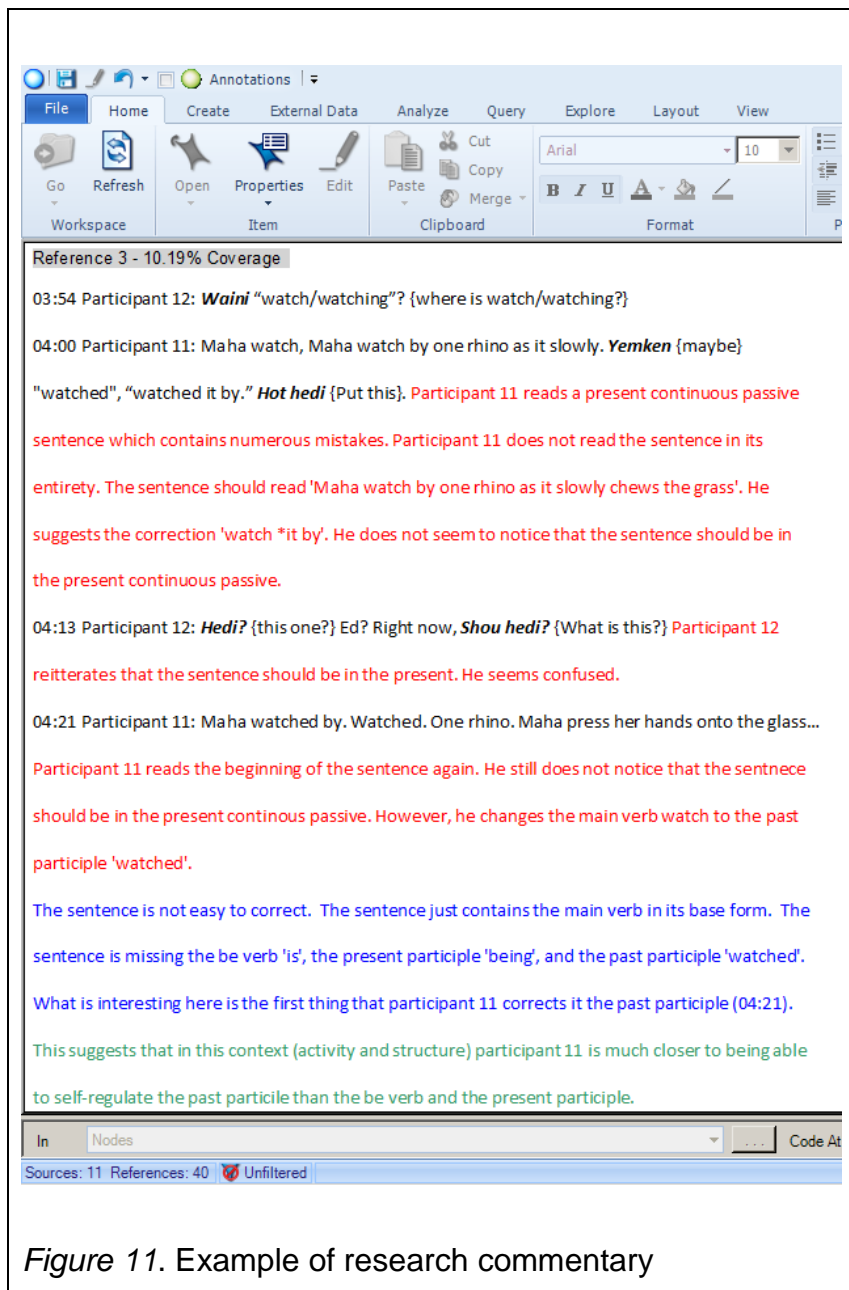
*5.6 The microgenetic analysis*

In the section which follows, one learner's journeys towards being able to self-regulate the structure of the present continuous passive is presented. Data from both tests and treatment tasks is included. This learner's journey was selected because it is sufficiently rich and illustrates how the genesis of language learning can occur within peer mediation.

In order to better understand how participant 11 moved towards being able to self-regulate the present continuous passive structure, his performance on the

tests pertaining to the structure of present continuous passive is broken down into the following parts of speech:

- be verb (is)
- present participle (being)
- past participle
- prepositional phrase

During testing, it was possible for participant 11 to receive a specific move of mediation pertaining to each of these parts of the target structure. Table 21 provides an overview of participant 11's performance on the tests for the structure of the present continuous passive.

Table 21

*Overview of participant 11's test performance*

| Test | Performance of parts of speech | | Score |
|------|------|------|------|
|  | Self-regulation | Other-regulation | |
| Pretest | •past participle | •prepositional phrase | 0 |
|  |  | •be verb | |
|  |  | •present participle | |
| Posttest | •be verb | | 4 |
|  | •present participle | | |
|  | •past participle | | |
|  | •prepositional phrase | | |
| Delayed Posttest | •be verb | | 4 |
|  | •present participle | | |
|  | •past participle | | |
|  | •prepositional phrase | | |

In the pretest, participant 11 was only able to independently produce the past participle. However with the aid of the moves of mediation, he was able to produce the other parts of speech. In the posttest and delayed posttest, participant 11 was able to accurately write the target sentence. Thus, from the

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pretest to the posttest he achieved the maximum score gain; furthermore, he was able to maintain his performance on the delayed posttest.

*5.6.1 Pretest*

Figure 12 provides participant 11's pretest for the structure of the present continuous passive.  In the pretest, participant 11 was not able to write the complete structure of the present continuous passive; he scored 0 points.  Initially, participant 11 wrote the sentence in the passive voice using the present perfect tense.  Although he omitted the agent, the sentence is grammatically correct.  After being told that his answer contains mistakes, participant 11 wrote the target sentence in the simple present passive.  He was then told the location of his only mistake.  Participant 11's third attempt at writing the target sentence is incomplete because the time allocated to him (30 seconds) expired.  Based upon his earlier attempts, participant 11 then received feedback which was more explicit.  He was told that 'The sentence needs to be in the present continuous tense' and the need for the present participle being was conveyed through a chevron in the appropriate place in his second attempt.  This action was accompanied by the utterance 'An -ing be verb is missing here'.  Participant 11 then wrote 'A table is being'.  Once again, the sentence is incomplete because the time allocated to him expired.  Participant 11 was then told the correct answer.  Although participant 11 did not write the target sentence correctly within the allotted time, he was able to produce each part of speech from which target structure is constituted.  The consecutive improvements in participant 11's accuracy suggest that he was receptive to the mediation provided and an intersubjective space was established with the researcher.  Thus, writing this target structure lay within his ZPD from the outset of this study.
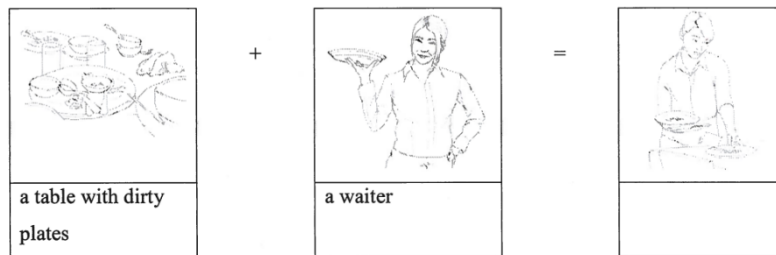
Right now, a waiter is working in a restaurant. It is the waiter's job to take the dirty plates and glasses to the kitchen. One family has just finished eating. The waiter is taking the dirty plates away from their table. The table _____ (clear/waiter). The waiter is working very hard.

1. The table has been cleared
2. The table is cleared by the w
3. The table
4. The table is being

*Figure 12.* Participant 11's present continuous passive pretest

*5.6.2 Treatment sessions*

Participant 11's transcripts for the present continuous passive treatment sessions can be found in appendix BB. Completing the treatment sessions resulted in participant 11 being involved in 24 present continuous passive LREs. These LREs are categorized into: resolved correctly, not resolved solved correctly, and comparison of answers with original text accompanied by a discussion or comment (see table 22).

Ten of participant 11's LREs are analysed below. These ten LREs were selected because together they provide a narrative of progression towards being able to self-regulate the present continuous passive structure.

Table 22

*Participant 11's present continuous passive LREs*

| LRE Outcome | Number of LREs |
|---|---|
| Resolved correctly | 10 |
| Not resolved correctly | 11 |
| Comparison of answers with original text accompanied by a discussion or comment | 3 |

The LREs presented in the findings section have been modified. The transcription of the audio files was carried out by a company in Cairo. Although the English translation is correct, an Egyptian accent was present in some Arabic words which are written using English script. In order to add authenticity to the LREs, where possible the Egyptian accent has been replaced by a Qatari accent. This was done by the same two bilingual adults who initially checked the translation of two of the transcripts. Figure 13 provides an example.

03:11 Participant 16: ***Taken mady sah?*** {"Taken" is past right}? ***El emtehan okhez*** {the exam was taken}

became

03:11 Participant 16: ***Taken mady sah***? {"Taken" is past right}? ***El emtehan okheth*** {the exam was taken}

*Figure 13.* A modified LRE

The data presented has not been modified in any other way. Similar to Guerrero and Villamil (2000, p.56), when initially writing up the findings some of the LREs presented underwent deletions of nonessential parts. This was done in order to improve the readability and clarity of the data presented. However upon reflection, this act does not align with the microgenetic approach; the process of learning is naturally untidy. What may be considered nonessential by me could be considered essential by a discerning reader.

*5.6.3 LRE 1*

In week three of the study, participant 11 completed the guided learning task for the structure of the present continuous passive.  Appendix CC provides his group's written work.  He completed this task with participants 16 and 17.  In his pretest, participant 16 was unable to write any part of the target sentence; he scored zero points.  Participant 17 also scored zero points on the pretest; however, with the aid of other-regulation he was able to correctly write the present participle and the past participle.  Within the guided learning task, the participants were given two example sentences.

> Sentence 1: The student is taking the exam.
> Sentence 2: The exam is being taken by the student.

Part one, question two asked the learners to identify whether the example sentences are in the past, present, or future and to explain their answer.  The following LRE provides the interaction between the participants.

> 01:31 Participant 11: Sentence one, in past/present/future. How do you know? *El jomla el ola* {sentence one} the student is taking the exam. *Hal heya fel mady walla el hader walla el mostaqbal* {is it in the past or the present or the future}?  *Men nahyety ana* {from my side}
>
> 01:46 Participant 17: *La hader tab'an* {no, it's of course present}
>
> 01:47 Participant 11: *Lesh*? {why}?
>
> 01:48 Participant 17: Taking.
>
> 01:49 Participant 11: *Beldabt ketha* {exactly}
>
> 01:51 Participant 11: *Went sht tegool*? {and you, what do you say?}
>
> 01:52 Participant 16: Past? *Walla* {or} *mo* {not} past
>
> 01:55 Participant 17: Taking. Taking
>
> 01:56 Participant 16: Present. Huh?
>
> 02:00 Participant 11: *Helw* {nice}. *El jomla el thaneya* {sentence two} the exam is being taken by the student.
>
> 02:07 Participant 16: Being *walla* {or}?

02:12 Participant 17: Present huh?

Participant 11 initiates this LRE by reading part of the question; he then uses his L1 to ask the other participants whether example sentence one is in the past, present, or future. Participant 17 supplies the correct answer of 'present' in Arabic '**La hader tab'an** {no, it's of course present}' (01:46). Participant 11 asks him to justify his answer. Participant 17 justifies his answer by uttering the present participle 'taking' (01:48). Participant 11 agrees with participant 17. However, their agreed upon answer is incorrect. The time of example sentence one is not conveyed through the word 'taking'; it is conveyed through the presence of the be verb 'is'. Participant 11 then asks participant 16 for his opinion (01:51). Participant 16 suggests that example sentence one is in the past; however, he is unsure of his suggestion. Participant 17 repeats the justification 'taking' for their previously agreed upon answer of present (01:55). Participant 16 then agrees that example sentence one is in the present. Participant 11 focuses the group's attention on example sentence two (02:00). Participant 16 focuses the group's attention on the word 'being' (02:07). Participant 17 suggests the answer of 'present'; however, seems unsure (02:12). Although the group correctly identify that both example sentences are in the present, the justifications for their answers, the present participles 'taking' and 'being', are incorrect.

Participant 11 has an emerging conceptual understanding of how time is conveyed within the structure of the present continuous passive. The task foregrounds the concept of time in relation to the example sentences. A shared interpsychological cognitive space is immediately established in which the views of participant 11 and participant 17 quickly align. Participants 11 and 17 agree that the time of example sentence one is the present due to the word 'taking' (01:48 and 01:49). When discussing example sentence two, participant 16 immediately draws the group's attention to the word 'being' (02:07). Participant 17 then suggests that the time of example sentence two is in the 'present' (02:12). The group write 'being' as their answer. However, the reasoning behind their answer is incorrect. Participant 11 seems to be confusing time with aspect. Participant 11 does not seem to understand the temporal meanings behind the be verb 'is' and the present participle 'being' when used within a

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passive sentence.  In example sentence two, the progressive aspect is conveyed by the word 'being' and its general location in time is conveyed by the word 'is'.  As the other group members either shared participant 11's understanding or possessed a very emergent understanding, participant 11's misunderstanding was not challenged.  Thus, although the group were able to establish intersubjectivity, participant 11 did not receive mediation from the other members of his group.  Participant 11 exited this LRE with incorrect conceptual understandings of the meanings conveyed by the be verb and the present participle within the structure of the present continuous passive.

*5.6.4 LREs 2 and 3*

The second and third LREs are also taken from the guided learning task. Within the guided learning task, the participants were given two example sentences.

> Sentence 1: The student is taking the exam.
> Sentence 2: The exam is being taken by the student.

Part one, question 3c asked the participants to identify how the example sentences differ in terms of words.  In LRE 2, the participants discuss the time of the past participle 'taken'; in LRE 3, the participants answer question 3c. Although according to this study's operationalization of an LRE these two LREs are regarded as separate, analysing them together provides a better understanding of how the participants' attention shifted from discussing the conceptual properties of the words within a target structure to answering the task's questions.

LRE 2

> 03:05 Participant 11: ***Dageega. Halheen ali gal taken***. ***Hey shoof*** {One minute. Just now Ali said "taken." Here, see}.
> 03:11 Participant 16: ***Taken mady sah***? {"Taken" is past right}? ***El emtehan okheth*** {the exam was taken}

03:13 Participant 11: Take. Taken. Taken **el tasreef el thaleth**. **Taken el tasreef el thaleth** {Taken is the third conjugation, taken is the third conjugation}.

03:18 Participant 17: **Eh. Zen. She el moshkela**. {Yes. Right. What is the problem?}

03:21 Participant 11: **Ya'ny mady sah?** {right, it's past, right?}

03:23 Participant 17: **Enty gasdek hathey ya'ny**? {Do you mean this?} '**ala hathy el gomla el thaneya**? {for sentence two} Future **ya'ny teby** {it's a future you mean?}

03:26 Participant 11: **La. La**. **Momken yekoon past**. {No, no. It could be past}… **kaleh kaleh kaleh**. {wait.wait.wait} …

LRE 3

… which word are different? **Wesh el kalemat el mokhtalefa** {which words are different?} **wesh el kalemat elly mokhtalefa** {which words are different}?

03:40 Participant 16: '**Andek elly how** {you have} by

03:42 Participant 11: **Esh feha**? {what about it?}

03:43 Participant 16: Hey **mawgooda sah**? {Here it is, right?} Taken, taking.

03:50 Participant 17: **Atwaka' hathol bas**? **Sah**? {I think that's it} **Hathy**? **She esmaha**? {This one? What its name?} Being.

03:56 Participant 11: **Eywa** {yes}

03:57 Participant 16: **Sah** {right}

03:57 Participant 17: **Wa** {and} by.

03:58 Participant 16: **Wa** {and} taking **we** {and} taken.

04:00 Participant 11: Taking **wa** {and}

04:01 Participant 17: Taken **nafs** {same} el sentence.

04:02 Participant 11: **Yegoolo esh el kalemat** {which are the words}

04:04 Participant 16: **Elly etghayaret?** {that changed?}

04:06 Participant 11: **elly mekhtalefa** {that are different}

04:07 Participant 17: **Aktob**, {I will write} being, taken, by. **Sah** ? {right?}

04:11 Participant 11: **A'taked** {to make sure} take

04:13 Participant 16: **Ektebha kolaha** {write all of it}. **Eh** {yes} take.

Participant 11 begins LRE 2 by referring back to an earlier part of the group's dialogue.  Participant 16 then uses his L1 to question whether 'taken' represents the past.  Participant 11 answers participant 16's question by conjugating the base form, the past form, and the past participle of the verb take (03:13).  He then uses his L1 to explain that 'taken' is the third conjugation.  Participant 17 agrees with this explanation (03:18).  Participant 11 then suggests that 'taken' is in the past but seems unsure (03:21).  Participant 17 then brings the time of the future into their conversation (03:23).  His utterance '***ala hathy el gomla el thaneya***? {for sentence two}' indicates that he is referring to example sentence two.  Participant 11 again expresses his opinion that the word taken signifies the past; he then utters the phrase '***kaleh kaleh kaleh*** {wait.wait.wait}' (03:26).  Participant 11 then initiates LRE 3 by reading question 3c 'which word are different?' and twice more repeats it in Arabic '***wesh el kalemat elly mokhtalefa*** {which words are different}?' (03:26).  Participant 16 answers him.  Participant 16 supplies one of the words which differ between the sentences 'by' (03:40).  Participant 11 seems confused.  He queries participant 16 as to why he has supplied this word, stating '***Esh feha***? {what about it?}' (03:42).  This suggests that his earlier thrice repeated question of '***wesh el kalemat elly mokhtalefa*** {which words are different}?' (03:26) was self-directed.  For the reminder of LRE 3, participants 16 and 17 identify and supply the words which are different between example sentence one and example sentence two.  Participant 16 supplies 'taken', and 'taking'; participant 17 supplies 'being', 'by', and 'taken'.  Participant 17 writes the correct answer of 'taking and being taken by'.

In LREs 2 and 3, participant 11 questioned his understanding of the time conveyed by a past participle.  In LRE 2, participant 16 poses a question to participant 11; participant 16 asks whether 'taken' represents the past (03:11).  Initially, participant 11 answers this question by conjugating three forms of the verb 'take': take, took, and taken, and then uses metalanguage from his L1 to explain that 'taken' is the third conjugation '***Taken el tasreef el thaleth***' (03:13).  This use of metalinguistic terminology reveals the presence of previously learned linguistic knowledge.  It is the conscious application of the scientific concept of verb form to the task at hand.  Participant 11 then verbalizes his

temporal understanding by stating '***Ya'ny mady sah?*** {right, it's past, right?}' (03:21). This suggests that at this point in LRE 2 participant 11 has an incorrect understanding of the temporal meaning conveyed by the past participle within the structure of the present continuous passive. Participant 17 then brings the time of the future into their conversation (03:23). Participant 11 responds by uttering the words '***La. La***. ***Momken yekoon past***. {No, no. It could be past}', reiterating his initial position that the past participle 'taken', as used in example sentence two, conveys the time of the past. His utterance contains modality of possibility, indicating his uncertainty. DiCamilla and Lantolf (1994, p.364) identify that the use of modal verbs can indicate that a learner is hypothesizing to oneself about a task. A few seconds later, participant 11 seems to notice a problem with his current understanding. The words '***kaleh kaleh kaleh*** {wait.wait.wait}' suggest self-evaluation and a reconsideration of his assumption that 'taken' conveys the time of the past (03:26). Participant 11 then voluntarily controls his attention by thrice repeating the instructions of question 3c. In doing so, he initiates LRE 3.

He reads in English 'which word are different?' and twice repeats in Arabic '***wesh el kalemat elly mokhtalefa*** {which words are different}?' (03:26). Knouzi et al. (2010) argue that "rereading denotes a deep level of re-processing based on the student's realization that the concept being introduced or part of it is not clear" (p.31). This utterance may appear to be dialogic; however, if we think in terms of "addressivity" (Smith, 2007, p.341), then on closer inspection it appears to be an example of private speech. In the case of a particularly demanding cognitive task, inner speech can sometimes emerge as private speech which helps an individual to direct and organize their cognitive activities (Knouzi, et al., 2010, p.25). By repeating the question, he is directing his attention to specific information and holding it (DiCamilla & Anton, 1997, p.617; Gánem-Gutiérrez & Harun, 2011, p.112; Smith, 2007, p.352) in order to help focus his attention. Participant 11 seems to be rereading this question in an attempt to better understand the relationship between the past participle 'taken' and the time it conveys when used in example sentence two. This instance of private speech may have been triggered by the problem of reconciling his existing linguistic knowledge with the realization that his current understanding of past participles may not be accurate. The repetition of the task's instructions

is in response to a self-set agenda which is embedded within a broader collaborative activity.  Participant 11 does not expect the other group members to answer; in fact, he expresses confusion when participant 16 provides him with an answer, '***Esh feha***? {what about it?}' (03:42).  However, participant 11's questions were considered by participants 16 and 17 to be a direct request to answer question 3c.  In the reminder of LRE 3, participants 16 and 17 continue to answer question 3c, rather than resolving the prior linguistic problem in LRE 2.  Participant 11 does not return to his self-directed question, at least not on the interpsychological plane.  It appears that participant 11's attempt at using language on the intermental plane to intentionally organize and control his psychological functioning was curtailed by the other members of his group.

Working collaboratively can stifle the use of private speech.  Participant 11 attempted to self-regulate his mental processes on the intermental plane.  Participant 11 read the instructions of question 3c in English 'which word are different?' and translated them into Arabic '***wesh el kalemat elly mokhtalefa*** {which words are different}?'.  This utterance could be interpreted as an example of private speech.  Participant 11 thrice repeated the question in an attempt to hold his thinking in place whilst he focused his attention on better understanding the relationship between the past participle 'taken', as used in example sentence two, and its relationship to the time of the past.  His repetitions "functioned as a focus frame to examine what was already there" (Smith, 2007, p.354).  However, "intramental activity in social contexts can have intermental consequences" (Smith, 2007, p.349).  In LRE 3, participant 11's possible use of private speech was identical in structure to and interwoven with communicative speech; thus, it was perceived as a "call for joint problem solving and support" (Smith, 2007, p.353) by participants 16 and 17.  Consequently, participant 11 elicited an unintended response from participants 16 and 17; they answered his question.  This had the effect of focusing the collective mind of the group.  For the reminder of the LRE, participant 11 did not continue the process of attempting to intentionally organize and control his psychological functioning, at least not on the interpsychological plane.  The key point here is that because "action is always both social and psychological" (Wells, 1999b, p.250) verbalizing his thoughts within a shared cognitive space

curtailed participant 11's attempt at developing his understanding of the target structure.


*5.6.5 LRE 4*

LRE 4 is also taken from the guided learning task.  Part two, question 2a of the guided learning activity asked the participants to convert the following active sentence into a passive sentence.

> Active: The scientist is researching the idea.
> Passive: The idea _____

The following LRE provides the language produced by participants 11, 16, and 17 as they completed this sentence conversion task.

> 14:15 Participant 11: *Helw* {nice} please change the following sentences to the passive voice.
> 14:17 Participant 17: *El 'aks* {the opposite}
> 14:20 Participant 16: *lesh 'aks?* {why opposite}?
> 14:21 Participant 11: *Huh?* The girl is playing
> 14:23 Participant 17: *Nohot el* {put the being} being
> 14:26 Participant 11: The idea
> 14:27 Participant 17: Is. Past *tab'an* {of course}
> 14:31 Participant 11: Being.
> 14:33 Participant 17:  Being *nohot* {we put} past
> 14:34 Participant 11: *La, mo* {no not} past
> 14:36 Participant 17: *Elly heya* {which is} *ing*. Past.
> 14:38 Participant 11: We she researched? *El tasreef el thaleth hag researched, wesh tha?* {The third conjugation of researched is what?}
> 14:44 Participant 16:  *Past haga bas* {past only}.
> 14:46 Participant 11: Research. *El tasreef el talet haga wesh*? {What is its third conjugation?}
> 14:56 Participant 16: Researching?
> 14:59 Participant 17: Researched?
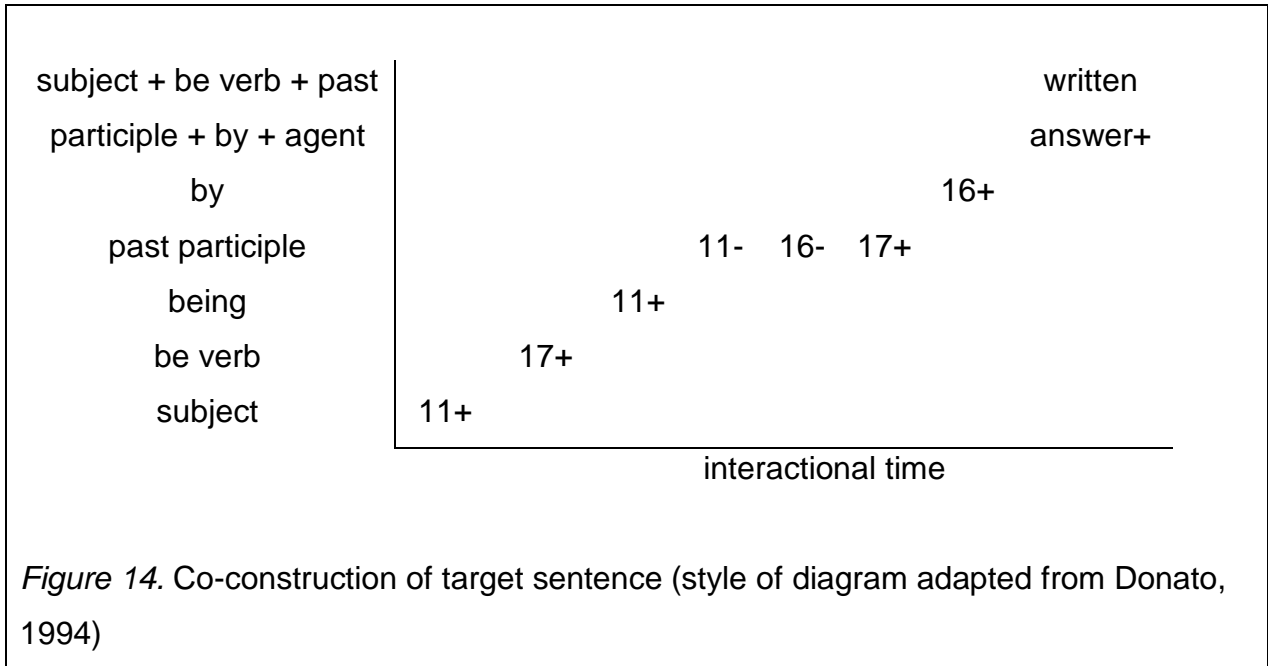
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15:09 Participant 16: By *hatetah* {I put it}

15:11 Participant 11: Ok *wala yehemak* {no problem}


Participant 11 begins this LRE by reading the instructions for question 2a. Participant 17 then provides untargeted other-regulation by informing the group that changing the active sentences to the passive voice involves converting the sentences to the opposite (14:17). Participant 16 seems confused and asks why. Participant 11's utterance of 'The girl is playing' (14:21) refers to the example sentence for part two, question two. Participant 17 suggests that the group use the word 'being' (14:23). Three seconds later, participant 11 begins the process of constructing their answer by reading 'The idea' (14:26). Participant 17 then suggests the be verb 'is', followed by the suggestion that their answer should be in the past. Participant 11 then suggests the present participle 'being' (14:31). Participant 17 reiterates his suggestion that their sentence needs to be in the past (14:33). Participant 11 refutes this suggestion '*La, mo* {no not} past' (14:34). Participant 17 states that 'ing' represents the past and again reiterates his previous suggestion that their sentence needs to be in the past (14.36). Participant 11 then struggles to conjugate the past participle of research. Participant 11 uses his L1 to verbalize a question. The question appears to be directed to the members of his group rather than himself. Eight seconds later, participant 11 repeats his question. Participant 16 incorrectly suggests the present participle 'researching' (14:56). Participant 17 then correctly suggests the past participle 'researched' (14:59). Participant 16 then supplies the preposition 'by' (15:09). Participant 11 signifies his approval of the group's co-constructed answer. The participants write the correct answer of 'The idea was researched by the scientist'.

Participant 11 co-constructed the form of the target structure. Participant begins LRE 4 by reading out the instructions for the activity; 11 seconds later, he initiates the process of constructing their answer by providing the passive subject 'The idea' (14:26). This utterance established a shared frame of reference. Participant 11 is the central nexus of their intersubjective space; he initiates it, directs it (e.g., by asking questions), and approves of its product (i.e., the group's suggested answer). A point of conflict arises near the start of the LRE. Participant 17 repeatedly suggests that the sentence that they are

reconstructing is in the past (14:27, 14:33, and 14:36). Participant 11 refutes his suggestion (14:34). Although this suggests that participant 11 and participant 17 are attributing different temporal qualities to the sentence at hand, neither participant articulates as to why their position is correct. The group members then co-construct the target structure. Participant 11's contribution is that of the passive subject 'The idea' and the present participle 'being'. However, participant 11 is unable to independently conjugate the past participle. Participant 11 asks for assistance (14:38); '***El tasreef el thaleth hag researched, wesh tha?*** {The third conjugation of researched is what?}'. He knows specifically what he needs help with and attempts to solicit that help using metalanguage from his L1. Swain et al. (2011, p.87) suggest that enlisting the help of others can be considered a form of self-regulation. Furthermore, the use of metalinguistic terminology indicates that participant 11 is once again drawing upon previously learned linguistic knowledge. However instead of entering into a guiding dialogic process in which the timing and quality of the mediation provided are carefully aligned to participant 11's current understanding, the other participants supply the answer through a series of guesses. Even though participant 11 does not supply the correct past participle himself and some of his cognitive processing is still located on the intermental plane, the fact that he noticed a gap in his production, solicited assistance, and was receptive to feedback suggests that he has taken control of his learning. Overall, participant 11 seems to be aware of the parts of speech required to produce the present continuous passive. He seems to understand conceptually what is required, but his performance system does not seem to have caught up with his conceptual understanding.

The participants vertically co-constructed linguistic knowledge. In LRE 4, participants 11, 16 and 17 alternately supply the components of the target structure and build upon previously externalized knowledge. In order to visualize how knowledge was co-constructed, LRE 4 has been plotted onto an axis (Figure 14). The horizontal axis represents interactional time; the vertical axis represents the complexity of the target language; the numbers refer to the participants; and the positive/negative signs represent correct/complete or incorrect/incomplete knowledge.

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subject + be verb + past
participle + by + agent

| | | | | | written |
| by | | | | | answer+ |
| past participle | | | | 16+ | |
| being | | 11- | 16- | 17+ | |
| be verb | 11+ | | | | |
| subject | 17+ | | | | |
| | 11+ | | | | |

interactional time

*Figure 14.* Co-construction of target sentence (style of diagram adapted from Donato, 1994)

Although participation was not equal, all participants contributed.  Participant 11 provides the passive subject 'The idea' (14:26).  Participant 17 then suggests the be verb 'is' (14:27); participant 11 then suggests the present participle 'being' (14:31).  Then, the co-construction of the sentence stalls.  Participant 11 asks for assistance with the conjugation of the past participle of research. Participant 16 supplies an incorrect answer 'researching' (14:56); then, participant 17 provides the correct answer of 'researched' (14:59).  Participant 16 supplies the preposition 'by' (15:09) and their written answer contains the agent 'the scientist'.  LRE 4 is an example of vertically co-constructed knowledge (Donato, 1994, p.44-5; Ohta, 2000, p.69).

The problem was resolved collaboratively.  In this LRE, the role of the learners was not fixed; it was fluid.  Although participant 11 managed the LRE, each group member was both receptive to the suggestions of the others and contributed to the co-construction of their answer.  By pooling their linguistic resources and by engaging in a "cooperative struggle" (Lantolf & Thorne, 2006, p.10), participant 11 and his group were able to build a single syntactic structure which is jointly owned and which no group member could construct in isolation. This LRE highlights the need for fluidity of the expert when knowledge building. A key question here is can participant 11 turn this potential performance into actual performance?

*5.6.6 LRE 5*

LRE 5 is also taken from the same guided learning activity. LRE 5 took place 30 seconds after LRE 4. Part 2, question 2c of the guided learning activity asked the participants to convert an active sentence into a passive sentence.

Active: The police officer is investigating the crimes.
Passive: _____

The following LRE provides the language produced by participants 11, 16, and 17 as they completed this sentence conversion task.

15:48 Participant 11: The police officer is investigating the crimes.
***Mengoul esh*** {what do we say?} The crime is ***sah***? {right}
16:05 Participant 16: humm
16:06 Participant 11: Being investigated, ***sah***? {right?}
16:16 Participant 16: Yes
16:16 Participant 11: Investigated by the police officer. ***Sah*** {right}?
16:27 Participant 16: ***Sah*** {right}
16:32 Participant 17: ***Khalas*** {are we finished?}

Participant 11 reads the sentence that the group needs to convert. He then asks his group for their thoughts '**Mengoul esh** {what do we say?}' (15:48). Participant 11 then starts to construct an answer. He partitions his answer into three separate sections. The Arabic question '***sah***? {right}' denotes the end of each section. Firstly, participant 11 forms a subject by incorrectly changing the plurality of the participant in the original sentence from the plural 'The crimes' to the singular 'The crime'; he then adds the be verb 'is' (15:48). In the second section, participant 11 provides the correct present participle 'being' and the past participle 'investigated' (16:06). In the final section, participant 11 repeats the past participle 'investigated', then adds the preposition 'by' and the agent 'the police officer' (16:16). Throughout participant 11's utterance, participant 16 indicates his agreement through the use of acknowledgement markers 'humm' and 'yes' to backchannel. Participant 17 asks whether or not they have finished

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(16:32).  The group write the incorrect answer of 'The crime is being investigated by the police officer'.

Participant 11 vertically constructed linguistic knowledge.  Within this LRE, participant 11 intentionally partitioned his answer into three separate sections; the Arabic word '*sah* {right}' denotes the end of each section.  The first section contains the subject (the crime) and the be verb (is); the second section contains the present participle (being) and the past participle (investigated); the final section repeats the past participle (investigated) then provides the agent (by the police officer).  LRE 5 has been plotted onto an axis (Figure 15).

subject + be verb + being +
past participle + by + agent                                   written answer-
past participle + by + agent                        11+
being + past participle                        11+
subject + be verb                        11-
                                                                 interactional time

*Figure 15.* Construction of target sentence (style of diagram adapted from Donato, 1994)
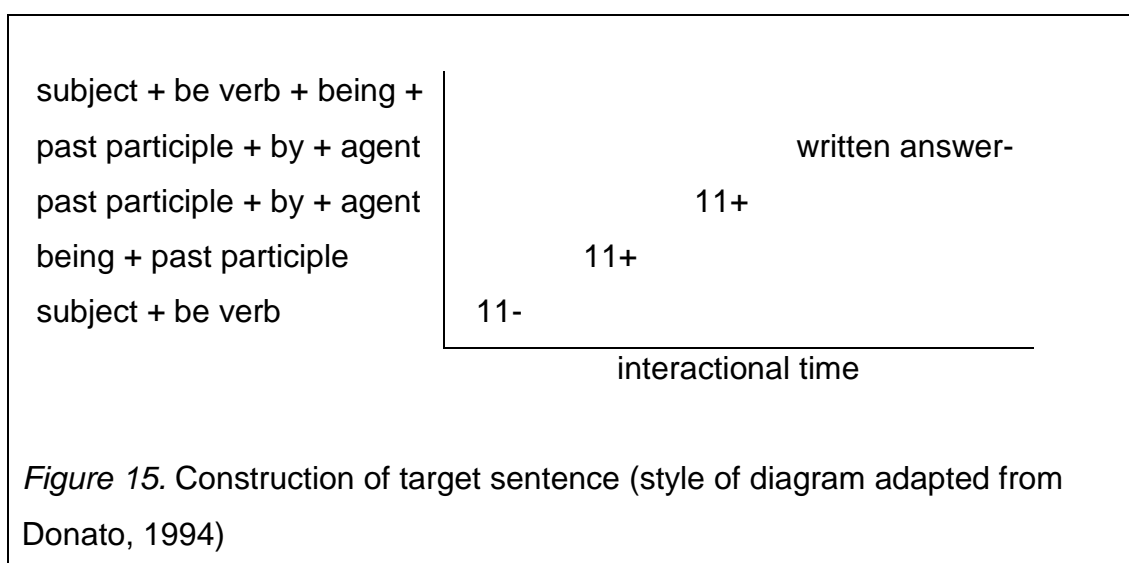
By uttering consecutive phrases each linguistically building upon the last, participant 11 vertically constructed linguistic knowledge.

Participant 11 voluntarily controlled his production of the target structure. During the LRE, participant 11 sought and received confirmation from his group members that each segment of his utterance was correct by thrice embedding the discourse marker '*sah* {right}' within his utterance.  Here, a discourse marker is operationalized as a word or phrase whose function is to organize discourse into segments.  The use of '*sah* {right}' also functions as a tag question 'Am I right?'.  The use of this evaluation seeking utterance is an example of speech which has a duel (i.e., egocentric and communicative) function.  Partitioning his answer into three separate sections allowed participant 11 to create three temporal spaces within the group's shared

cognitive space.  Each of these spaces provided participant 11 with time to reflect on and refocus his attention.  Thus, LRE 5 provides an example of a discourse marker being used as a linguistic tool for task handling purposes (Gánem-Gutiérrez & Roehr, 2011, p.309).  The actions of participant 11 were the result of him attempting to use an Arabic discourse marker to voluntarily manage and organize his cognitive processes in order to improve the accuracy of an unfamiliar L2 grammatical structure that he is in the process of producing.

Within a shared cognitive space, participant 11 attempted to create a sense of joint ownership.  Just before participant 11 begins to convert the sentence, he utters '***Mengoul esh*** {what do we say?}'.  This "temporarily established we" (Adair-Hauck & Donato, 1994, p.548) is interpersonal in nature; it is a reference to the collective which attempts to create a heightened sense of intersubjectivity.  Other studies have also found that in order to promote intersubjectivity, learners have employed the discourse strategy of verbalizing the concept *we* (Adair-Hauck & Donato, 1994, p.548; Donato, 1988; Guerrero & Villamil, 2000, p.54).  The inclusion of a reference to the group's collective ownership of their answer also functions as an open invitation for the other participants to contribute to and other-regulate his forthcoming performance.  Furthermore, participant 11 thrice embeds the Arabic word '***sah***? {right}' within his utterance in order to solicit evaluative contributions from his other group members.  Here, the word '***sah***? {right}' is elliptical; it represents the question 'Do you think that my answer so far is correct?'.  LRE 5 is illustrative of how the social and individual functions of language are intertwined (Wertsch, 1985, p.93).  Although this LRE is dominated by participant 11, the attempts that he makes at creating and maintaining intersubjectivity suggest that he understands that his answer belongs to the group and that his performance may require assistance.

Participant 11 is still in the process of integrating new linguistic knowledge about the target structure with his existing linguistic knowledge.  Although the sentence produced by participant 11 is grammatically correct, it does contain an error.  When producing the sentence, participant 11 changed the plurality of the patient in the original sentence from plural to singular; he changes 'crimes' into 'crime' (15:48).  Participant 11 may have been influenced by the other

sentences within the guided learning activity. All of the present continuous passive sentences contained within the guided learning activity contain singular subjects; question 2c is the first time that participant 11 is confronted with a plural subject within the target structure. The conversion of this plural object into a singular subject suggests that he is still engaged in the process of reconciling new linguistic knowledge with existing linguistic knowledge.

*5.6.7 LRE 6*

In week five of the study, participant 11 completed the present continuous passive text-editing task. Appendix DD provides his group's written work. He completed this activity with participant 12. In his pretest, participant 12 scored zero. However, participant 12 was able to correctly write the be verb 'is' and the preposition 'by'. Within the text-editing task, the participants needed to locate and correct three grammatical errors which pertained to the target structure. LRE 6 revolves around one of these sentences.

> Maha watch by one rhino as it slowly chews the grass.

LRE 6 provides the interaction between participants as they attempt to correct the errors contained within this sentence.

> 03:54 Participant 12: *Waini* "watch/watching"? {where is watch/watching?}
> 04:00 Participant 11: Maha watch, Maha watch by one rhino as it slowly. *Yemken* {maybe} "watched", "watched it by." *Hot hedi* {Put this}.
> 04:13 Participant 12: *Hedi*? {this one?} Ed? Right now, *Shou hedi*? {What is this?}
> 04:21 Participant 11: Maha watched by. Watched. One rhino.

Participant 12 initiates this LRE by asking the location of the verbs 'watch' and/or 'watching' (03:54). From the recording, it is unclear to what participant 12 is alluding to. Perhaps he is referring to the illustration which accompanies the paragraph. Participant 11 does not respond to his partner's utterance;

instead, he reads the sentence from the beginning, omitting 'chews the grass' (04:00). Participant 11 then suggests an answer. He converts the base form of the verb 'watch' into 'watched'; additionally, he adds an object 'it' and the preposition 'by' (04:00). Participant 11 prefaces his suggestion with the Arabic word '***Yemken*** {maybe}'. Participant 12 is also not sure of participant 11's answer; he reminds his partner of the temporal context of the paragraph, 'Right now' (04:13). Participant 11 then removes the object 'it' from his suggested answer; his final answer is 'Maha watched by. Watched. One rhino.' (04:21). The LRE is unsuccessfully resolved.

Participant 11 does not successfully correct the sentence. The sentence that participant 11 is attempting to correct contains the main verb 'watch' in its base form. Thus, the sentence is missing the be verb 'is', the present participle 'being', and the past participle 'watched'. Participant 11's first attempt at correcting the sentence involves converting the base form of the main verb into its past participle 'watched' and then adding an object 'it' and the preposition 'by' (04:00). This initial attempt is prefaced with a modal '***Yemken*** {maybe}'. As this utterance is self-evaluative, it is considered to be private speech. Alegría de la Colina & García Mayo (2009, p.341) argue that private speech may be used for reflection, both when learners are developing and understanding and when they are engaged in discussing form. After being reminded of the time of the paragraph 'Right now' (04:13), participant 11 modifies his suggestion by removing the object 'it'. Even though participant 12's comment of 'Right now' provided participant 11 with an opportunity to "language" (Swain, 2006, p.96) about the time, the tense, or the structure of the sentence, participant 11 and his partner did not further discuss the sentence. They do not further co-construct the target structure or linguistic knowledge pertaining to the target structure.

Participant 11's performance of the target structure within this activity cannot be determined. Up to this point in the text-editing activity, participant 11 has not yet produced an utterance which pertains to the structure of the present continuous passive. Two explanations exist. Firstly, as this LRE starts around four minutes into the task, it is possible that participant 11 has not yet realized that the present continuous tense is required. The instructions for the text-

editing activity do not explicitly mention the present continuous tense; thus, the participants needed to figure out the required tense through both the scenario which the paragraph created and the contextual cues embedded within. Although the paragraph contains six clauses in the present continuous tense (three active and three passive), all of the present continuous clauses also require correction. In other words, the passage does not contain an example, active or passive, of a complete sentence in the present continuous tense. Therefore, it is not immediately obvious that the present continuous tense is required. Secondly, participant 11 may not yet be able to apply his emergent knowledge of the target structure to the text-editing activity. Participant 11 changed the base verb 'watch' into its past participle 'watched' (04:00), suggesting that he may have realized that the passive voice was required but was unable to correct the sentence. LRE 7 offers explanation.

*5.6.8 LRE 7*

LRE 7 is also taken from the text-editing task. Within the text-editing task, the participants needed to locate and correct three grammatical errors which pertained to the target structure. LRE 7 revolves around one of these sentences.

> The grass is chewed by the rhinos.

In LRE 7, participant 11 attempts to correct the error contained within the above sentence.

> 07:33 Participant 11: The grass is chewed by… three mistakes. Oh, okay. [inaudible] ***ha nsawi*** {we will do it like this} is, the grass is being chewed by the rhinos.

Participant 11 reads out-loud most of the sentence that he and his partner need to correct (07:33). He then reminds himself and his partner that the text contains 'three mistakes'. He prefaces his forthcoming suggestion with the discourse marker 'Oh, okay' and the Arabic phrase '***ha nsawi*** {we will do it like

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this}'.  Participant 11 utters the be verb 'is' and then successfully corrects the sentence by inserting the present participle 'being' into the correct location.  His partner does not comment upon the suggested answer.  The LRE is successfully resolved.

Participant 11 successfully corrects the sentence.  In order to focus his and his partner's attention onto the sentence that they need to correct, participant 11 reads most of the sentence out loud, just omitting the agent 'rhinos'.  His utterance of 'three mistakes' better orientates him to the task at hand and indicates that he is probably aware that the target sentence is inaccurate.  The discourse marker 'Oh, okay' suggests that participant 11 experienced a "sudden moment of insight" (Gánem-Gutiérrez & Harun, 2011, p.110).  The use of this discourse marker supports Gánem-Gutiérrez's (2008, p.132) assertion that discourse markers "bracket stages of cognitive development; they mark specific moments where L2 change is occurring or adjusting".  Participant 11 then prefaces his forthcoming suggestion with an interpersonal Arabic phrase '**ha nsawi** {we will do it like this}'.  This phrase maintains intersubjectivity between the participants and can also be viewed as a self-directed utterance since it signifies his intention to supply the answer.  The absence modality in this phrase infers certainty.  The word 'is' focuses his attention (07:33).  Participant 11 then correctly inserts the present participle 'being' into the sentence.  This act of correction stemmed from participant 11 applying his developing linguistic knowledge about the target structure to the sentence.  Participant 11 did not provide a rationale for his answer.  Participant 11 independently identified and then solved a linguistic problem; he self-regulated his performance of the target structure.

LRE 7 shows the first time that participant 11 attempted to intentionally produce the present continuous structure within the text-editing task.  Before entering into LRE 7, participant 11 had not yet produced an utterance which referred to the present continuous tense, both active and passive, within the text-editing task.  Thus, LRE 7 is significant because not only does participant 11 attempt an utterance which pertains to the target structure but also because his production is linguistically accurate.  LRE 7 suggests that when LRE 6 took place, participant 11 was not aware that the present continuous tense was

required, as opposed to being unable to apply his emergent knowledge of the target structure to his performance. Within excerpt LRE 7, the words 'Oh, okay' may portray the moment that participant 11 realized that the present continuous tense was required to complete the task.

*5.6.9 LRE 8*

In LRE 8, the participants return to the same sentence that they were unable to correct in excerpt LRE 6.

Maha watch by one rhino as it slowly chews the grass.

In LRE 6, participant 11 twice attempted to correct this sentence, unsuccessfully. As previously identified (see *section 5.5.2*), returning to a previously discussed sentence is considered as constituting a new LRE. LRE 8 provides the speech as participants 11 and 12 return to this sentence.

08:04 Participant 11: Maha watch, Maha is being watched, Maha is being watched by the [inaudible].

Participant 11 reads the first two words of the sentence 'Maha watch'. In his next phrase, he adds the be verb 'is', the present participle 'being', and converts the base verb 'watch' into the past participle 'watched'. In his final phrase, he adds the preposition 'by'. The result is the almost complete answer of 'Maha is being watched by'. Participant 12 remains silent. Their written work indicates that the LRE was successfully resolved.

Participant 11's performance of the target structure is becoming increasingly self-regulated. In LRE 8, participant 11 returns to the sentence that he could not correct in LRE 6. He recognized that their previous answer was incorrect. In this LRE, participant 11's utterance consists of three phrases. Each phrase is uttered without hesitation and builds upon the last, resulting in the correct answer of 'Maha is being watched by'. In the same way that he did in LRE 5, participant 11 successfully employed the strategy of segmenting his answer.

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However unlike in LRE 5, participant 11's performance is not interspersed with the discourse marker '**sah**? {right}' and intermittent confirmation from another group member.  Participant 11 independently corrected the most difficult sentence within the text-editing activity, suggesting that linguistic development has taken place since the pretest.  By returning to the same sentence that LRE 6 revolves around and correcting it, LRE 8 provides further evidence that in LRE 6 participant 11 had not yet realized that the text-editing task required the use of the present continuous tense.

*5.6.10 LRE 9*

LRE 9 is also from the text-editing activity.  As well as deliberate grammatical errors pertaining to the passive voice, the text-editing activity also contained three deliberate grammatical errors pertaining to active voice.  LRE 9 revolves around one of these errors.

> Maha observing a zoo keeper feed two rhinos.

The sentence that the participants need to correct is in the active voice.  The be verb 'is' has been omitted.

> 08:21 Participant 11: Maha is being observing **aw** {or} Maha observed…
> **Akid ma feeh…**{surely there's not} [inaudible]
> 08:35 Participant 12: **Khalast?** {You're done?} **Ba'ed?** {There is more?}

Participant 11 makes two attempts to correct the sentence.  Firstly, he inserts the be verb 'is' and the present participle 'being', but neglects to change the present participle 'observing' (08:21).  Secondly, he changes the present participle 'observing' into 'observed'.  Participant 11 then reflects on his utterance using his L1.  Participant 12 asks him if he has finished (08:35).  The participants do not attempt to correct the sentence on the worksheet.

Participant 11 attempts to correct a mistake within an active voice sentence by applying the concept of the passive voice.  Before attempting to correct this

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sentence, participant 11 had already successfully self-regulated his performance of the target structure in the text-editing task twice before (see LREs 7 and 8). At this point in the task, participant 11 and his partner were looking for the third incorrect passive sentence. The transcript of the text-editing task (appendix BB) shows that before this LRE took place, the participants had already twice discussed words within this sentence. The first time they discussed the vocabulary word 'feed' (02:57); the second time they discussed the vocabulary word 'observing' (06:24). The final time the participants discuss this sentence resulted in LRE 9. Participant 11 firstly inserts the be verb 'is' and the present participle 'being', but neglects to change the present participle 'observing' (08:21); then secondly, he changes the present participle 'observing' into 'observed'. Participant 11 does not attempt to unite his utterances into the grammatically correct, but contextually incorrect phrase 'Maha is being observed by a zoo keeper'. Participant 11 then attempts to self-regulate his performance on the intermental plane by providing feedback to himself. The phrase of '**Akid ma feeh...**{surely there's not}' is self-evaluative private speech; it indicates uncertainty. Throughout this LRE, participant 11 does not seem to realize that the sentence which he is trying to correct should be in the active voice.

LRE 9 is an example of overgeneralization. Overgeneralization occurs when a learner uses a linguistic form or pattern when it is not required (Lantolf & Thorne, 2006, p.190). In LRE 9, participant 11 consciously attempts to correct a mistake embedded within an active voice sentence by inappropriately applying the form of the passive voice. His action suggests that he has not yet received frequent enough exposure to the form of the present continuous passive; and thus, the form of the present continuous passive has yet to be "habituated through constant and successful use" (Lantolf & Thorne, 2006, p.189). Here, the context in which the LRE occurred is important. If participant 11 had encountered this active voice sentence in a different context, then he may have been able to correct it. "Self-regulation is a relative phenomenon" (Lantolf & Appel, 1994, p.12). If a learner is able to self-regulate their performance during a specific type of task, then it cannot be assumed that the same learner will also be able to self-regulate their performance of the same linguistic concept in all tasks and at all times. LRE 9 provides an example of

how overgeneralization can be accounted for within a Vygotskian sociocultural framework. It demonstrates how learning is a "cumulative, ongoing, non-linear process that involves regressions and variable performance" (Dobao, 2014a, p.515) as new linguistic concepts are understood in relation to existing linguistic concepts and applied within new contexts.

*5.6.11 LRE 10*

In week seven of the study, participant 11 completed the present continuous passive dictogloss activity with participant 19. In his pretest, participant 19 was unable to write the target sentence; he scored zero points. The dictogloss activity required the participants to make notes as a short text was read, then use their notes to reconstruct the text. Appendix EE provides participant 11's notes and the group's reconstructed text. The original text contained three present continuous sentences in the passive voice, including the following sentence.

A paper cup is being held by the air hostess as she speaks.

LRE 10 provides the dialogic interaction as the participants attempt to reconstruct this sentence.

04:34 Participant 11: A paper cup…

04:35 Participant 19: A paper… *eh* {yes} cup.

04:37 Participant 11: ***Shno katabet hna?*** {What did you write here?}

04:38 Participant 19: ***Kenet baktobha, lesh hayed el kelma ma dakhalet?*** {I was writing it, why wasn't this word inserted?} A paper cup is being… ***Esh hay?*** {What's this?}

04:53 Participant 11: Held.

04:54 Participant 19: Is being held by the airhostess.

05:01 Participant 11: ***Tsk*** {No}. By the air, by the air?

05:05 Participant 19: A paper cup is being held by the air hostess

05:16 Participant 11: ***Hina ghalat?*** {There's a mistake here?}

05:17 Participant 19: ***La, la, tamam*** {No, no, it's ok}

05:18 Participant 11: As

05:19 Participant 19: As she speaks.

Table 23 provides the target sentence in the original text, the notes that each participant took, and the participants' reconstructed sentence.

Table 23

*Original target sentence and its reconstructions*

| Target sentence in original text | Notes of participant 11 | Notes of participant 19 | Participants' reconstructed sentence |
|---|---|---|---|
| A paper cup is being held by the air hostess as she speaks. | A paper cup is … by the air … as she speaks | a … is peing help by air hostes | A paper cup is being held by the air host as she speaks. |

Participant 11 starts to reconstruct the target sentence by reading his notes 'A paper cup' (04:34).  Participant 19 agrees with the suggested information.  Participant 11 then enquires about his partner's notes '***Shno katabet hna?*** {What did you write here?}' (04:37).  Participant 19 acknowledges that his notes are incomplete; however, he also adds the be verb 'is' and 'being', forming the construction 'A paper cup is being' (04:38).  Then, participant 19 questions something '***Esh hay?*** {What's this?}' (04:38); he may be referring to the word 'help' in his notes.  Participant 11 then supplies the required past participle 'held' (04:53).  Participant 19 develops their reconstruction by incorporating this past participle into their sentence; he then adds the preposition 'by' and the agent 'the air hostess' (04:54).  Participant 11 questions a part of their construction; he twice repeats the phrase 'by the air' (05:01).  His questioning of this part of the utterance may be due to the fact that his notes are incomplete.  Participant 19 verbalizes their thus far reconstructed sentence in its entirety 'A paper cup is being held by the air hostess' (05:05).  Again, participant 11 questions its correctness '***Hina ghalat?*** {There's a mistake here?}' (05:16); again his partner reassures him '***La, la, tamam*** {No, no, it's ok}' (05:17).  Participant 11 then initiates the addition of the prepositional phrase by supplying the word 'as' (05:18).  Participant 19 then provides the complete prepositional

phrase 'as she speaks' (05:19). The participants write the almost correct answer 'A paper cup is being held by the air host as she speaks'.

Participant 11 participated in collaborative dialogue. Most of the sentence can be reconstructed using the participants' combined notes; thus, the process of reconstruction is fairly straightforward. However, participant 11 is provided with one linguistic problem to solve, figuring out the correct past participle. Participant 11's notes do not contain any reference to this past participle; additionally, the notes of his partner suggest that the correct past participle is 'help'. However, participant 11 supplies the missing past participle 'held' (04:53). It is unclear how he was able to solve this linguistic problem. One explanation is that he remembered this word from the audio-file. A more probable explanation is that participant 11 used a combination of his partner's notes, his knowledge of the form of the target structure, and an awareness of context in which the sentence is embedded in order to convert the word 'help' into the correct past participle 'held'. Thus, he was mediated by both his partner's notes and by his own linguistic knowledge. By working together, the participants correctly reconstructed the second target sentence, despite the incompleteness and/or inaccuracy of their notes. They created a shared cognitive space in which they could joint problem solve.

Arabic was used as a task management tool. This LRE contains numerous examples Arabic being used to manage the task, including the following five phrases:

- **Shno katabet hna?** {What did you write here?}
- **Kenet baktobha, lesh hayed el kelma ma dakhalet?** {I was writing it, why wasn't this word inserted?}
- **Esh hay?** {What's this?}
- **Hina ghalat?** {There's a mistake here?}
- **La, la, tamam** {No, no, it's ok}

The participants' use of these phrases revolves around the processes which contribute to the process of completing the task, for example, clarifying what was written or questioning the accuracy of their reconstruction. Guerrero and

Villamil (2000) identify that talk about the task is a sign of how learners operationalize the task and is essential "in order for the students to understand the requirements in their own terms and to gain control of the task" (p.56). Within this LRE, the participants used their shared L1 in order to establish and maintain an intersubjective space in which they could gain a joint understanding of the task and participate in collaborative dialogue. The participants' use of L1 was effective; the target sentence was co-constructed within 45 seconds.

*5.6.12 Posttest and delayed posttest*

Participant 11 completed a posttest in week 7 (see figure 16) and a delayed posttest in week 12 (see figure 17).
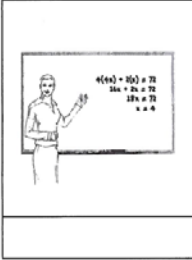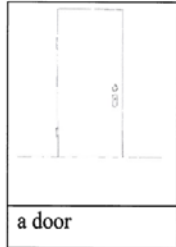


*Figure 16.* Participant 11's present continuous passive posttest

In the posttest, participant 11 was able to write the simple past passive without requiring mediation; he scored 4 points. The histogram (see figure 8) in *section 5.3.1* shows that he was one of two students whose pretest to posttest score increased by four points. He sustained his level of performance in the delayed posttest.
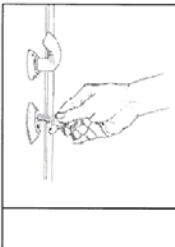


Right now, a security guard is working. He has just closed a door and has put a key into the lock of the door. He is holding the handle of the door and turning the key. The door _____ _____(lock/security guard). The security guard is thinking about changing his job.

1. The door is ~~loc~~ being locked by
2.                                                              the security guard
3.
4.

*Figure 17*. Participant 11's present continuous passive delayed posttest

Five weeks after the posttest, participant 11 was able to maintain his performance of the target structure in the delayed posttest. The histogram (see figure 9) in *section 5.3.1* shows that he was one of eleven students whose posttest to delayed posttest score stayed the same.

**Chapter 6 – Discussion**

The results of the tests and the microgenetic analysis are discussed and contextualized within the academic literature.

*6.1 Effectiveness of intervention*

> *To what extent does working collaboratively to complete form-focused tasks impact on learners' longer-term performance of a complex grammatical structure?*

The greatest median score gains for both target structures were made by the experimental group between the pretest and the posttest. Thus, the descriptive statistics suggest that for the participants in this study the treatment condition of working collaboratively had a greater impact on their linguistic development than either completing the treatment tasks individually or not completing them at all (see table 10). Furthermore, the absence of median score declines between the posttests and delayed posttests suggests that the experimental group's gains were stable over the duration of the study. However, only one statistically significant difference was found. The statistical analysis shows a pretest to posttest statistically significant difference between the performances of the experimental group and control group for the structure of the simple past passive. This statistically significant difference is moderate to large in size (Cramér's $V = 0.46$), suggesting a moderate to large association between completing the treatment tasks collaboratively and the resulting linguistic development for the structure of the simple past passive in comparison to not completing the treatment tasks.

No statistically significant differences were found between the experimental group and the comparison group. Thus, the experimental group's median score performance gains over the comparison group are not generalizable. The lack of a statistically significant difference between the performances of the experimental and comparison groups for both target structures suggests that working collaboratively is not statistically more effective in facilitating learners' movements towards the self-regulation of a complex L2 grammatical structure

than working individually.  Although, the statistical findings of this study do not add to the growing body of evidence which suggests that cooperative learning is more effective than individualistic learning (Cole, 2014; Hattie, 2009, p.213), these findings are largely in line with previous SLA research which has investigated working collaboratively and the attainment of specific grammatical outcomes.  When investigating the effectiveness of working collaboratively when learning grammatical structures, one study found statistically significant differences between the conditions of working collaboratively and working individually at posttesting (Spielman-Davidson, 2000), whilst all other studies found that although descriptive differences were present between the two learning conditions, statistically significant differences were absent (Kuiken & Vedder, 2002; Nassaji & Tian, 2010; Reinders, 2009).  As the above SLA studies all employed the attainment of specific grammatical outcomes as their dependent variables, it is possible that working collaboratively may be better suited to tasks which have a more open-ended outcome.

The median score gains made by the comparison group between the pretest and the posttest were minimal.  Furthermore, the results of the comparison group do not differ in a statistically significant way from the results of the other two groups.  A pretest to posttest moderate effect (Cramér's $V = 0.33$) was found between the control and comparison groups for the structure of the simple past passive; however, the $p$-value ($p = 0.06$) is only approaching statistical significance.  Thus, completing the treatment sessions individually was not shown to be more effective in facilitating learners' movements towards self-regulation of the target structures in comparison to not completing the treatment tasks.  Here it is important to remember that in the present study a statistically significant difference was found between the experimental group and control group for the structure of the simple past passive.  Thus for the structure of the simple past passive, the median score performance gains of the comparison group were simultaneously *not* large enough to be significantly different from the control group's but large enough to *not* be significantly different from the experimental group's.  The absence of statistically significant differences between the results of the comparison group and the other two groups suggests that descriptive differences between these groups may be due to random variation, measurement error, or a lack of statistical power.  Overall,

the lack of a statistically significant difference between the performances of the comparison and experimental groups for both target structures suggests that working individually is not statistically less effective in facilitating learners' movements towards the self-regulation of a complex L2 grammatical structure than working collaboratively.

The median score gains for the control group show no group-level development. At the group-level, there is no evidence that participants who did not complete the treatment tasks developed their knowledge of either target structure. This is unexpected. As previously explained, as well as obtaining a more accurate understanding of the participants' linguistic development, the moves of mediation provided during testing also had the potential to develop participants' performance of the target structures (see *section 4.8*). However, although performance gains were expected, they were not forthcoming. Several explanations exist. Firstly, although participants received gradiated and contingent feedback pertaining to the correctness of their answers, the moves of mediation were not dialogic (Aljaafreh & Lantolf, 1994). Thus, the moves of mediation were not individually tailored to the needs of the participants. The lack of median score gains suggests that for some of the participants a ZPD was not created during testing (see *section 7.3.2* for more information). Secondly due to the five-minute testing time limit, participants who were unable to correctly write a target structure were shown the correct answer but were not provided with a corresponding explanation. Thirdly, the groups did not begin the study with equal levels of knowledge of the target structures. For the structure of the simple past passive, the control group has the highest median pretest score (*Mdn* = 3) when compared to the comparison group (*Mdn* = 2) and experimental group (*Mdn* = 2). Thus, the scope for gains for this target structure was more limited compared to the other two groups. Finally, the control group contained a small number of participants (*n* = 16). Thus, the results could be easily affected by learner variation.

Differences exist between the results of the target structures. Throughout the study, nearly all median scores for the simple past passive are higher than their equivalent score for the present continuous passive. Several explanations exist. Firstly, although the passive voice is not formally taught at the institution

in which this study took place until ENGL250, the participants may have been taught the structure of the simple past passive prior to enrolment.  Secondly, the simple past passive is more common and more commonly taught.  The participants should have encountered the simple past passive more frequently prior to taking part in this study as well as during the study.  Thus from the outset of the study and throughout, their spontaneous knowledge of the structure of the simple past passive may have been more developed than their spontaneous knowledge of the structure of the present continuous passive.  Thirdly, the present continuous passive is both conceptually and structurally more complex (Aitken, 2001, p.142-149; North, Ortega, & Sheehan, 2010, p.11).  Due to this complexity, the participants may have found moving through the stages of their ZPD towards self-regulation to have been more difficult.

The participants found it difficult to develop their performance of the structure of the present continuous passive.  The median score gains for the structure of the present continuous passive indicate that little or no development took place at the group level.  Although the histograms in *section 5.3.1* show that some individuals experienced performance gains for this target structure, no statistically significant differences between groups were found.  The structure of the present continuous passive is conceptually and structurally complex.  Due to this complexity, the participants may have found it challenging to understand the moves of mediation administered during testing.  Also, the participants of the experimental and comparison groups may have found it challenging access the mediation contained within the treatment tasks.  Finally during the treatment sessions, the participants of the experimental group may have found it challenging to create and maintain an intersubjective space in which they were able to provide and be receptive to peer-mediation.  Other studies have also found non-significance for the collaborative learning of complex grammatical structures at posttesting (Kuiken & Vedder, 2002; Nassaji & Tian, 2010; Reinders, 2009) and at delayed posttesting (Spielman-Davidson, 2000).  It is possible that "not all grammatical items and structures benefit from the same kind of classroom treatment" (Storch, 1999, p.371); thus, "interaction may be more effective in promoting learning of some forms than others" (Adams, 2007, p.48).  The results suggest that less frequent complex grammatical structures

may be more difficult to learn, or learners may be more receptive to alternative pedagogical interventions.

*6.2 Variation*

The histograms in *section 5.3.1* reveal that a high level of individual variation exists within the data.  Three trends within the data are: declining scores, static pretest to posttest scores, and posttest to delayed posttest gains.

Some participants experienced declining scores.  Including data from both target structures, there are 30 instances of a participant's score declining between consecutive tests.  The majority of these declines occurred between the posttest and delayed posttest (22); however, declines also occurred between the pretest and the posttest (8).  Four comparison group members and two experimental group members experienced pretest to posttest score declines.  These pretest to posttest declines are unexpected as between these tests these participants completed all treatment sessions.  Table 24 identifies all test items on which the pretest to posttest declines occurred.

Table 24

*Test items on which the pretest to posttest score declines occurred*

| Pretest - Posttest | |
| --- | --- |
| Simple past passive | Present continuous passive |
| 14 | 17 |
| 16 | 18 |
| 20 | 22 |
| 25 | |
| 26 | |

The score declines did not occur on the same test items.  As the items from which each test was comprised of were taken from a shared test bank, a few difficult test items were not responsible for the majority of pretest to posttest declines.

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Regarding the four comparison group members and two experimental group members who experienced pretest to posttest score declines, several explanations exist. Firstly, a participant may have correctly guessed the answer on the pretest. Due to time constraints, for both target structures only a single test item was administered. There was no verification from a second test item. Secondly, it is possible that a participant did not understand the scenario created by an item on the posttest. This would mean that some participants may not have understood which tense was required. Thirdly, a participant may have not taken the posttest seriously. Participation in the study was voluntary; some participants may have lost interest. Finally, completing the treatment sessions may have negatively affected the performance of some participants. Studies have examples of participants who have worked collaboratively adhering to incorrect answers (Adams, 2007; Hatch, 2014; Spielman-Davidson, 2000; Swain, 1998). For the two experimental group members, incorrectly resolved LREs (see LRE 5 for an example) could have affected their future performance.

For some participants, completing the treatment tasks did not improve their performance. Including data from both target structures, the scores of 29 participants who received the treatment, either individually or collaboratively, remained unchanged from a pretest to a posttest. Two participants in the comparison group and one participant in the experimental group scored maximum points on the pretest for a target structure; thus, they could not improve on their initial performance. However, excluding these three participants, 26 participants remain. The lack of gains for these participants at this point in the study is unexpected as these participants had completed the treatment tasks and had received mediation during the pretest. A lack of developmental readiness is rejected as an explanation. Vygotsky argued that development occurs through participation in activities that are beyond the learners' current level of ability; therefore, instruction should not wait for developmental readiness (Poehner, 2008, p.12). One explanation is that the treatment tasks and the moves of mediation administered during the pretest were ineffective for some participants. Not all social interaction leads to cognitive development. For development to occur, interactions need to take place within a learner's ZPD (Guerrero & Villamil, 2000, p.52). If a shared

frame of reference was not established, then a participant would not have been responsive to mediation. Possible explanations for the limited effectiveness of the treatment tasks are discussed further in *section 7.3.3*. Another explanation is that the data collection tools may not have been sensitive enough. The performance of these participants may have improved but not enough to register a reduction in the explicitness of mediation required to accurately write a target structure.

The performance of some participants improved from the posttest to the delayed posttest. Including data from both target structures, six participants in the control group, 13 participants in the comparison group, and 15 participants in the experimental group achieved score gains on a delayed posttest. Several explanations exist. Firstly, it is possible that some of these participants improved their knowledge and understanding of the target structures outside the context of this study. Secondly, the gains could have been achieved through test familiarity. Relatively large changes can occur as an outcome of simply practicing a test. For example, it has been shown that approximately 30% of learners improve to a statistically significant extent due to retesting (LeGagnoux, Michael, Hocevar, & Maxwell, 1990). Thirdly, due to the way in which the tests were scored, the possibility existed for some participants to move from a low score to a high score through small improvements in accuracy. After the moves of mediation had been administered, if any part of a participant's answer was still incorrect, then they received a score of zero. For example, a participant who wrote 'The table is being cleared the waiter' received a score of zero. However, adding the preposition 'by' made their answer correct. The inherent insensitivity of the scoring system allowed for the possibility of large score gains.

An interaction may exist between completing the treatment tasks and the mediation received on the posttest. Sociocultural theory makes a distinction between spontaneous and scientific concepts (see *section 3.1.1*). Situational and practical linguistic knowledge that a learner acquires through their everyday experiences is considered to be a spontaneous concept; whilst, linguistic knowledge taught in schools is considered to be a scientific concept as it is systematic and not contextually bound. Voice is a grammatical concept. It was

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thought that at the start of the study the participants' knowledge and performance of the target structures would be primarily based on spontaneous conceptual knowledge rather than scientific conceptual knowledge. Admittedly to a limited extent, the treatment tasks then attempted to develop the participants' scientific conceptual knowledge of the target structures, including their temporal, metalinguistic, and syntactic knowledge. Thus, it is possible that when the posttest took place, the comparison group and the experimental group's understanding of the linguistic properties of the target structures was more systematic and less contextually bound than the control group's. Importantly, some moves of mediation administered during the posttest also contained conceptual knowledge. The third move of mediation sought to give information about specific error(s); this potentially included information about: time, tense, metalinguistic terms, and word order. A more developed scientific conceptual understanding, derived from completing the treatment tasks, may have enabled participants in the comparison and experimental groups to better reconcile the mediation received on the posttest with their existing knowledge of the target structures and subsequently improve their performance on the delayed posttest. Thus for the participants in the comparison group and experimental group who achieved score gains on a delayed posttest, these gains could be accounted for by a possible interaction between completing the treatment tasks and the mediation received on the posttest.

The high levels of individual variation indicate that within each group, some learners benefited more from participating in the study than others. Other studies which have investigated learner-learner interaction have also reported considerable individual variation (Adams, 2007; Dobao, 2012; Storch, 2005; Swain & Lapkin, 1998, 2000). Here, it is important to remember that the "development of leaning does not happen in a linear, incremental fashion" (Vygotsky, 1978, p.73). Learning is a "cumulative, ongoing, non-linear process that involves regressions and variable performance" (Dobao, 2014a, p.515). The journey of each individual learner is unique; it unfolds in different ways under different circumstances (Donato, 2000). The variability in the findings expresses one of the main theoretical assumptions of this study; although social interaction can be a source of higher cognitive development, each individual masters their own cognitive functions in unique ways. This assumption is

further explored when discussing participant 11's journey towards self-regulation.

*6.3 The microgenetic analysis*

> *How does working collaboratively enable undergraduate learners in a Qatari context to move towards being able to self-regulate a complex grammatical structure?*

Participant 11 completed the treatment sessions collaboratively. His journey towards being able to self-regulate his production of the present continuous passive is discussed.

*6.3.1 From interpsychological to intrapsychological*

Sociocultural theory posits that as learners move towards self-regulation, the explicitness of the other-regulation required decreases and is replaced by strategies which are more self-regulatory. This belief is borne out in the data. Table 25 provides a summary of participant 11's journey.

In the pretest, participant 11 was not able to write the target structure with the aid of mediation; however, he was able to produce each part of speech from which the target structure is formed. Therefore at the start of the study, he was responsive to mediation and producing the target structure in the context of the pretest was within his ZPD. Within the guided learning task, participant 11 received other-regulation from his peers as well as self-regulation from himself. In LRE 4, participant 11 successfully co-constructed the target structure with his peers. In LRE 5, he produced the target structure. However, even though the sentence produced by participant 11 in LRE 5 was grammatically correct, it is not the correct answer to the question. When he exited the guided learning task, participant 11 was both still in the process of reconciling new linguistic knowledge with existing linguistic knowledge and turning his potential performance into actual performance. Within the text-editing task, three

Table 25

*Summary of participant 11's journey*

| Week | Event | Data presented | Primary type of regulation experienced | Mediation sensitive to participant's ZPD? |
|------|-------|----------------|-----------------------------------------|--------------------------------------------|
| 1 | pretest | pretest | other-regulation | yes |
| 3 | guided learning | LRE 1 | none | n/a |
| 3 | guided learning | LRE 2 | self-regulation | no |
| 3 | guided learning | LRE 3 | self-regulation | no |
| 3 | guided learning | LRE 4 | other-regulation | yes |
| 3 | guided learning | LRE 5 | self-regulation | yes |
| 5 | text-editing | LRE 6 | other-regulation / self-regulation | no |
| 5 | text-editing | LRE 7 | self-regulation | yes |
| 5 | text-editing | LRE 8 | self-regulation | yes |
| 5 | text-editing | LRE 9 | self-regulation | no |
| 7 | dictogloss | LRE 10 | other-regulation / self-regulation | yes |
| 7 | posttest | posttest | self-regulation | yes |
| 12 | delayed posttest | delayed posttest | self-regulation | yes |

sentences pertaining to the target structure needed to be corrected.  Participant 11 successfully corrected two of these sentences, self-regulating his performance and temporarily fulfilling the role of expert in the process (see LRE 7 and LRE 8).  However within the text-editing activity, participant 11 also attempted to correct a mistake within an active voice sentence by incorrectly applying the concept of the passive voice (see LRE 9).  Nevertheless, a more self-regulated learner emerged from the text-editing activity.  Within the dictogloss task, participant 11 was once again able to successfully solve

linguistic problems and accurately produce the target structure. On his posttest and delayed posttest, participant 11 self-regulated his performance. The genesis of participant 11's linguistic development is visible through the selected LREs and his performance on the tests, which taken together show how a reliance on external mediation was replaced by strategies which are more self-regulatory. The microgenetic analysis supports Vygotsky's (1978) belief that "[t]he transformation of an interpersonal process into an intrapersonal one is the result of a long series of developmental events" (p.57) and is typically "subtle, gradual, and complex" (Wertsch, 1985, p.167) rather than a sudden abrupt shift from social to individual functioning.


*6.3.2 Conceptual development*

It was thought that at the start of the study participant 11's performance of the target structures would be primarily based on spontaneous conceptual knowledge rather than scientific conceptual knowledge. This is because within the sequence of courses to which ENGL250 belongs, the passive voice is not explicitly taught prior to ENGL250. However, it is possible that participant 11 may have had his awareness raised of the formal properties of either target structure before the start of the study. Participant 11's attempt at applying metalinguistic terminology in LRE 2, 'Take. Taken. Taken *el tasreef el thaleth*. *Taken el tasreef el thaleth* {Taken is the third conjugation, taken is the third conjugation}', and LRE 4, 'Research. *El tasreef el talet haga wesh*? {What is its third conjugation?}', alludes to the existence of previously learned linguistic knowledge. The development of participant 11's conceptual knowledge of the structure of the present continuous passive can be glimpsed though the selected LREs.

At the start of the study, participant 11's emergent ability to produce the structure of the present continuous passive was matched by an emergent conceptual understanding. In LRE 1, he confused the concept of time with the concept of aspect, thinking that the time of a present continuous passive construction was conveyed by its present participle. Thus in the sentence 'The exam is being taken by the student', he thought that the word 'being' indicated

that the time of this sentence is the present. In LREs 2 and 3, he attempted to consciously reflect on the temporal meaning attributed to the use of a past participle within the target structure. He initially hypothesized that 'taken' conveyed the time of the past when used within the example sentence. A few seconds later, he questioned this decision. In order to resolve this problem, he attempted to voluntarily regulate his own thinking on the intermental plane; however, he was unsuccessful. In LRE 4, a group member suggested that the time of a present continuous sentence that they were converting from the active voice to the passive voice is in the past. However, he explicitly refuted this suggestion. Although participant 11 does not elaborate further, his refutation suggests that he understood that even though a sentence in the present continuous passive contains a past participle, the time conveyed by this structure is not the past. Finally, in LRE 9 participant 11 attempted to correct a mistake within an active voice sentence by applying the concept of the passive voice. This example of overgeneralization suggests that his conceptual understanding lagged behind his knowledge of form. Participant 11 accurately produced the form of the present continuous passive on the posttest. However, being able to produce the target structure in the context of the posttest does not necessarily equate to conceptually understanding it. Thus, although it is possible that during the study participant 11 developed his scientific knowledge of the target structure, his conceptual understanding of the target structure cannot be accurately determined from the available data. Participant 11's struggle to understand the relationship between the parts of speech used to construct the structure of the present continuous passive and the conceptual meanings embedded within and created by those words illustrates the complex interrelationship between meaning and form.

### 6.3.3 Summary of participant 11's journey

For one learner, the microgenetic analysis has connected language learning as it appeared on the intermental plane with longer-term improvements in linguistic performance. The posttest results suggest that completing the tests dynamically in conjunction with completing the treatment sessions collaboratively enabled participant 11 to develop his ability to self-regulate the

structure of the present continuous passive.  The data show how participant 11 was other-regulated by the test items and worksheets, other-regulated by his peers and the researcher, and self-regulated by himself both on the intermental and intramental planes.  Furthermore, his learning was mediated by linguistic knowledge and cognitive processes on both the intermental and intramental planes as well as the languages of English and Arabic.  The data also show how working collaboratively provided participant 11 with opportunities to adjust, refine, and develop his linguistic performance, which in turn enabled him to develop his ability to self-regulate the structure of the present continuous passive.  Participant 11's demonstration of an increasing ability to exercise control over his performance of the structure of the present continuous passive on the intermental plane suggests that changes in his intrapsychological functioning have occurred.  However, the data only provide evidence that participant 11 can self-regulate his performance of this structure in the contexts provided by this study; also, the extent of participant 11's conceptual knowledge is still largely unknown.  Here, it is important to remember that self-regulation is a "relative phenomenon" (Lantolf & Appel, 1994, p.12).  If a learner is able to self-regulate their performance during a specific type of task, it cannot be assumed that the learner will be able to self-regulate their performance of the same concept in all tasks and at all times.  Consequently, there is limited evidence that participant 11's ability to self-regulate the structure of the present continuous passive is permanent, stable, or transferable.  In other words, it is not possible to say that participant 11 has internalized the structure of the present continuous passive.

The microgenetic analysis of participant 11's journey may not be representative of other learners' journeys.  Gánem-Gutiérrez (2008) explains that "each instance of microgenesis is unique since it is co-created by individuals with their own histories and goals" (p.122).  Additionally, Miles and Huberman (1984, p.231) explain that researchers who draw conclusions from qualitative data must not be over reliant on participants who make themselves accessible when relating their findings to a more general phenomenon.  Within the experimental group, only four participants volunteered to be audio-recorded for all treatment sessions.  Of these four volunteers, the journey of participant 11 was selected

because it showed the most dramatic progress.  Other learners may experience different trajectories if they were to participate in a similar study.

*6.4 Peer mediation*

Peers can be a source of linguistic knowledge.  Within the selected LREs, participant 11 was other-regulated by his peers in LREs 3, 4, 5, 6, and 10. Within the selected LREs, participant 11 contributed the following acts: explaining the task, focusing the group's attention, soliciting contributions, soliciting assistance, asking for justification, contributing parts of speech of a target structure, contributing metalinguistic terminology, hypothesizing about the conceptual properties of a target structure, and providing and asking for evaluative feedback.  Through these acts and additional contributions from the other group members, participant 11 and his group were then able to: to co-construct linguistic knowledge, solve language related problems, discover new meanings, make previously unknown connections, and expose each other to corrective feedback.  The analysis of the selected LREs illustrates how working collaboratively can allow learners to joint problem solve and joint knowledge build (i.e., to participate in collaborative dialogue) and how this collaborative effort mediates language learning.  Consequently, the findings support Vygotsky's view that "using language to talk about language … is an important force in the emergence of scientific concepts" (Wertsch, 1985, p.103).  Here, it is important to understand that working collaboratively in itself does not lead to learning; instead, the cognitive processes which it facilitates have the potential to lead to language learning.  Lantolf's (2000) conception of the ZPD as the "collaborative construction of opportunities for individuals to develop their mental abilities" (p.17) is apt.

The microgenetic analysis connects the vertical co-construction of linguistic structures to subsequent improvements in actual performance.  Within the sequence of LREs, participant 11 vertically co-constructs a complex grammatical structure with his peers (see LRE 4), then approximately 40 seconds later employs self-regulatory strategies to structure and organize his largely independent production of the same grammatical structure (see LRE 5).

Two weeks later, participant 11 then employs similar self-regulatory strategies to regulate his actual production of the same grammatical structure (see LRE 8). Concerns have been expressed that vertically co-constructing knowledge may result in a piecemeal type of interaction that might not be conducive to language development. Faerch and Kasper (1986) posited that if vertical constructions are long, then "there is a risk that learners forget the formal elements and hence create no basis for establishing new syntactic structures" (p.263). However, this study has shown how learners can use linguistic structures which have been created through the process of vertical co-construction as a resource for linguistic development. In above sequence of LREs, actual performance seems to have developed from potential performance, which in turn involved the vertical co-construction of linguistic structures. This example supports Wells' (1999a) argument that "by contributing to the joint meaning making with and for others, one also makes meaning for oneself and, in the process, extends one's own understanding" (p.108). Overall, vertically co-constructing linguistic structures can be an important part of the other-regulation experienced when collaboratively completing form-focused tasks. Other researchers have similar findings (Donato, 1994, p.44-5; Ohta, 2000, p.69).

The mediation provided by group members was not intentionally gradiated and contingent. To the participants, correctly completing each task within the allotted time represented the goal of each treatment session. The participants were not informed that they were expected to peer mediate and training was not given. As a result, the participants attempted to solve each problem as efficiently as possible; the participants did not attempt to strategically guide each other to the correct answer through the conscious application of high quality mediation. Thus although the data shows that the participants often engaged in resource pooling acts, this other-regulation was *situationally* gradiated and contingent rather than *intentionally* gradiated and contingent. If the feedback provided by a peer facilitated the linguistic development of another learner, it did so fortuitously rather than by design. Consequently throughout the study, the interaction between the participants was more akin to collaborative scaffolding (Donato, 1994) than an expertly created and managed ZPD. Here it is important to understand that although each participant could

theoretically assume the role of expert, most participants were themselves in the process of learning how to self-regulate their performance of the target structures. Their inability to self-regulate their own performance seems to have limited the quality of the mediation that they were able to provide which in turn may have limited linguistic development of their peers. Nassaji and Tian (2010, p.412) also hypothesized that their participants' limited collaboration skills may have contributed to a lack of learning.


*6.5 Employing self-regulatory strategies*

Learners can employ self-regulatory mechanisms within meaningful dialogic interaction in order to improve their linguistic performance. The theme of self-regulation emerges from participant 11's data. A reoccurring theme throughout the selected LREs is the externalization of cognitive processes on the intermental plane. Within the ten LREs summarized in table 25, verbalized self-regulatory strategies are a prominent type of regulation within eight. Within these eight LREs, participant 11 self-regulated his thinking on the intermental plane by: rereading task instructions, asking himself questions, hypothesizing, self-evaluating (e.g., through the use of modal verbs), asking his peers for assistance, accessing pooled linguistic resources, and intentionally structuring his production (e.g., through the use of discourse markers). Participant 11's improved performance on both his posttest suggests that his deployment of these self-regulatory strategies resulted in learning. When moving towards self-regulation, learners need to increase their share of responsibility for a task; participant 11's self-regulatory strategies reveal how this may be achieved.

The microgenetic analysis highlights the role that self-regulation can play within the context of collaborative learning. Previous studies which have traced the development of grammatical knowledge on an individual level within the context of collaborative learning (e.g., Lapkin, et al., 2002; Swain & Lapkin, 2002; Tocalli-Beller & Swain, 2005) have mainly highlighted the importance of being other-regulated by one's peers, often focusing on the importance of collaborative dialogue. However as well as highlighting the importance of peer mediation, the results of this study also highlight the occurrence of and

subsequent mediational role that externalized self-regulatory strategies can play when learners work collaboratively, thus illustrating the "intertwining of external and internal factors" (Vygotsky, 1978, p.73) within a shared cognitive space. Hattie (2009, p.193) examined three meta-studies which in turn consisted of 113 individual studies which investigated the effectiveness of self-verbalization and self-questioning, finding a large effect size ($d$ = 0.64). Although this effect size is not specific to language learning, it does support using self-regulatory strategies to learn. Working collaboratively can provide access to an interpsychological space in which learners can objectify their cognitive activity which in turn has the potential to aid in the development of their longer-term L2 performance. The externalization of intramental cognitive activity can be an important aspect of working collaboratively.

## 6.6 The regulatory mechanism of language

The findings show how language is used as a tool for thinking. Throughout the study, participant 11 used language as a cognitive tool to mediate his language learning. How participant 11 employed the regulatory mechanisms (Gánem-Gutiérrez, 2013, p.139) of L1, private speech, and discourse markers is discussed.

## 6.6.1 Use of L1

Arabic mediated the learning of an English grammatical structure. All participants shared Arabic as their L1. In nine of the selected LREs, participant 11 used Arabic. Within these LREs, participant 11 used Arabic to introduce and explain a task, focus the group's attention, focus his own attention, establish and maintain an intersubjective space, solicit contributions, solicit justifications, ask for clarification, ask for evaluative feedback from his group, provide evaluative feedback to his group, provide evaluative feedback to himself, contribute metalinguistic terminology, and hypothesize about the conceptual properties of the parts of speech within a target structure. As well as managing the task, these regulatory acts enabled participant 11 to joint problem solve and joint knowledge build. Consequently, the use of Arabic allowed participant 11 to

better regulate the performances of himself and his peers, meaning that they could attain a higher level of performance than if he had just spoken in English.

Previously, L1 has often been understood in terms of interference. Storch and Aldosari (2010, p.356) explain that in the past the dominant view towards learners using their L1 in the L2 classroom was that it should be strongly discouraged. Some researchers felt that the use of L1 would interfere with L2 development (e.g., Odlin, 1989; Kellerman, 1995). However, a learner's L1 can be a powerful cognitive tool. Similar to the LREs in this study, SLA literature contains examples which show how L2 learners can use their L1 on the intermental plane for cognitive functions when working collaboratively (e.g., Alegría de la Colina & García Mayo, 2009; Anton & DiCamilla, 1999; Storch & Aldosari, 2010; Swain & Lapkin, 2000; Villamil & de Guerrero, 1996). This study has shown that when working collaboratively to complete form-focused tasks, learners can use their L1 as a tool to both regulate and manage their own L2 learning. This observation aligns with Vygotsky's (1986) view that "knowledge of one's own language" is an important cognitive tool which "plays an important role in the study of the foreign one" (p.159).

*6.6.2 Private speech*

The use of private speech mediated language learning. Within the selected LREs, participant 11 is thought to have employed private speech in LREs 2, 3, 5, 6, 7, and 9. Participant 11's use of private speech primarily fulfilled the self-regulatory functions of focusing his attention, hypothesizing, and evaluating. Similar to the findings of other studies (e.g., Alegría de la Colina & García Mayo, 2009; Anton & DiCamilla, 1999), the examples of private speech contained within the LREs were mainly verbalized in the learner's L1. For example, participant 11 used Arabic to hypothesize about and evaluate his performance (see table 26).

Table 26

*Participant 11's use of Arabic to hypothesize and evaluate*

| LRE | Speech | Function |
|-----|--------|----------|
| 2 | ***La. La***. ***Momken yekoon past***. {No, no. It could be past}… | to hypothesize |
| 6 | Participant 11: Maha watch, Maha watch by one rhino as it slowly. ***Yemken*** {maybe} "watched", … | to hypothesize |
| 9 | ***Akid ma feeh…***{surely there's not} | to evaluate |

Thus, participant 11's use of externalized private speech assisted in voluntarily controlling his thinking processes. Similar to the results of this study, SLA literature contains examples which show how L2 learners can benefit from externalizing their private speech when working collaboratively (e.g., Alegría de la Colina & García Mayo, 2009; Anton & DiCamilla, 1999; DiCamilla & Anton, 2004; Villamil & de Guerrero, 1996). This finding supports the view that private speech "a key mechanism for internalization" (Gánem-Gutiérrez, 2013, p.140). However, it is unclear to what extent participant 11's externalized private speech benefited his other group members.

Working collaboratively can curtail private speech. Any speech identified as private speech is naturally imbued with bidirectional properties (Lantolf, 2006, p.96). In other words, private speech simultaneously contains self-regulatory meaning for the speaker as well as communicative meaning for the other group members. As it can be identical in structure to and interwoven with communicative speech, externalized private speech can have unintended intermental consequences. The microgenetic analysis from the present study contains an example of participant 11's private speech being understood as a call for joint action by his other group members. In LRE 3, participant 11's verbalized private speech did not fulfil its intended function of focusing his attention on the linguistic properties of a target structure. Instead, it was perceived as a call to jointly answer a worksheet question and thus helped to focus the collective mind of the group. For the remainder of this LRE, participant 11 did not continue the process of attempting to reflect on the properties of the target structure, at least not on the intermental plane. This

example illustrates Smith's (2007) observation that "all speech uttered aloud in the presence of another person has the potential to be perceived as an intermental act, even if one's intention is primarily private" (p.354). The data shows that when it is deployed in a collaborative setting the inherent bidirectional properties of private speech may reorient its intended use. Nevertheless, this study illustrates the benefits of employing private speech in a collaborative setting.

*6.6.3 Discourse markers*

Discourse markers are an important regulatory mechanism. The microgenetic analysis highlights the task handling role that discourse markers can play in the learning process. The connection between LREs 5 and 8 elucidates this role. In LRE 5, participant 11 intentionally employed a discourse marker, '***sah*** {right}', to segment his answer into three separate sections. The actions of participant 11 were the result of him attempting to use a previously internalized regulatory mechanism from his L1 to voluntarily structure and organize his thinking in order to improve the accuracy of an unfamiliar L2 complex grammatical structure that he was in the process of producing. Interestingly, participant 11 employed a similar strategy of segmentation in LRE 8 with one important difference. The end of each segment was not denoted by a discourse marker. This is an example of how learners can employ, then subsequently reduce their dependence upon discourse markers when developing their linguistic performance. Thus, participant 11's reduction in the use of a discourse marker shows how intermental mediation reduces as learners' ability to self-regulate increases. This example supports Lantolf et al.'s (2015) assertion that as learners internalize new concepts, "they are less dependent on external symbols to orient their actions" (p.221).

As well as task handling, a discourse marker was also evidenced marking specific moments where L2 change may have occurred. In LRE 7, participant 11 experienced a "sudden moment of insight" (Gánem-Gutiérrez & Harun, 2011, p.110). In order to convey this, he employed a discourse marker, 'Oh, okay. [inaudible] ***ha nsawi*** {we will do it like this}'. This discourse marker prefaces the

first time within the text-editing activity that participant 11 produced the relevant target structure.  This use of a discourse marker supports Gánem-Gutiérrez's (2008) assertion that discourse markers "bracket stages of cognitive development; they mark specific moments where L2 change is occurring or adjusting" (p.132).  Other research has also highlighted the role of discourse markers as regulatory aids both in general (Heritage, 2005) and in language learning (Gánem-Gutiérrez, 2008, 2009; Gánem-Gutiérrez & Harun, 2011; Gánem-Gutiérrez & Roehr, 2011).

*6.7 The need for an expert*

Most of the LREs that participant 11 participated in were not resolved.  Of the 24 present continuous passive LREs that pertain to participant 11, eleven were not resolved correctly (see table 22).  If the LREs in which participant 11 compared his answers to the original text are excluded, then 52% of the present continuous passive LREs that participant 11 was involved in were not correctly resolved.  Thus unlike the findings of other studies (Dobao, 2014b; Storch 2007), the microgenetic analysis suggests that working collaboratively can result in a high percentage of LREs that are not resolved correctly.  Previous studies have shown that incorrectly resolved LREs can inform future performance.  Spielman-Davidson (2000, p.165), who investigated how working collaboratively affected learners' performance of French conditionals, found that learners later adhered to inaccurately co-constructed grammatical knowledge about 50% of the time; Hatch (2014), who investigated how metatalk which occurred in collaborative settings mediated vocabulary knowledge, found that "[w]hen LREs were solved incorrectly, 70% of follow-up items were answered incorrectly as well" (p.202).  Participant 11 scored the maximum points on both posttests for the structure of the present continuous passive, and thus within the context of this study, is deemed to have developed his ability to self-regulate his performance of this target structure.  Therefore, the data presented provides no evidence that not being able to correctly resolve 52% of the LREs negatively impacted participant 11's longer-term performance.

One possible explanation for this finding is that teacher feedback was given directly after each treatment task.  Evidence exists that participant 11 was anticipating post-task teacher feedback as he completed the treatment tasks.  The following excerpt is taken from the first treatment task.

> 08:21 Participant 11: ***Hathy tara laha qawa'ed akeed ehna ma'arafnaha*** {it must have rules, of course, which we frankly don't know} ***laken nakteb ay kelma 'ady 'ashan tamshy bas*** {but we'll write any word to move things along} ***we howa ysaleh lna*** {and he will edit for us when he arrives}

Providing post-task feedback allowed the teacher to address and correct any misconceptions or unresolved issues, thus potentially lessening the impact of unsuccessfully resolved LREs.  Previous L2 research has highlighted the need for an expert to provide feedback to learners who have worked collaboratively (Dobao, 2014a; Hatch, 2014; Lapkin, et al., 2002; Swain & Lapkin, 1998).  The findings of the present study suggest that working collaboratively does not remove the need for an expert.


*6.8 Discussion – Summary*


This study employed a mixed-methods design which drew upon the Vygotskian sociocultural methodologies of the genetic method and dynamic assessment to explore how working collaboratively impacted upon learners' longer-term movements towards the self-regulation of two complex L2 grammatical structures.

Longer-term performance testing attempted to establish a connection between working collaboratively and linguistic development.  The descriptive statistics show that the greatest proportion of median score gains for both target structures can be attributed to the experimental group after the treatment condition of collaboratively completing the treatment tasks had been administered.  An absence of median score declines between the posttests and delayed posttests suggest that these gains were stable over the duration of the

study.  Additionally, the individual variation within the descriptive statistics suggests that learning might not be a smooth and linear process.  However for both target structures, no statistically significant differences were found between the results of the experimental group and the comparison group.  Thus, the linguistic development experienced by the experimental group in comparison to the participants who worked individually which is present within the descriptive statistics is not generalizable beyond the participants of this study.  The lack of a statistically significant difference between the performances of the experimental and comparison groups for both target structures suggests that working collaboratively is not statistically more effective in facilitating learners' linguistic development working individually.

The results of this study are not generalizable.  A generalizable relationship between collaboratively completing form-focused tasks and subsequent group-level improvements in linguistic performance was not evident in the results of the present study.  However from the outset of the study, the sample was not representative of the population from which it was taken.  When this study was carried out, Qatar University had a population of approximately 15,000 students (Qatar University, 2015, p.23); however, the direct population that the sample was taken from is the male student body.  This population consisted of approximately 3450 students (Qatar University, 2015, p.23).  Cohen et al. (2007, p.104) identifies that for a population this size a sample of around 500 is required.  I have a sample of 52.  A sample size of around 500 participants would have allowed for the possibility of generalizing from the results.  Thus, it was never possible to use the results of the present study in order to generalize to the population from which the sample was taken.  Sample size limitations are further discussed in *section 7.3.4.*

The microgenetic analysis was able to show how working collaboratively facilitated linguistic development.  The process of linguistic development was accessed on the intermental plane and traced over time across a sequence of interactions.  One learner's emergent use of the structure of the present continuous passive was examined in conjunction with the externalized cognitive processes which surrounded its emergent use.  The microgenetic analysis has shown that working collaboratively provides learners with access to a shared

cognitive space. Within this space, learners can access other-regulation from their peers and deploy their own self-regulatory strategies. In contrast, as well as not having access to peer mediation, learners who complete classroom tasks individually may be reluctant to objectify their self-regulatory strategies on the intermental plane; thinking out-loud can be perceived as strange. Thus, by allowing learners to blend how they are regulated in order to better meet their immediate linguistic needs, working collaboratively provides learning opportunities that working individually cannot. Consequently, this study agrees with Philp et al.'s (2014) assertion that "a primary strength of peer interaction is that it allows learners the space to experiment with language" (p.36). Additionally, the microgenetic analysis showed how L2 learners are able to use language as an interpsychological cognitive tool in order to regulate and mediate their own as well as each other's learning of linguistic structures. When working collaboratively, the mechanisms of L1, private speech, and discourse markers can be employed to regulate language learning. Finally, the qualitative data suggests that learners who have worked collaboratively may require post-task feedback from an expert. By showing how L2 learning "occurs *in* interaction, not *as a result of* interaction" [italic: authors' emphasis] (Swain, 2000; cited in Swain, Brooks, & Tocalli-Beller, 2002, p.173), the microgenetic analysis provided a deeper understanding of the genesis of language learning as well as the social embeddedness of linguistic development.

The process of language learning is complex. This study offers a nuanced understanding of how working collaboratively can lead to the attainment of specific grammatical outcomes for undergraduate language learners in a Qatari context. The analysis of the quantitative data shows to what extent working collaboratively to complete form-focused tasks impacted on learners' longer-term performance of two complex grammatical structures; whereas, the analysis of the qualitative data shows how working collaboratively enabled one learner to move towards being able to self-regulate a complex grammatical structure. By tracing in situ how one learner developed his ability to self-regulate a grammatical structure when working collaboratively, the experience of an individual has been explored within the context of the linguistic gains made by the collective to whom he belongs. Thus, even though the statistical analysis of the results suggests that working collaboratively is not more effective in

facilitating learners' linguistic development than working individually, the process of language learning has been connected to the outcome of language learning through the results of the descriptive statistics and the microgenetic analysis.  This connection reinforces the ontological position underpinning this study; although each learner's journey is idiosyncratic, we *all* still appropriate higher mental functions, including the self-regulation of a second language, through participation in meaningful social interaction.  Ultimately, the results of this study suggest that working collaboratively can play a role in the language classroom.

**Chapter 7 – Conclusion**

Contributions to knowledge that this study makes are given, followed by the pedagogical implications, limitations, and suggestions for future research.

*7.1 Contributions to knowledge*

This study contributes to knowledge.

*7.1.1 Contributions to Qatar*

To my knowledge, this is the only study to have been carried out with undergraduate learners in a Qatari context which has explored how working collaboratively may impact upon learners' knowledge of L2 form.  Qatar's relatively recent pedagogical reform has emphasized a need for learner-centred classrooms.  However without empirical data, it is not possible to make claims about the efficacy of learner-centred pedagogy in a Qatari context.  Although the results of the testing process suggest that working collaboratively is not more effective in facilitating learners' linguistic development at the group level than working individually, the microgenetic analysis has shown how working collaboratively can provide access to a shared cognitive space in which learners can access other-regulation from their peers and deploy their own self-regulatory strategies.  Furthermore, the data show how the cognitive processes embedded within these two types of regulation have the potential to lead to longer-term linguistic development.  Thus, the results of the present study suggest that working collaboratively is a viable instructional strategy for undergraduate EFL learners who are situated in Qatar.  Consequently, this study makes an important contribution to better understanding the types of pedagogies that may be effective in a Qatari context.

*7.1.2 Contributions to SLA*

This study's exploration of the connection between working collaboratively and longer-term movements towards the self-regulation of two L2 grammatical

structures contributes to understanding the extent to which second language development can occur within peer interaction. SLA researchers have repeatedly requested more empirical evidence which shows the extent to which working collaboratively with peers affects the longer-term development of a learner's linguistic system. Storch (2001a) stated that further investigation is needed into "whether collaborative pair work is indeed an aid to L2 learning" (p.47); Swain et al. (2002) asked for more research in order to provide a better understanding of how peer-peer dialogue impacts on long term L2 learning; Storch (2007) argued that "whether engagement in pair talk leads to subsequent L2 learning requires further empirical research" (p.156); Kim and McDonough (2008) wrote that "additional research is needed to identify the long-term impact of collaborative dialogue on L2 learning" (p.229); and Gánem-Gutiérrez (2008) argued that it is important for future research to "accurately establish the long-term effect that microgenesis … has on the learners' L2" (p.145). My research responds to these requests by providing empirical evidence of the longer-term benefits of working collaboratively. Over a 12-week period which included six treatment sessions, no statistically significant differences were found between the experimental group and the comparison group for the grammatical structures of the simple past passive and the present continuous passive. Although the descriptive statistics and the microgenetic analysis both provide evidence of language learning, the lack of a statistically significant difference between the performances of the experimental and comparison groups suggests that at the group level working collaboratively is not statistically more effective in facilitating learners' linguistic development of a complex L2 grammatical structure than working individually. It may be the case that working collaboratively is better suited to developing aspects of a second language other than grammatical accuracy.

This study contributes to a better understanding of how working collaboratively can facilitate L2 learning of form. SLA researchers have repeatedly emphasized the need to better understand peer mediation within the context of learner interaction. Antón and DiCamilla (1999) argue that it is "imperative for SLA research to explore the nature of learner interaction and the mechanisms to which learners resort when engaged in collaborative tasks" (p.245). Ohta (2000) states that "the interactional mechanisms involved in the obtaining or

providing of assistance during language tasks have been little examined" (p.52). Donato (2004) identifies that "although research and theory on interaction is vast in the field of additional language acquisition, relatively few studies specifically take into account the collaborative aspects of learners' jointly constructed activity" (p.284). Gánem-Gutiérrez and Harun (2011) argue that "[u]nderstanding in as much detail as possible the precise, and multiple ways in which verbalization mediates both cognitive and linguistic development is … crucial at the theoretical and practical levels" (p.100). Dobao (2014a) wrote that "much research is still needed to explore small group interaction across a variety of task types, proficiency levels, and pedagogical contexts ... Such research should provide new insights into … the conditions teachers need to create in the classroom to maximize the effectiveness of peer collaboration" (p.517). My research was able to show how working collaboratively can facilitate linguistic development. It shows that although when working collaboratively EFL learners benefit from engaging in collaborative dialogue, they can also benefit from being provided with a shared cognitive space in which they can externalize their *own* self-regulatory strategies. Language, especially a learner's L1, has been shown to play a central role in this process as it can be used to deploy regulatory mechanisms (e.g., private speech and discourse markers) which can be integrated into the thinking process. By providing an account of how the complex cognitive processes which are brought onto the interpsychological plane as learners work collaboratively mediate linguistic development, this study contributes to an understanding of how learners can use language to learn a language. In other words, this study contributes to a deeper understanding of why collaborative learning can be effective.

Studies carried out in a non-Western context which explore the efficacy of collaborative learning are of importance. In the field of psychology, serious concerns have been raised regarding how well the findings from current academic research are representative of humankind (Henrich, Heine, & Norenzayan, 2010). For example, Arnett (2008) analysed the top journals in six sub-disciplines of psychology from 2003 to 2007, revealing that 96% of subjects were from Western industrialized countries. In the social sciences, more research from non-Western contexts is needed in order to reduce the current

reliance on Western samples.  This study contributes to addressing this need.
Additionally, SLA meta-analyses require more contextual variation.
King and Mackey (2016, p.222) identify that samples from which SLA meta-analyses are comprised of must be representative of the populations that they seek to generalize to.  The only meta-analysis which has analysed the effectiveness of peer mediation in comparison to individualized or teacher-centred comparison conditions consisted of 22 reports, of which nine were situated in the USA (Cole, 2014).  If my study were to be included in a future SLA meta-analysis which explored the efficacy of working collaboratively, then the generalizability of the findings of such a meta-analysis would be enhanced.

### 7.1.3 Contributions to Vygotskian sociocultural theory

My research brings Vygotskian sociocultural theory to a new context.  For the first time, a Vygotskian view of mental development has been applied to the field of second language acquisition within a Qatari undergraduate EFL context.  This study has revealed some of the ways in which learners in a Qatari context are able to mediate their own and each other's learning of L2 form with the result that over a 12-week period knowledge which was initially social took on an increasingly psychological function.  This study's application of sociocultural theory to collaborative learning makes a contribution to better understanding how participating in mediated interaction with other learners can facilitate the development of L2 grammatical structures.  Consequently, this study has shown that Vygotskian sociocultural theory can be used as a lens to better understand the second language learning which takes place within a Qatari context.

### 7.1.4 Contributions to SLA methodological design

This study contributes to SLA methodological design.

Dynamic assessment was utilized to measure linguistic development.  For each individual, interventionist dynamic assessment was used to measure changes in the explicitness of mediation required to produce the target structures.  This allowed for the measurement of potential and actual performance.  This data

was then used to quantify linguistic development at the group level. Although dynamic assessment has become more prominent within the SLA academic literature, it is still underutilized within the field of SLA. Poehner (2008, p.5) identifies that although there is robust research literature on dynamic assessment in general education and psychology, few second language acquisition studies have examined L2 performance using dynamic assessment; Swain et al. (2011) explain that "studies investigating the use of dynamic assessment for second language assessment are few in number" (p.119); and Gánem-Gutiérrez (2013) writes that a challenge for pedagogues interested in implementing dynamic assessment "is how to make it work with groups of students" (p.142). This study is a rare example of how interventionist dynamic assessment can be used to measure the impact of learning at the group level, as such this study can serve as a resource for future research. The challenges that I faced and the compromises that I made will be of interest to other researchers who attempt to implement interventionist dynamic assessment (see *section 7.3.2*).

The genetic method was utilized to better understand the process of language learning. In a 1997 issue of '*The Modern Language Journal*', Firth and Wagner (1997) criticized what they perceived as a predominantly cognitive view of discourse and communication within SLA research. They advocated giving more attention to the social aspects of language acquisition, arguing that a broader, context-sensitive, participant-sensitive, generally sociolinguistic orientation might prove valuable for SLA research. Part of their recommendations suggested that SLA researchers attempt to better "understand and explicate how language is used as it is *being acquired through interaction*" [italic: authors' emphasis] (Firth & Wagner, 1997, p.296). A methodology which includes a microgenetic component made it possible to examine in situ and trace the process of linguistic development as it was realized within the culturally specific activity in which it is situated. Thus, this study has shown how the genetic method can be integrated into a pretest-posttest design with the result of allowing us to better understand the inner workings and causal dynamics of language learning as they emerge and develop over time.

This study has addressed some of the limitations in previous studies. The limitations of previous studies which explored how working collaboratively can lead to the attainment of specific linguistic outcomes are outlined in *section 3.5.5*. As well as connecting the process of language learning to the outcome of language learning through the employment of a mixed methods design, this study has addressed some of these limitations by: more accurately assessing linguistic development by measuring emergent linguistic performance, showing that gains made due to collaboratively completing form-focused tasks are durable five weeks after an immediate posttest, and better isolating the condition of working collaboratively from concurrent experiences through the use of a control group. Additionally as well as effect sizes, key statistical information about the data has been provided. Thus, this study's design provides a more robust understanding of how working collaboratively can impact of the development of L2 grammatical structures than previous studies. However, this study has its own limitations (see *section 7.3*).

## 7.2 Pedagogical implications

The results of this study have pedagogical implications for Qatari stakeholders and L2 pedagogy.

### 7.2.1 Qatari stakeholders

Qatar's educational system is currently undergoing pedagogical reform. One of the core pedagogical beliefs which underpins this reformation is the assumption that learner-centred pedagogy is more effective for students at all levels, kindergarten through to tertiary, than traditional teacher-centred pedagogy. Thus, teacher-centred pedagogies, which have been historically dominant, are currently being replaced with pedagogies which are more learner-centred. This study began by questioning this assumption. By exploring how working collaboratively impacted upon undergraduate learners' performance of two L2 grammatical structures, this study sought to provide empirical evidence regarding the effectiveness of learner-centred pedagogies in a Qatari context. Overall, there was shown to be a connection between working collaboratively

and improved linguistic performance.  The data also show how when working collaboratively, learners in a Qatari context can help and support each other on an individual level.  Thus, the results of this study suggest that working collaboratively can play a prominent role in the Qatari L2 classroom.

The results of this study may be of interest to the makers of Qatar's national educational policy.  To my knowledge, this is the only study so far from a Qatari classroom context which has investigated the role that working collaboratively can play in second language acquisition.  Although the results of this study need to be interpreted with caution, they add to the growing body of quantitative evidence from both the Programme for International Student Assessment (PISA) and the Qatar Comprehensive Educational Assessment (QCEA) which supports Qatar's Supreme Education Council's decision to initiate a transition to pedagogies which are more learner-centred.  Even though it is taking time for relatively rapid changes in macro-level educational policy to filter down into actual classroom practices (Al-Thani & Romanowski, 2013; General Secretariat for Development Planning, 2011, p.124) and become visible in improved test scores, the results of this study suggest that the government-initiated shift towards pedagogies which are more learner-centred is contextually appropriate.

*7.2.2 L2 pedagogy*

Implications exist which may inform SLA practice.

The findings advocate the use of collaborative form-focused tasks in SLA classrooms.  Collaboratively completing form-focused tasks has been shown to provide learners with access to a shared cognitive space in which they can both provide and receive peer mediation as well as deploy their own self-regulatory strategies.  By enabling learners to blend how they are regulated in order to better meet their immediate linguistic needs, working collaboratively provides learning opportunities that working individually cannot.  As peer interactions offer a rich potential, learners need to be given the opportunity to participate in collaborative tasks whose design contains opportunities to externalize their cognitive processes.  When deciding upon their selection of form-focused task,

SLA practitioners should consider how their choice of task goes beyond the exchange of a set of inflexible grammatical and syntactic rules and instead facilitates the externalization of cognitive processes in order to joint problem solve and knowledge build.  Although it is not clear in the present study which of the treatment tasks (i.e., guided learning, text-editing, or dictogloss) was most effective, these types of form-focused activities are an appropriate starting point.  Another starting point is '*Teaching Grammar in Second Language Classrooms*' by Nassaji and Fotos (2011) as it contains a chapter dedicated to teaching grammar using collaborative output tasks.  However, it still should be remembered that learners need to eventually self-regulate their performance; thus, individual performance tasks should not be discarded altogether.  Learners still need opportunities for independent practice, especially in contexts other than those directly taught.

The findings suggest a need for learner training.  As previously explained, the interaction between the participants was more akin to collaborative scaffolding (Donato, 1994) than an expertly created and managed ZPD (see *section 6.4*).  Thus, the data suggest that learners may not be naturally inclined to provide quality mediation.  Not informing the participants in the experimental group that they were expected to peer mediate and not providing the necessary training contributed to this dynamic.  Swain et al. (2002, p.181) argue that it is important to instruct students on both how and why collaboration is important.  Thus, teachers need to think about ways in which they can raise their learners' awareness of how to provide mediation to their peers rather than to provide feedback which is primarily orientated towards task completion.  Training could include discussing how learners can help each other to learn, showing videos of learners successfully providing peer mediation, and modelling working collaboratively.  Additionally, knowing how to provide mediation may result in a learner being more receptive to mediation.  Tzuriel (2011) reports on "a process-oriented programme designed to teach children how to mediate effectively" (p.125).  Tzuriel (2011) explains that learners who were trained as peer mediators also "knew how to benefit from mediation given to them" (p.126) and consequently displayed higher performance than a control group.  Training can provide learners with the resources they need to better exploit the opportunities that working collaboratively provides.

Verbalizing cognitive processes on the intermental plane should be encouraged. Because the externalization of thinking brings psychological processes into the intermental plane and renders them available for examination, it can facilitate problem solving and knowledge building which in turn can promote linguistic development. Thus, the results of this study suggest that learners should be encouraged to externalize their thinking within a shared cognitive space. In other words, when working collaboratively learners should be encouraged to "language" (Swain, 2006, p.96). The ability to self-regulate is a skill that can be learned and developed. Knouzi et al. (2010) traced the development of two learners' conceptual understanding of the grammatical concept of voice in French. They found that learners differed in their "repertoire of self-regulatory tools" and suggest that with supportive teaching self-regulating tools "can be made available to most learners" (Knouzi, et al., 2010, p.46-7). Learners should be shown how to externalize their cognitive processes and have their awareness raised of why it may be of benefit. For example, teachers could model self-regulatory strategies by thinking through a linguistic problem out-loud, then asking learners to identify which cognitive processes were externalized and how they helped to solve the problem. Thinking aloud when working collaboratively should be perceived as normal.

Teachers need an understanding of how language can be employed as a cognitive tool. This study has highlighted learners' use of three regulatory mechanisms. Firstly, L1 was used for regulatory acts which enabled joint problem solving and joint knowledge building. Thus, the results of the present study support researchers who take the position that to deny L2 learners the use of their L1 for complex linguistic tasks is to deny them the use of an important cognitive tool (Anton & DiCamilla, 1999; Guerrero & Villamil, 2000, p.64; Swain & Lapkin, 2000, p.269). The key point to consider is what learners are doing with their language output, not whether that output is their L1 or their L2. SLA practitioners should become more aware of how and why learners employ L1 in the language classroom and not discourage their learners from using their L1 to mediate their learning. Secondly, within the microgenetic analysis intermental private speech was often used to control intramental activity. Being able to identify learners' private speech would enable teachers

to gain better insights into the processes involved in the formation of learners' linguistic knowledge.  Thirdly, discourse markers were used for regulatory purposes.  Being aware of how learners employ discourse markers would give teachers a better understanding of the language learning process and could alert teachers to the occurrence of linguistic development in situ.  In summary, it is well documented that learners employ language as a cognitive tool to mediate their own as well as each other's language learning (Lantolf & Thorne, 2006).  Although learning collaboratively may facilitate the use of language as a cognitive tool, which in turn may aid language learning, such linear causality is a simplification.  Therefore, having an awareness of how learners' use language as a cognitive tool can assist teachers in monitoring and understanding a learner's development as well as how they are operating as a learner.  This understanding can be used to check understanding, inform feedback, as well as design and implement form-focused tasks.

The results may be of interest to SLA practitioners in a Middle Eastern context. Teacher-centred EFL pedagogy is considered to be the norm in many Arab countries (Ahmad, 2014; Al-Seghayer, 2014; Fareh, 2010; O'Brien, 2011; Storch & Aldosari, 2010).  For example, Storch and Aldosari (2010, p.359) identify that language classes in Saudi Arabia tend to be large, teacher-fronted, have a heavy reliance on a set textbook, employ rote learning, and focus on grammar and reading comprehension.  However, the present study was set in a Qatari context with the results advocating the use of collaborative form-focused tasks.  This study adds to the growing body of empirical evidence which supports the position that learner-centred instruction can be effective in a Middle Eastern EFL context (Al-Muslimi, 2016; Dabaghmanesh, et al., 2013; Ghorbani & Nezamoshari'e, 2012; Jalilifar, 2010; Kazemi & Khalili-Sabet, 2012; Momtaz & Garner, 2010; Takallou & Veisi, 2013).

*7.3 Limitations*

A thorough limitations section is given.  The intent is to make a contribution to knowledge by helping to guide future research.  The limitations are organized

into the following: suitability of the design, testing, the treatment sessions, and data analysis.

### 7.3.1 Suitability of design

This study's design is too elaborate. Firstly, this study's design contained two target structures. The intention was to provide the study with two dependent variables. However, the target structures have a similar syntactic structure and share some of the same parts of speech (i.e., past participle and the preposition 'by'). Consequently, linguistic input received when competing a test or treatment task pertaining to one of the target structures could potentially aid the development of the other target structure. As the sequence of treatment sessions continually alternated between target structures, the participants continually received input on linguistic features which are a part of both target structures. Only having one target structure would have given a clearer understanding of how completing the treatment tasks and tests impacted on the participants' linguistic development. Secondly due to the use of two target structures, this study's design comprised of six test items and six treatment sessions. In order to standardize the opportunities for learning for all participants, each participant needed to complete all tests and treatment tasks. Not completing either a treatment task or a test resulted in exclusion from the data analysis; 53 participants were excluded from the data analysis. A simpler design with only one target structure, three test items, and three treatment sessions, would have resulted in fewer participants being excluded from the data analysis and a more robust study.

### 7.3.2 Testing

There were limitations to the testing procedure.

Due to an absence of reciprocity, the mediation provided during testing did not optimally guide the participants. The moves of mediation were not based upon verbal interaction with a participant but instead were based upon a participant's ability to accurately write a target structure at the sentence level. Some

participants struggled to understand the scenario created by the paragraphs. This included figuring out the tense in which a paragraph was written. Additionally, some participants struggled to understand the moves of mediation. This is especially true for the more explicit moves of mediation which contain metalinguistic terminology. The mediation provided during testing was standardized. Thus, if a participant expressed confusion either due to the scenario created by a test item or by not understanding how a move of mediation related to his performance, the researcher was unable to adapt the moves of mediation based on the participants' verbal responses. Due to this lack of reciprocity, a shared frame of reference between the researcher and a participant was often not created and the mediation administered was often not attuned to a participant's immediate needs. Poehner (2008) explains that "how learners respond to mediation, their requests for additional support or specific kinds of support, and their refusal to accept help all provide important insights into their actual level of development. Without adequate attention to learners' contributions to DA, one cannot hope to provide appropriate mediation" (p.70). The standardized mediation which occurred during testing failed to reveal a deep understanding of the participants' linguistic knowledge and subsequent linguistic development.  This limitation illustrates Lantolf and Poehner's (2008) position that "standardized mediation limits the possibility of co-constructing a ZPD, imposing a strict set of categories for interpreting learners' behavior during DA risks overlooking or misunderstanding their contributions" (p.41).

The testing procedure was task-orientated rather than development-orientated. The cognitive activity of each participant was framed within an understanding of what they needed to do in order to be able to write the correct form of a target sentence. Consequently rather than help the participants to understand the linguistic concept of the passive voice, the moves of mediation were primarily designed to promote the participants' ability to write the form of the target structures. However, higher cognitive processes do not simply emerge through task completion; they emerge "as a result of the interaction" (Lantolf & Appel, 1994, p.10). From a Vygotskian perspective, when engaging in joint activity, the intent should not be to arrive at the correct answer as efficiently as possible but rather to develop learners' higher mental processes. One of the differences between the concepts of mediation and scaffolding is that with scaffolding "the

teachers or tutors providing the scaffold do not intend to help learners develop new cognitive functions and pay little attention to abilities that are in the process of maturing; instead, learners are given any support that is needed to complete the current task" (Valsiner & van der Veer, 1993, p.50). Due to their orientation towards task completion rather than conceptual development, it may be argued that the moves of mediation are more akin to the concept of scaffolding than an expertly created and managed ZPD. Providing mediation which was development-orientated would have been more in line with the tenants of sociocultural theory.

Time limits were imposed. Section eight of the 'Certificate of Ethical Research Approval' from Exeter University's Graduate School of Education specified that during testing, each participant would be out of the classroom for five minutes or less. Some participants were unable to complete both test items within a five-minute time limit. Additionally as the participants were made aware of the time limit, it is probable that some participants rushed reading the scenarios as well as their initial answers. This means that a time limit may have induced some participants to not fully comprehend the scenario that each test item created and to provide an initial answer which was below their actual performance. Furthermore after the initial sentence, a time limit of 30 seconds was imposed for each subsequent sentence. If the 30 seconds elapsed before a participant had finished writing or correcting a sentence, then the next move of mediation was administered. This often resulted in mediation being provided to partially corrected and/or previously written sentences. Also due to the time limit, detailed feedback was not given and there was often not enough time for some the participants to process the moves of mediation that they did receive. Finally, the testing time limit prevented multiple measures of performance from being obtained. Although the imposition of a five-minute time limit reduced the amount of disruption to the participants' academic lives, it also reduced the validity of the results.

The thinking from which participants' production stemmed from was not evaluated. Linguistic knowledge was ascertained through the participants' ability to accurately write the target structures at the sentence level with the aid of mediation. However, being able to produce a target structure in the context

of a test does not necessarily equate to conceptually understanding it.  Thus, some participants with a limited conceptual understanding may have accurately produced a target structure.  Studies which have asked their participants to explain their conceptual understanding of a grammatical concept during the testing stage have been able to better understand the genesis of their participants conceptual understanding (e.g., Brooks, et al., 2010; Lapkin, Swain & Knouzi, 2008).  Vygotsky (1978, 1986) saw the relationship between thought and language as dialectical.  Thus as well as providing a more nuanced understanding of linguistic development, verbalizing the relevant concepts and principles could have enabled some participants to better develop their conceptual understanding and subsequent performance of the target structures.  However unlike the utilized moves of mediation, this would have produced large amounts of qualitative data which would be difficult to compare across groups in a standardized way.  A subjective rating scale which categorized and scored participants' conceptual understandings would have needed to be developed.  Although more challenging, this approach would have provided a deeper understanding of how having conceptual understanding of the target structures relates to their self-regulation.

A transfer task could have been utilized.  The data only provide evidence of linguistic development in the contexts provided by this study; there is limited evidence that the participants' performance of the target structures is permanent, stable, or transferable.  In my experience, generalizing from tests is problematic as often learners perform well in an inauthentic testing context, yet fail to use the target language correctly in an authentic context.  Transcendence relates to an individual's ability to transfer and re-contextualize knowledge which has been internalized to a more complex and demanding task.  Vygotsky (1994) explains that conclusions about a learner's ability are confirmed when they are able to transfer their abilities to similar tasks, "even when external conditions have changed radically" (p.66).  Thus, transcendence can aid in the evaluation of whether internalized cultural artefacts have been "appropriated and reshaped to meet the needs of the individual" (Lantolf & Poehner, 2014, p.45).  A transfer task, for example providing an opportunity to use the target structures within a less prescriptive writing or speaking task, would have assisted in determining the extent to which the participants could extend and

recontextualize their performance of the target structures. "A crucial issue that has been eluding Sociocultural SLL researchers remains inconclusive: is it possible to claim that the L2 change observable during interaction becomes internalized?" (Gánem-Gutiérrez, 2008, p.145). The failure to employ a transfer task does not help this study to resolve this issue.

The quantitative data has limited content validity. The domain that this study seeks to measure is linguistic knowledge of a second language. In this study, linguistic knowledge is conceptualized as being able to produce the structure of the simple past passive and the structure of the present continuous passive at the sentence level. However, these two structures do not represent the linguistic knowledge of a second language. By choosing two forms of the passive voice, all other aspects of the English language linguistic system have been side-lined. Furthermore, the two forms of the passive voice chosen have been carefully controlled. This neglects the range of structures that the passive voice is capable of forming (e.g., modal passives). Overall, the two target structures that the participants produced are a partial representation of the passive voice; the passive voice, in turn, is a partial representation of L2 knowledge.

The testing procedure used within this study lacks macro validity. Macro validity is specific to dynamic assessment. The concept of macro validity "examines the DA procedure as a whole and poses the question, how successful was this interaction in revealing and promoting learner abilities?" (Poehner, 2011, p.256). If a dynamic assessment procedure has high levels of macro validity, then as well as revealing learner abilities it will also promote them. The effectiveness of the mediation given during testing in promoting learner development is reflected in the median score differences of the control group (see table 27).

Table 27

*Median score differences for the control group*

| Target Structure | Pretest-Posttest | | Posttest-Delayed Posttest | |
|---|---|---|---|---|
| | *Mdn* | *Range* | *Mdn* | *Range* |
| Simple Past Passive | 0 | 7 | 0 | 6 |
| Present Continuous Passive | 0 | 3 | 0 | 4 |

The median score differences for the control group show no group-level development.  During the study the participants of the control group only registered gains in performance twelve times (see *section 5.3.1*).  The data suggest that the variant of dynamic assessment used within this study did not promote learner development.  Consequently, the data suggest that the variant of dynamic assessment used within this study lacks macro validity.

This study's conceptualization of dynamic assessment did not realize the full dialectical potential of the ZPD.  Vygotsky advocated that "all phenomena be studied as processes in motion and change" (Vygotsky, 1978, p.6-7).  By extension, Poehner (2008, p.46) identifies that most proponents of dynamic assessment share the assumption that cognitive abilities are amenable to change if appropriate opportunities are provided.  This study also shares this underlying commitment.  Inherent within this study is the belief that human characteristics are constantly in a state of development.  However, Poehner (2007) explains that "any interest in comparing an individual's performance on a given occasion to a set of standards or the performance of others in a population is superseded by the primary goal of promoting learner development" (p.337).  However in this study, the goal of development was subordinated to the goal of measurement.  Consequently, this study is an example of how employing the concept of interventionist dynamic assessment to measure learners' emergent abilities does not realize the full dialectical potential of the ZPD.  An alternative to *interventionist* dynamic assessment is *interactionist* dynamic assessment (see *section 3.2.1*).  The use of interactionist dynamic assessment would have produced non-standardized data which is difficult to compare; however, the use of *interactionist* dynamic assessment would have meant that the mediation given could have been continually adjusted to meet the needs of the participants.  Additionally, its use would have

provided a deeper understanding of each participant's emergent performance and subsequent linguistic development.  Throughout the study, a balance was sought between experimental control and the educational philosophies which underpin Vygotskian sociocultural theory; increased experimental control usually came with a reduction in the capacity to promote linguistic development.

*7.3.3 Treatment tasks*

Limitations exist with the construction and administration of the treatment tasks.

The mediational means embedded within each treatment task did not optimally develop the participants' conceptual understanding of the target structures.  The treatment tasks were intended to provide learners with an opportunity to produce the target structures and in doing so consciously reflect on the grammatical accuracy and the meaning of their language use.  Wells (1999b) explains that "the learning which takes place through task-related action in the ZPD tends to be specific to the activities in which the participants are involved" (p.249).  As the treatment tasks are based upon form-focused writing tasks, they are primarily designed to develop learners' ability to write the form of the target structures rather than develop learners' conceptual understanding of the passive voice.  Consequently, it can be argued that the pedagogical unit of this study was more *form* orientated, as opposed to being more *conceptually* orientated.  Conceptually orientated instructional approaches exist.  Based upon the Vygotskian construct of Concept Based Instruction (Vygotsky, 1986), Negueruela and Lantolf (2006) have proposed an instructional approach for L2 learning in which: the minimal pedagogical unit is the concept; concepts are materialized through diagrams or charts; and pedagogical concepts are verbalized.  Researchers who have employed Concept Based Instruction include Gánem-Gutiérrez and Harun (2011), Knouzi et al. (2010), Negueruela and Lantolf (2006), and Swain et al. (2009).  In the present study, the treatment tasks could have adhered more closely to the principles of Concept Based Instruction; for example, the guided learning tasks could have contained visual representations of the target structures as well as eliciting more discussion of the relevant concepts.  This approach could have better promoted linguistic

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development at the group level as well as resulting in a deeper understanding of how conceptually understanding the target structures relates to their self-regulation.

The participants were primarily concerned with reaching a correct answer as efficiently as possible. As previously explained, the participants were not provided with training on how to mediate. As a result, the interaction between the participants was more akin to ad hoc scaffolding than intentional mediation. Providing training on how to mediate would have improved the quality of the participants' interactions and better promoted linguistic development at the group level.

Some of the vocabulary used within the treatment tasks was problematic. Although the vocabulary used in the treatment tasks was within the first three thousand words of the British National Corpus/Corpus of Contemporary American English (BNC/COCA), evidence exists that some of the participants were not familiar with some of the vocabulary words. For example when participants 11 and 12 completed the present continuous text-editing task, the words 'feed', 'onto', and 'observing' were queried (Appendix BB). Due to their limited lexical repertoire, some participants may have had problems accessing the target structures. If the treatment tasks had only contained vocabulary from the first two thousand words of the British National Corpus/Corpus of Contemporary American English (BNC/COCA), then some of the participants would have been able to better access the target structures.

The Hawthorne Effect may have influenced the findings. The Hawthorne Effect occurs when "psychological effects arise out of mere participation" (Cohen et al, 2007, p.156). Four participants were audio-recorded as they completed each treatment task. These participants were recorded in an empty classroom. Removing these participants from the classroom when administering the treatment tasks may have induced the Hawthorne Effect. The change of setting and the introduction of a researcher may have appeared staged and unnatural; thus, the participants could have been more motivated to successfully complete the treatment tasks. Foster and Ohta (2005) explain that for researchers who employ a sociocultural framework, "preserving the integrity of environments and

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the people and interactions embedded in them are critical, as these work to form any development that occurs" (p.403). Relocating participants to an unused classroom may have compromised the data's authenticity.

The post-task feedback was not controlled for. For each task, the classroom teacher was instructed to go through the answers with the whole class and provide supplementary explanations when the need arose. I was not present when this feedback took place and this feedback was not audio-recorded. Thus, the post-task feedback given to the experimental and comparison groups could have differed substantially.

*7.3.4 Data analysis*

Data analysis limitations also exist.

Caution needs to be exercised when interpreting the results of the statistical analysis. A type II error occurs when a null hypothesis is supported when it is not true. In this study, there are two concerns which may give rise to a type II error. Firstly, this study has a sample of 52. A statistically significant result can be obtained either by "having a large coefficient together with a small sample or having a small coefficient together with a larger sample" (Cohen et al., 2007, p.520). The small sample size limited the power of the statistics; only the strongest effects were detected. Repeating this study with a larger sample size may result in emergence of statistically significant differences between treatment conditions of working collaboratively and working individually. Secondly, as the Mood's median test is more conservative in comparison to other statistical tests (e.g., Kruskal-Wallis test), it may miss statistically significant differences that other tests may find. Different statistical tests applied in different ways may have found more significant differences. However, the data was not fished for *p*-values. Norris (2015) explains that "the goal of our research probably should not be to go fishing across procedures until we "achieve statistical significance," rather it should be to reveal the realities of our data" (p.119).

The transcripts provide an incomplete picture of the interaction which occurred between the participants. The transcription of the data did not include suprasegmentals (e.g., intonation, stress and rhythm) and temporal aspects (e.g., pauses, restarts, and speaker overlap). Due to the financial resources required, this level of transcription was beyond the scope of this study. Additionally, in order to make the data collection less threatening and encourage participation, the participants were not video-recorded as they completed the treatment tasks. However, the use of video recording would have assisted in the identification of private speech and other forms of regulation by providing information pertaining to deixis as well as nonverbal communication (e.g., gestures, eye movement, and facial expressions).

The LREs selected and presented in the findings section may not be representative of participant 11's linguistic development. Due to space considerations, it was not possible to present and discuss all of participant 11's LREs which pertained to the structure of the present continuous passive. Thus, the LREs which have been presented are a snapshot of his journey. Additionally, participant 11's covert activity which took place within his intramental plane cannot be adequately represented in the data. Consequently, the microgenetic journey presented within the findings section is incomplete and the accompanying commentary should be considered with caution.

The microgenetic analysis did not taken into consideration the overlap of linguistic features between the target structures. The two target structures share some of the same parts of speech which are used in the same way (i.e., past participle and the preposition 'by'). Because the sequence of the treatment sessions alternated between target structures, the participants continually received input on shared linguistic features. Therefore, participants could use information learned from one target structure to improve their performance of the other target structure. However due to space considerations, the microgenetic analysis exclusively analysed one target structure. Analysing each target structure exclusively neglects to acknowledge the conceptual and performance gains which may have occurred due to shared linguistic features. Therefore, the microgenetic analysis neglected to take into account improvements in performance which may have occurred as a result of

overlapping linguistic features.  This observation illustrates Norris and Ortega's (2000) recommendation that SLA researchers should "[u]tilize simple designs that investigate only a few variables at most; interactions of variables should be investigated systematically across multiple experiments, not within single experiments" (p.497).

*7.4 Future research*

Replication could augment the findings of the present study.  Replicating this study in its current format would provide a better understanding of whether its findings are reliable and generalizable.  As well as replicating the study in the same context using a larger sample size, the following variables could be altered: target structure, gender, age, L1, proficiency levels, educational setting.

The design of this study could be improved in five main ways.  Firstly, the design could be simplified.  Only one target structure could be used.  This would halve the number of test items and treatment tasks, resulting in a higher percentage of participants completing the study, which in turn would improve the statistical power of the inferential statistics.  Additionally, only using one target structure would remove the overlap of linguistic features between the target structures.  Secondly, the testing time could be longer than five minutes. A longer testing time would enable more participants to complete the tests within the allotted time.  Additionally, more time would allow the participants to better comprehend the scenario that each test item creates and better process the moves of mediation.  More time also gives rise to the possibility of multiple measures of performance being obtained as well as the use of distractor test items.  Thirdly, the tests could be adapted and administered in a computerized format.  The employment of computerized dynamic assessment would allow the tests to be administered in a standardized way with very large numbers of learners.  Fourthly, the tests and treatment tasks could be replaced by tasks in which the unit of instruction is conceptually orientated rather than form orientated.  During testing, interactionist dynamic assessment could be employed to better understand and promote learners' conceptual understandings.  In order to quantify the participants' explanations, a subjective

rating scale which categorizes and scores participants' conceptual understandings would need to be developed. A transfer task could also be added. Furthermore, the treatment activities could be based upon the Vygotskian construct of Concept Based Instruction (Vygotsky, 1986). Fifthly, the tests and the treatment tasks could be video-recorded. This would provide access to paralinguistic information and allow for stimulated recall. Admittedly, some of the suggested improvements are contradictory; however, their implementation is discretionary.

Other areas of investigation arise. Firstly, learners' use of discourse markers could be further investigated. This study has shown how discourse markers are an important regulatory mechanism. Further research could be carried out which aims to understand how the employment of these cognitive tools mediates language learning and whether their use can be taught. Secondly, the quantitative data shows a high level of individual variation. Using a Vygotskian sociocultural lens to investigate how individual differences relate to working collaboratively may yield unique insights. Thirdly, the efficacy of collaborative learning could potentially be enhanced or diminished when combined with other components of instruction. Future research could respond to where, how, and with whom collaborative learning is most effective. Finally, the test scores of some participants remained unchanged or even declined. Of the four core participants who were audio recorded, one participant was unable to write either of the target structures on either of the posttests even with the aid of the moves of mediation. Assuming that this participant's neurology and socio-historic conditions are roughly similar to the other participants, microgeneticly analysing and publishing this participant's journey would contribute to an understanding of why collaborative learning is more effective for some learners than others.

*7.5 Final thought*

This study has shown the potential of a mixed-methods design which draws upon the Vygotskian sociocultural methodologies of the genetic method and dynamic assessment. The unique design of this study has given a unique understanding of language learning as a socially mediated process for

undergraduate L2 learners who are situated in Qatar and shown that peers can play an influential role in the process of second language learning.

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## Appendices

*Appendix A: Aljaafreh and Lantolf's thirteen-point regulatory scale*

0. Tutor asks the learner to read, find the errors, and correct them independently, prior to the tutorial.

1. Construction of a "collaborative frame" prompted by the presence of the tutor as a potential dialogic partner.

2. Prompted or focused reading of the sentence that contains the error by the learner or the tutor.

3. Tutor indicates that something may be wrong in a segment (e.g., sentence, clause, line) – "Is there anything wring in this sentence?"

4. Tutor rejects unsuccessful attempts at recognizing the error.

5. Tutor narrows down the location of the error (e.g., tutor repeats or points to the specific segment which contains the error).

6. Tutor indicates the nature of the error, but does not identify the error (e.g., "There is something wrong with the tense marking here").

7. Tutor identifies the error ("You can't use an auxiliary here").

8. Tutor rejects learner's unsuccessful attempts at correcting the error.

9. Tutor provides clues to help the learner arrive at the correct form (e.g., "It is not really past but something that is still going on").

10. Tutor provides the correct form.

11. Tutor provides some explanation for use of the correct form.

12. Tutor provides examples of the correct pattern when other forms of help fail to produce an appropriate responsive action.

(Aljaafreh & Lantolf, 1994, p.471)

*Appendix B: Review of studies which sought to provide empirical evidence of the link between peer interaction and grammatical outcomes*

| Year | Reference | Approach used | Dependent Variable(s) relating to grammar | No. of Participants | Description of study | Duration of study | Findings |
|------|-----------|---------------|-------------------------------------------|---------------------|----------------------|-------------------|----------|
| 1998 | Swain, M., & Lapkin, S. (2002). Talking it through: Two French immersion learners' response to reformulation. *International Journal of Educational Research, 37*, 285-304. | To test linguistic features that the learners discuss during the treatments sessions using tailor made posttests. | morphology, syntax | 2 | Two grade 8 French immersion students carried out a jigsaw task. During the task, the students worked out a story line and wrote it out. As they did so, | 5 weeks | The results show how the participants co-constructed linguistic knowledge. Their dialogue served as a tool for both L2 learning and communication. |

| | | | | | they encountered linguistic problems. To solve them, the students worked collaboratively together. | | |
|---|---|---|---|---|---|---|---|
| 1999 | Storch, N. (1999). Are two heads better than one? Pair work grammatical accuracy. *System, 27*(3), 363-374. | To compare collaboratively written texts with individually written texts. | articles, verb tense/aspect choice and formation, derivational morphology, and nominal morphology | 11 | Participants completed three different types of grammar-focused exercises: a cloze exercise, a text reconstruction and a short | 2 days | A comparison of exercises completed individually with those completed in pairs suggested that collaboration had a positive effect on overall grammatical accuracy, but tended to vary with specific grammatical items. |

| | | | | | composition. Each exercise type had two isomorphic versions, one was completed individually and the other was completed in pairs. | | |
|---|---|---|---|---|---|---|---|
| 2000 | Spielman-Davidson, S. J. (2000). *Collaborative dialogues in the zone of proximal development, grade eight French immersion students learning the conditional tense.* | To compare the pretest and posttest results of individual task completion with collaborative | present conditional | 8 | This descriptive classroom-based study involved a pretest – posttest - delayed | 16 weeks | The experimental group outperformed the comparison group in the posttests. In addition, tailor-made test items based on each dyad's |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Unpublished doctoral dissertation, Ontario Institute for Studies in Education of the University of Toronto. | task completion.<br><br>To test linguistic features that the learners discuss during the treatments sessions using tailor made posttests. | | | posttest design, with a experimental group and a comparison group. Participants completed 16 hours of instructional intervention which included: writing a draft of a plan, editing the draft and revising it, and completing a content related | | dialogues were designed. Results from the tailor-made posttest items also indicated that gains were maintained. The findings suggest that during collaborative dialogue learners are able to provide their partners with positive input and negative feedback. |

| | | | | | dictogloss task.  The pretests and posttest included: a close test, a paragraph writing exercise, and interviews. | | |
|---|---|---|---|---|---|---|---|
| 2001 | Williams, J. (2001). The effectiveness of spontaneous attention to form. *System, 29*(3), 325-340. | To test linguistic features that the learners discuss during the treatments sessions using tailor made | a wide range of grammatical features | 8 | This study explored episodes of classroom interaction in which there is unplanned attention to form. Data consisted of | 8 weeks, tailor made posttest were administered every 2 weeks | Results indicate that, in most cases unplanned attention to form in is related to accurate performance on a subsequent test. Results suggest participating in interactions that |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | posttests. | | | periodic recordings of learners in intensive English classes over a period of 8 weeks, as well as periodic testing of forms that emerged as a focus of attention during these episodes. | | focus on form have an important role to play in promoting the establishment of form-meaning connections. |
| 2002 | Kuiken, F., & Vedder, I. (2002). The effect of interaction in acquiring the grammar of a | To compare the pretest and posttest results of | passive voice | 34 | The experimental group was given two | 14 days | The quantitative analysis of the data shows that the opportunity for |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | second language. *International Journal of Educational Research, 37*(3), 343-358. | individual task completion with collaborative task completion. | | | dictogloss tasks, which consisted in the reconstruction in small groups of two texts. The control group was submitted to the same tasks, but this time the students had to reconstruct the texts individually. | | interaction during the reconstruction phase did not result in a better score on the detection test nor in a more frequent use of the passive in the reconstructed texts. However, the qualitative analysis reveals that interaction often stimulated noticing of the passive forms. |
| 2002 | Lapkin, S., Swain, M., & Smith, M. (2002). Reformulation and the | To explore whether linguistic | pronominal verbs (reflexive, reciprocal, | 8 | Participants worked in pairs to | 10 days | The results provide evidence that most learners progressed |

| | | learning of French pronominal verbs in a Canadian French immersion context. *The Modern Language Journal, 86*(4), 485-507. | features that the learners discussed during treatments sessions carry over into individual performance. | intrinsic, passive) | | complete a multistage task. Each pair wrote a story, noted differences between their text and a reformulator's revision of that text, and reflected on their noticing. | | in their correct use of pronominal verbs in French, suggesting that socially co-constructed knowledge can be used by individuals in order to develop their L2. |
|------|------|------|------|------|------|------|
| 2002 | Swain, M., & Lapkin, S. (2002). Talking it through: Two French immersion learners' response to reformulation. *International Journal of* | To explore whether linguistic features that the learners discussed during | article gender, possessive pronoun/article, preposition, preposition + article, pronoun reference, | 2 | Participants worked in pairs to complete a multistage task. Each pair wrote a | 11 days | The findings suggest that reformulation of learners' writing is an effective technique for stimulating noticing and reflection on |

| | | | | | | |
|---|---|---|---|---|---|---|
| | *Educational Research, 37*, 285-304. | treatments sessions carry over into individual performance. | sentence structure, pronominal verb, verb form | | story, noted differences between their text and a reformulator's revision of that text, and reflected on their noticing. | | language. This is due to the various stages of the task providing numerous opportunities for collaborative dialogue. Multiple opportunities to "talk it through" meant that the learners could reflect on the language point in question and come to a deeper understanding. |
| 2005 | Malmqvist, A. (2005). How does group discussion in reconstruction tasks affect written language | To compare collaboratively written texts with individually | noun phrase, verb phrase, subordinate clauses | 12 | The study investigated the effects of group interaction on | 3 x 25-30 minute sessions over a two week period | The analysis of the data demonstrated that group discussions on text reconstruction tasks |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | output? *Language Awareness, 14*(2-3), 128-141. | written texts. | | | written German output employing the dictogloss technique. Three short texts were selected for reconstruction, the first and third ones individually, and the second one collectively. | | do affect written language output. Not only were the collaboratively produced texts longer and more detailed than the individually reconstructed ones, but they were also syntactically more complex. |
| 2005 | Storch, N. (2005). Collaborative writing: Product, process, and students' | To compare collaboratively written texts with | the proportion of error-free clauses of all clauses and the number of | 23 | Participants were given a choice to write in pairs or | one lesson (exact duration unknown) | The study found that pairs produced shorter but better texts in terms of task |

| | | | | | | |
|---|---|---|---|---|---|---|
| reflections. *Journal of Second Language Writing, 14*(3), 153-173. | individually written texts. | errors per word. Errors included syntactical errors and morphology | | individually. Although most chose to work in pairs, some chose to work individually. All pair work was audiotaped and all completed texts collected. The study compared texts produced by pairs with those produced by individual learners and investigated | | fulfilment, grammatical accuracy, and complexity. Collaboration afforded students the opportunity to pool ideas and provide each other with feedback. |

| | | | | | the nature of the writing processes evident in the pair talk. | | |
|------|------|------|------|------|------|------|------|
| 2005 | Tocalli-Beller, A., & Swain, M. (2005). Reformulation: The cognitive conflict and L2 learning it generates. *International Journal of Applied Linguistics, 15*(1), 5-28. | To explore whether linguistic features that the learners discussed during treatments sessions carry over into individual performance. | pronominal verbs | 12 | Through a pre-test and post-test design, learners participated in a multi-stage task that provided them with the opportunity to discuss the reformulation of a text they had written. | 4-6 days | The results suggest that discussing a reformulation of their own writing in pairs presents learners with cognitive conflicts which prompt the students to articulate differences between the two texts and discuss the reformulation, thus providing opportunities for |

| | | | | | | | learning. |
|---|---|---|---|---|---|---|---|
| 2007 | Storch, N. (2007). Investigating the merits of pair work on a text-editing task in ESL classes. *Language Teaching Research, 11*(2), 143-159. | To compare collaboratively written texts with individually written texts. | verb tense/aspect, verb form, articles (definite/indefinite), word forms, pronouns, prepositions | 66 | This study investigated the merits of pair work by comparing pair and individual work on an editing task and by analysing the nature of pair interaction. The study was conducted in four intact ESL tertiary classes. Students in class A | 30 minutes | Analysis of the edited texts showed that there were no significant differences between the accuracy of tasks completed individually and those completed in pairs.  Thus the results suggest that although pair work on a grammar-focused task may not lead to greater accuracy in completing the task, pair work provides learners with |

| | | | | | | completed the task in pairs and in class B individually. In classes C and D students were given the choice of completing the task in pairs or individually. | | opportunities to use the second language for a range of functions, and in turn for language learning. |
|---|---|---|---|---|---|---|---|---|
| 2007 | Adams, R. (2007). Do second language learners benefit from interacting with each other. In A. Mackey (Ed.), *Conversational interaction in second language acquisition* | To test linguistic features that the learners discuss during the treatments sessions | past tense, question formation, locative preposition collocations, and a wide range of grammatical features (tailor | 25 | Participants completed three interaction sessions with other learners. Each session contained | 12 days | The results indicate that feedback episodes in learner-learner interactions did lead to learning of forms. These findings suggest that feedback episodes |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (pp. 29-51). Oxford: Oxford University Press. | using tailor made posttests. | made posttests) | | three collaborative oral tasks, one targeted at each of the structures. These sessions were audio-recorded.  In order to trace the language discussed with their peers, each learner completed a tailor-made post-test which consisted of | | in learner-learner interactions and in native speaker-learner interactions are similar in their effectiveness in facilitating learning. |

| | | | | | two types of items (acceptability judgment tests and picture labelling items). | | |
|---|---|---|---|---|---|---|---|
| 2008 | Eckerth, J. (2008). Investigating consciousness-raising tasks: Pedagogically targeted and non-targeted learning gains. *International Journal of Applied Linguistics, 18*(2), 121-145. | To compare the pretest and posttest results of collaborative task completion.  To test linguistic features that the learners discuss | transitive prepositional verbs, passive voice, reflexive prepositional verbs, | 31 | The investigation sought to measure learning gains in the short and medium term by a pretest, posttest, and delayed posttest design. In | 5 x 8 day cycles over a total period of 5 weeks | The results regarding pedagogically targeted L2 features indicate significant learning gains in the short and medium term. Eckerth concluded that learners are able to provide each other with feedback rich in acquisitional |

| | | during the treatments sessions using tailor made posttests. | | | order to capture the full spectrum of learning opportunities two test formats were developed: a priori constructed tests that covered those L2 features focused on by the tasks, and a posteriori tests which were based on a retrospective analysis of | | potential. |
|---|---|---|---|---|---|---|---|

| | | | | | learners' task-based interactions. | | |
|---|---|---|---|---|---|---|---|
| 2009 | Wigglesworth, G., & Storch, N. (2009). Pair versus individual writing: Effects on fluency, complexity and accuracy. *Language Testing, 26*(3), 445-466. | To compare collaboratively written texts with individually written texts. | fluency (average number of words, T-units, and clauses per text), complexity (proportion of clauses to T-units), accuracy (percentage of error free T-units and clauses) | 144 | This study compared the performance of two groups of second language learners: one group worked individually, and the other group worked in pairs. When writing in pairs, each pair produced a single argumentative | 60 minutes for pairs, 40 minutes for individuals | This comparison revealed that collaboration impacted positively on accuracy, but did not affect fluency and complexity. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | essay. | | |
| 2009 | Reinders, H. (2009). Learner uptake and acquisition in three grammar-oriented production activities. *Language Teaching Research, 13*(2), 201-222. | To compare the pretest and posttest results of individual task completion with collaborative task completion.<br><br>To compare collaboratively written texts with individually written texts. | negative adverbs | 28 | Participants completed the three production activities: dictation, an individual reconstruction, and a collaborative reconstruction activity. Each of these asked participants to produce the target structure but differed in | 4 weeks | The results of this study show that the collaborative reconstruction group outperformed the individual reconstruction group on uptake of negative adverbs. However, there was no difference between the tasks on acquisition. |

| | | | | | whether the activity was completed individually or collaboratively, the amount of text participants had to produce, and their degree of complexity and cognitive demand. | | |
|---|---|---|---|---|---|---|---|
| 2010 | Nassaji, H., & Tian, J. (2010). Collaborative and individual output tasks and their effects on learning English phrasal | To compare the pretest and posttest results of individual task completion | phrasal verbs | 26 | This study examined and compared the effectiveness of two types of output tasks | 2 x 6 day cycles over a total period of 2 weeks | Completing the tasks collaboratively (in pairs) led to a greater accuracy of task completion than completing tasks |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | verbs. *Language Teaching Research, 14*(4), 397-419. | with collaborative task completion.<br><br>To compare collaboratively written texts with individually written texts. | | | (reconstruction cloze tasks and reconstruction editing tasks) for learning English phrasal verbs. | | individually. However, collaborative tasks did not lead to significantly greater gains of vocabulary knowledge than individual tasks. |
| 2012 | Dobao, A. F. (2012). Collaborative writing tasks in the L2 classroom: Comparing group, pair, and individual work. *Journal of Second Language Writing, 21*(1), 40-58. | To compare collaboratively written texts with individually written texts. | fluency (number of words per clause, number of words per T-unit, and number of clauses per T-unit) and accuracy (the ratios of error-free clauses to total | 111 | This study compared the performance of the same writing task by groups of four learners, pairs, and individual learners. It | 30 minutes | The findings indicate that collaboration, whether in pairs or in small groups, resulted in greater grammatical and lexical accuracy. Although group work offered fewer |

| | | | clauses, error-free T-units to total T-units, and errors to words) | | examined the effect of the number of participants on the fluency, complexity, and accuracy of the written texts produced, as well as the nature of the oral interaction between the pairs and the groups as they collaborate throughout the writing process. | | opportunities for individual participation, it had a positive impact on collaborative dialogue. Learners working in small groups paid more attention to language and were more successful at solving language-related problems than learners working in pairs. |

| 2014 | Dobao, A. F. (2014). Attention to form in collaborative writing tasks: Comparing pair and small group interaction. *Canadian Modern Language Review, 70*(2), 158-187. | To compare collaboratively written texts with individually written texts. | past tense morphology | 144 | This study examined the opportunities that a collaborative writing task completed in pairs and in small groups of four offers for attention to form.  Texts from these two groups were also compared for accuracy. | 50 minutes | Findings indicate that both groups and pairs focused their attention on form relatively often, but groups discussed the past tense more often and were more successful at solving linguistic problems which involved the past tense.  As a result, their texts were more accurate. The findings suggest that groups engaged more elaborately with past tense morphology and that this engagement |

| | | | | | | provided more opportunities for second language learning. |
|---|---|---|---|---|---|---|

*Appendix C: Background questionnaire*

1. Age_____

2. Nationality _____

3. In which country did you go to high school? _____

4. How long have you been studying English? _____

5. Other than English and Arabic, can you speak any other languages?

_____

6. How did you learn English grammar in high school? (you can select more than one answer)

      o   I was not taught English grammar in high school

      o   The teacher told me the grammar rules

      o   My teacher said a sentence and I repeated it

      o   By memorizing the grammar rules

      o   By translating sentences in English to Arabic

      o   By translating sentences in Arabic to English

      o   Through studying the grammar from stories

      o   By figuring out the grammatical rules myself

7. When you were learning grammar in high school, how did you study in class? (you can select more than one answer)

      o   Individually

      o   In pairs

      o   In small groups (3/4 students)

      o   In large groups

      o   As part of a whole class

8. In general, how would you prefer to work?

      o   With other students

      o   Individually

9. How helpful do you think working with other students is for improving your knowledge of grammar?

- o Not helpful
- o Helpful
- o Very helpful
- o Extremely helpful

Why? _____

*Appendix D: Results of background questionnaire*

Question 1

| Age | Number of participants |
|---|---|
| 17-18 | 4 |
| 19-20 | 38 |
| 21-22 | 27 |
| 23-24 | 10 |
| 25-26 | 9 |
| 27-28 | 7 |
| 29+ | 10 |
| Total | 105 |

Question 2

| Nationality | Number of participants |
|---|---|
| Qatari | 81 |
| Jordanian | 7 |
| Yemeni | 6 |
| Sudanese | 3 |
| UAE | 3 |
| Palestinian | 2 |
| Egyptian | 1 |
| Bahraini | 1 |
| Saudi Arabian | 1 |
| Total | 105 |

Question 3

| Country of high school | Number of participants |
|---|---|
| Qatar | 97 |
| Saudi Arabia | 3 |
| UAE | 2 |
| Jordan | 2 |
| Bahrain | 1 |
| Total | 105 |

Question 4

| Number of years studying English | Number of participants |
|---|---|
| below 5 | 7 |
| 5-10 | 22 |
| 11-15 | 59 |
| 16-20 | 7 |
| over 20 | 2 |
| Question unanswered | 8 |
| Total | 105 |

Question 5

| Languages spoken other than English and Arabic | Number of participants |
|---|---|
| Turkish | 7 |
| French | 3 |
| Korean | 1 |
| Hebrew | 1 |
| German | 1 |
| Portuguese | 1 |

Question 6

| How grammar was learned in high school (participants could choose more than one answer) | Number of participants |
|---|---|
| I was not taught English grammar in high school | 15 |
| The teacher told me the grammar rules | 72 |
| My teacher said a sentence and I repeated it | 37 |
| By memorizing the grammar rules | 31 |
| By translating sentences in English to Arabic | 31 |
| By translating sentences in Arabic to English | 25 |
| Through studying the grammar from stories | 19 |
| By figuring out the grammatical rules myself | 15 |

Question 7

| How grammar was learned in high school (participants could choose more than one answer) | Number of participants |
|---|---|
| Individually | 43 |
| In pairs | 23 |
| In small groups (3/4 students) | 44 |
| In large groups | 24 |
| As part of a whole class | 26 |

Question 8

| How participants would prefer to work | Number of participants |
|---|---|
| With other students | 68 |
| Individually | 36 |
| Question unanswered | 1 |
| Total | 105 |

Question 9

| How helpful is working with other students? | Number of participants |
|---|---|
| Not helpful | 14 |
| Helpful | 36 |
| Very helpful | 36 |
| Extremely helpful | 18 |
| Question unanswered | 1 |
| Total | 105 |

| Reasons given |
|---|
| 1. because I can know clear about grammar |
| 2. I don't like to talk to new students. |
| 3. because we share what we know |
| 4. It's hard to concentrate with others. |
| 5. to support each other |
| 6. Because if I didn't understand something other students can help me with it. |
| 7. because when they explain grammar its difficult. |
| 8. because some students don't like to help. |

9. because if there is something I didn't understand it the other one know and will help me to answer the question.

10. When we talk we learn more grammar

11. I can talk to others and listen to them by this way I can gain a lot of words.

12. because I will know from other students who are better than me in the English language.

13. Because we can help each other.

14. maybe I forget some grammar and they help me to remember

15. maybe they know something I don't know

16. Because we are in the same level with some different and everyone get something from the other.

17. Students can help other students.

18. because I learn more with other students

19. because I learn more with other students

20. because if we work as a group we can share information.

21. to share information

22. because I can learn from my friend and my friend can learn from me.

23. maybe they have more info than me

24. They will explain for each other

25. Because sometimes you learn grammar from the students.

26. to help each other

27. They will notice my mistakes.

28. we can help each other

29. maybe the other students can explain to me more

30. learn our mistakes from others

31. to help each other

32. because we can explain in Arabic to understand

33. Because they can learn from each other and test their communication skills.

34. because they will look to the weaker student in English like less intelligent.

35. to get more experience

36. studying with others improves my knowledge of grammar

37. Because sometimes it is easy to work individually.

38. to learn from each other

39. Not everyone has knowledge of grammar and working with others won't mean

better understanding or isn't related to improvemence [sic].

40. they confuse me

41. Because, each student have different level

42. we can help each other.

43. Because many times students answer false so they will be confused.

44. Because we need more information about new words.

*Version 1*

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*



| | | | | | |
|---|---|---|---|---|---|
| a cat walking across a road | + | a car | = | | |
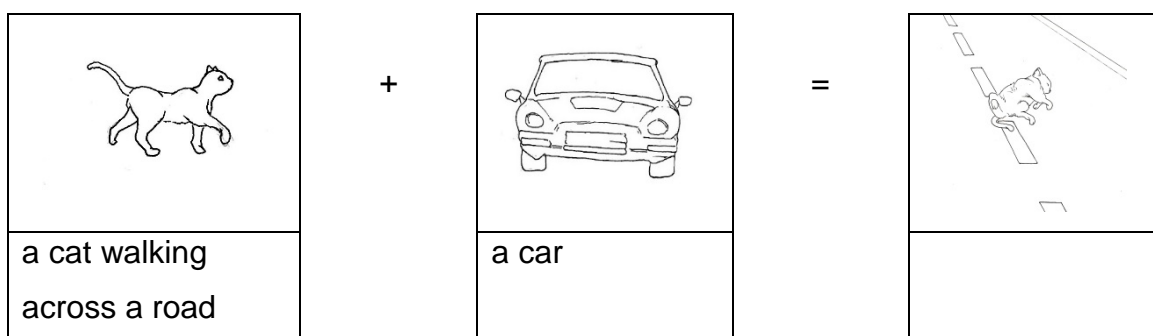
1. Yesterday, a cat was walking across a road. Also, there was a car driving on the road. The car was driving very fast. The car tried to slow down but could not. The car hit the cat. The cat _____ (kill/car). The driver was very sad.



| | | | | | |
|---|---|---|---|---|---|
| a guard | + | a prisoner | = | | |
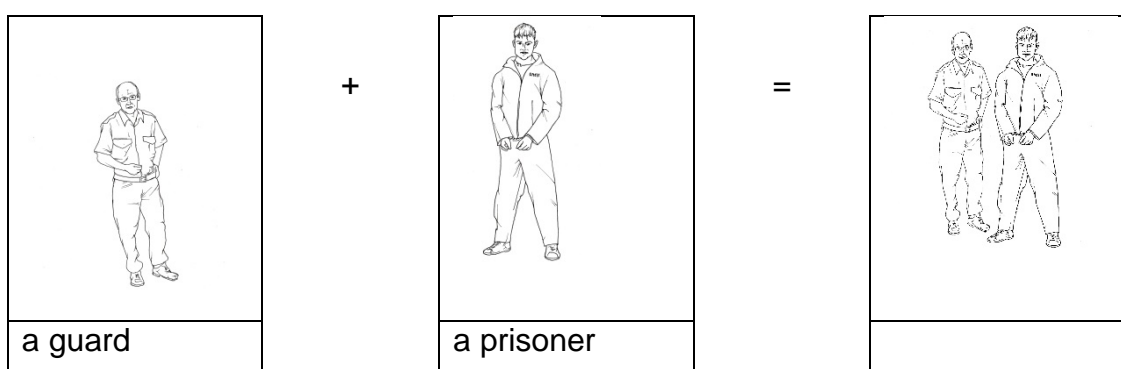
2. Last week, a prisoner was walking outside. The prisoner saw a hole in the fence. The prisoner thought about escaping. However, a guard was nearby. The guard _____ (watch/prisoner). The prisoner did not escape.

| | | | | | |
|---|---|---|---|---|---|
|  | + |  | = |  | |
| an open door | | a security guard | | | |
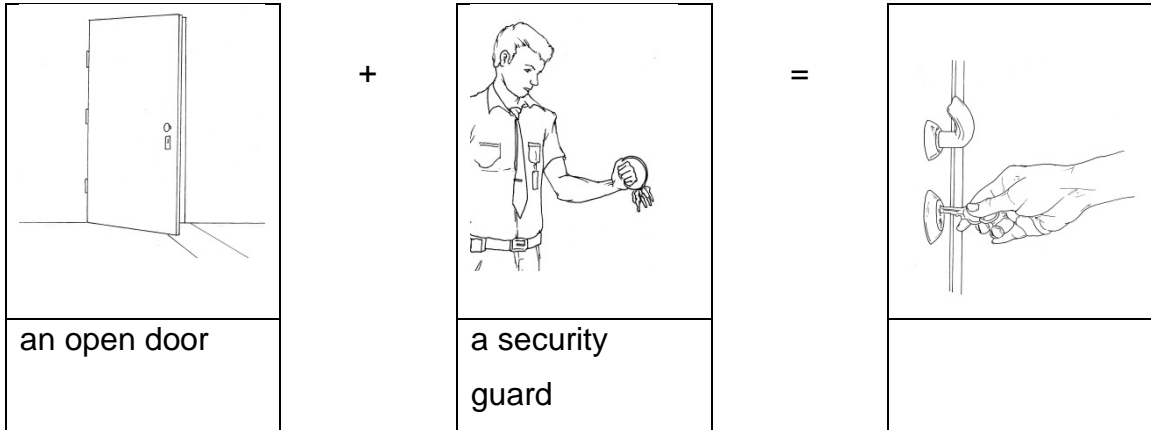
3.  Yesterday, a security guard was walking through the school and saw an open door.  The security guard closed the door.  Then, he took his keys out of his pocket.  The door _____ (lock/security guard).  The children tried to open the door but the door would not open.

| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a chef | | a fish | | |
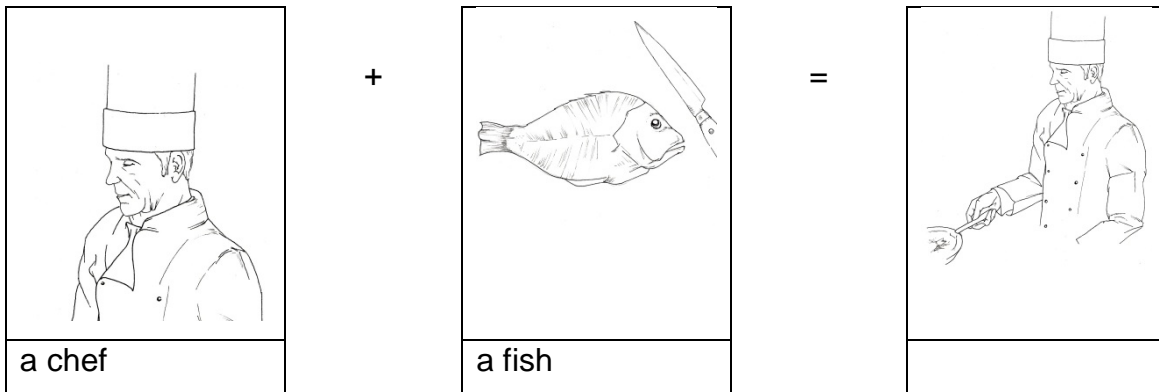
4.  Yesterday, a chef was working in a kitchen.  A customer ordered the fish. The chef put the fish into a hot pan.  The chef turned on the heat.  The chef _____ (cook/fish).  The cooked fish looked delicious.

|  |  |  |  |  |
|---|---|---|---|---|
| <br>a lost child | + | <br>a security<br>guard | = |  |
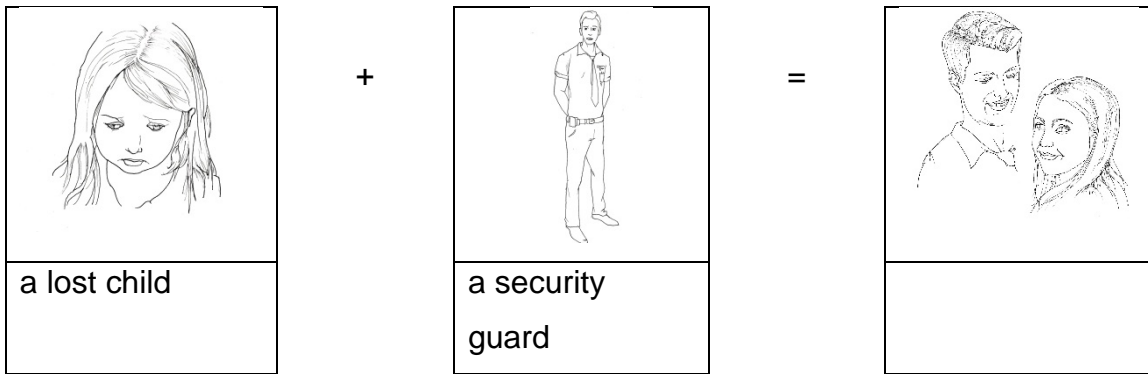
5.  Yesterday, a child was walking through a park.  She was lost and could not find her family.  The child saw a security guard.  The child explained her problem to the security guard.  The child _____ _____(help/security guard).  The child found her family.

|  |  |  |  |  |
|---|---|---|---|---|
| <br>a banker | + | <br>Money | = |  |
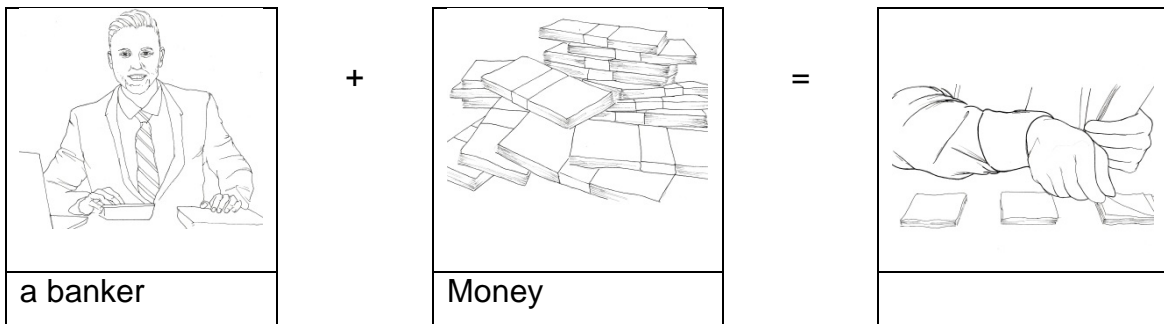
6. Yesterday, a man was standing in a bank.  He was waiting for a banker to give him his money.  Before the banker gave the man his money, he needed to count it.  The banker _____ _____(count/money).  The man thought about what he would buy with his money.

7.  Last lesson, a teacher was teaching his class.  It started to rain.  The window was open.  Some students complained.  The teacher decided to close the window.  The window _____ _____(close/teacher).  The students did not get wet.



| an immigration officer | a passport | |

8.  Yesterday, a woman went to an airport.  The woman went to the immigration desk.  An immigration officer looked at the woman's passport.  Her immigration officer _____ (check/passport).  The immigration officer asked the woman many questions.

| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a cat which is in a tree | | a policeman | | |
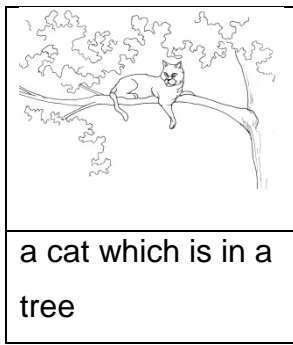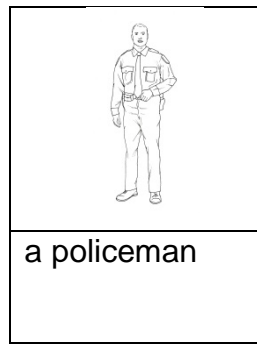
9.  Yesterday, a cat climbed to the top of a tree.  The cat became scared and could not climb down.  The cat started to cry.  A policeman heard the cat.  The policeman climbed the tree and helped the cat.  The cat _____ _____ (rescue/policeman). The owners of the cat were very thankful.

| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a lion | | a woman | | |

10.  Last year, a woman went on holiday to Africa.  She wanted to see lions. Her guide found a lion for her to look at.  The lion did not want to be looked at. The lion bit the woman.  The lion _____ _____(attack/woman).  The woman ran away.

274

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*

| a car which has a problem | + | a mechanic | = | |
|---|---|---|---|---|

1. Last week, a man had a problem with his car. The car would not start. The man took the car to a mechanic. The mechanic knew how to fix the problem. The car _____ _____(repair/mechanic). The man happily drove his car home.
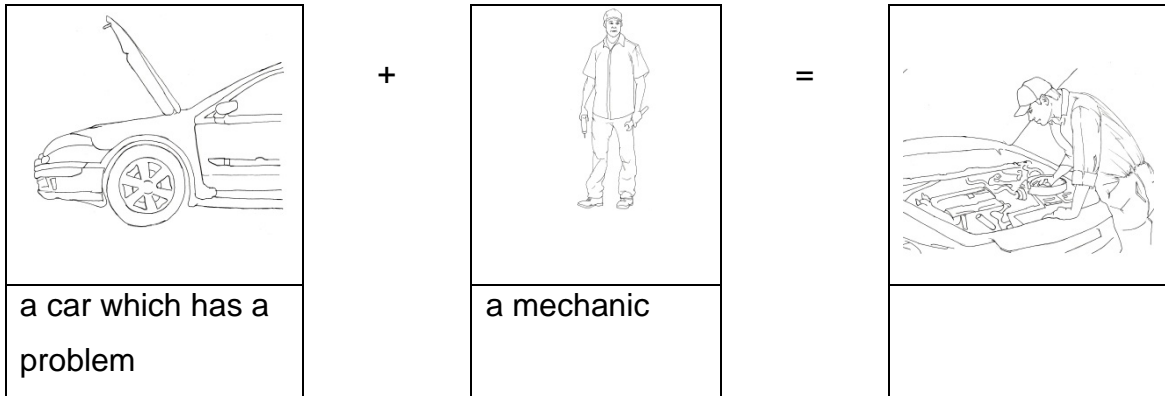
| a car | + | a cat walking across a road | = | |
|---|---|---|---|---|
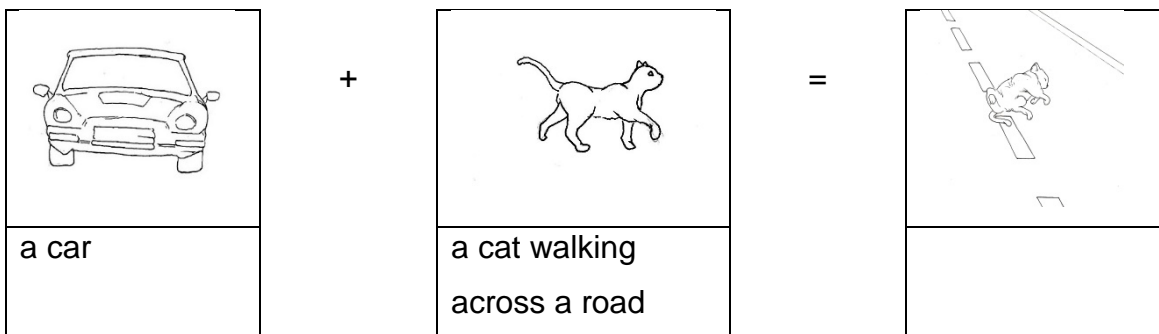
2. Yesterday, a cat was walking across a road. Also, there was a car driving on the road. The car was driving very fast. The car tried to slow down but could not. The car hit the cat. The car _____ _____(kill/cat). The driver was very sad.
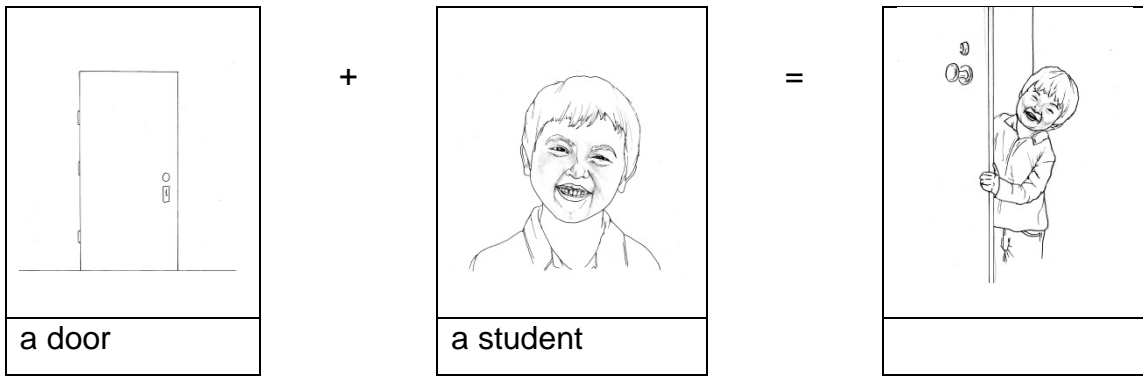
| | | | | |
|---|---|---|---|---|
| <br>a door | + | <br>a student | = |  |

3. Last lesson, a teacher was teaching his class.  The room was very hot because the door was closed.  A student decided to open the door.  The door

_____

(open/student).  Fresh air came into the room.

| | | | | |
|---|---|---|---|---|
| <br>a security<br>guard | + | <br>an open door | = |  |
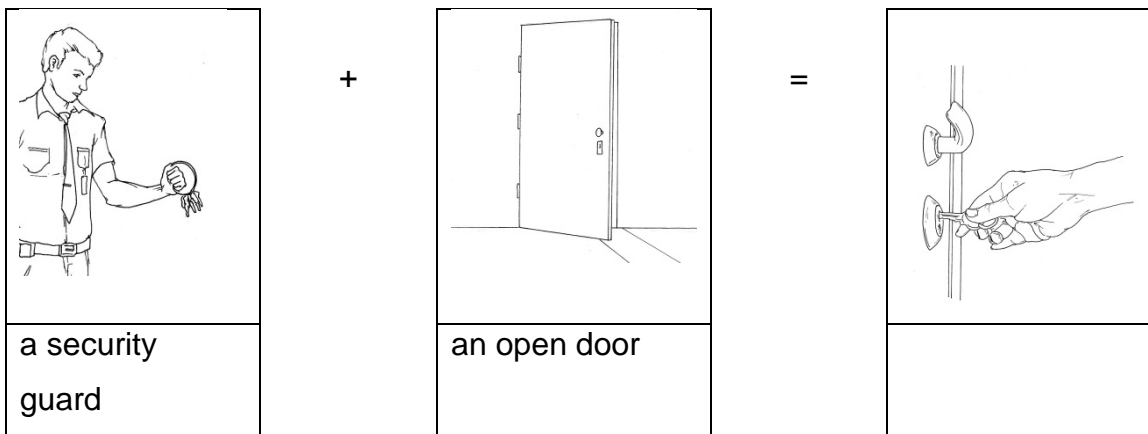
4.  Yesterday, a security guard was walking through the school and saw an open door.  The security guard closed the door.  Then, he took his keys out of his pocket.  The security guard _____

_____(lock/door).  The children tried to open the door but the door would not open.

| | | | | |
|---|---|---|---|---|
| a table with many plates | + | a waiter | = | |
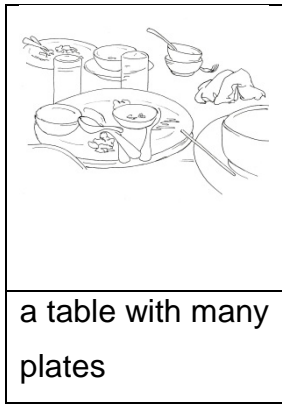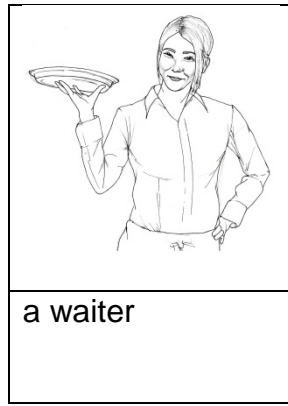
5.  Last night, a family was eating in a restaurant.  The family ate lots of food. There were many plates on the table.  The family asked the waiter to take the plates away.  The table _____ _____(cleared/waiter).  The family thanked the waiter.

| | | | | |
|---|---|---|---|---|
| a security guard | + | a lost child | = | |
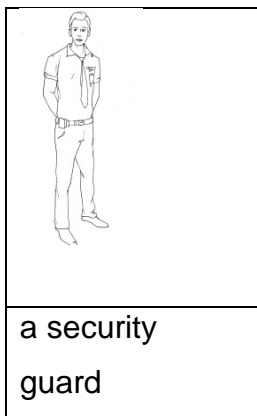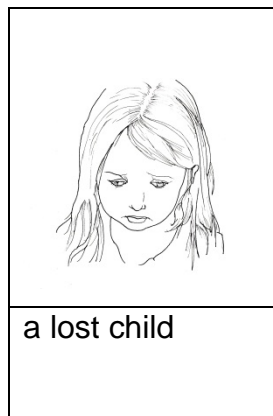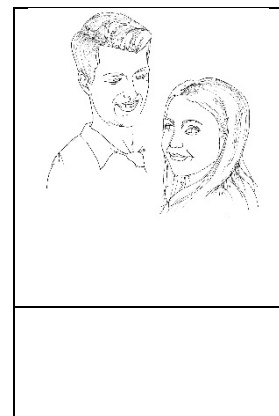
6.  Yesterday, a child was walking through a park.  She was lost and could not find her family.  The child saw a security guard.  The child explained her problem to the security guard.  The security guard _____ _____ (help/child).  The child found her family.

| | | | | |
|---|---|---|---|---|
| an assignment which is on a computer | + | a student | = | |
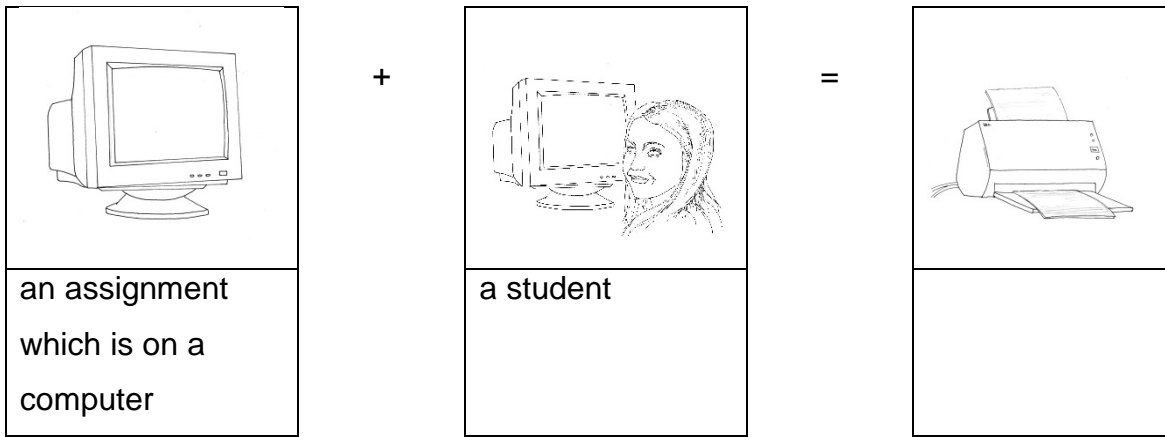
7.  Last night, a student finished her assignment.  She needed to give the assignment to the teacher at the start of her next class.  The student turned on the printer.  The assignment _____ _____(print/student).  The student gave the assignment to her teacher at the start of the next lesson.

| | | | | |
|---|---|---|---|---|
| a teacher | + | an open window | = | |
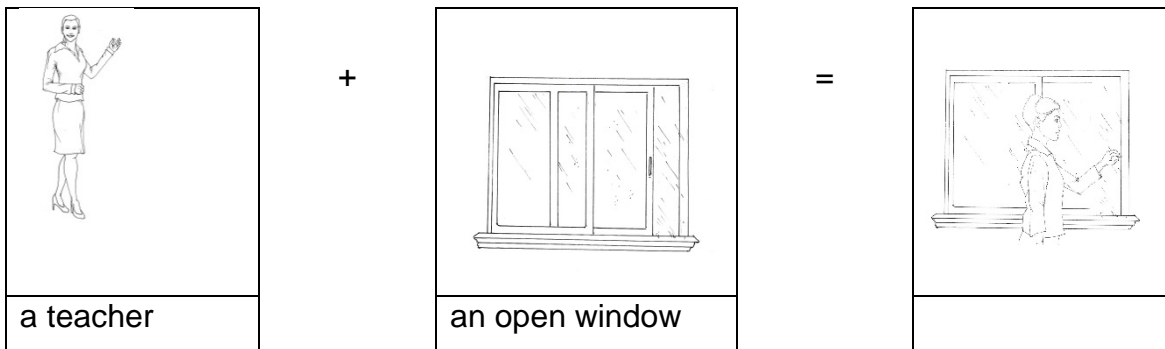
8.  Last lesson, a teacher was teaching his class.  It started to rain.  The window was open.  Some students complained.  The teacher decided to close the window.  The teacher _____ _____(close /window).  The students did not get wet.
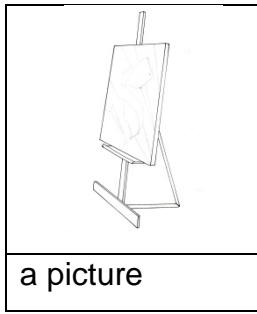
a picture + an artist =

9.  Last year, an artist had an idea.  The artist wanted to paint a picture of the desert.  The artist went to the desert with her equipment.  The artist worked in the desert for many hours.  The picture _____ _____(paint/artist).  The artist sold the picture for 5000 dollars.



a cat which is in a tree + a policeman =
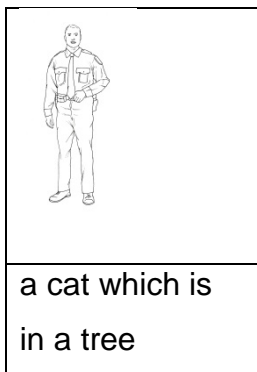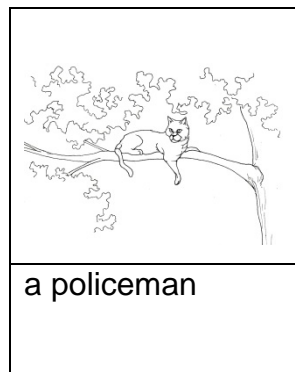
10.  Yesterday, a cat climbed to the top of a tree.  The cat became scared and could not climb down.  The cat started to cry.  A policeman heard the cat.  The policeman climbed the tree and helped the cat.  The policeman _____ _____ (rescue/ cat).  The owners of the cat were very thankful.

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*
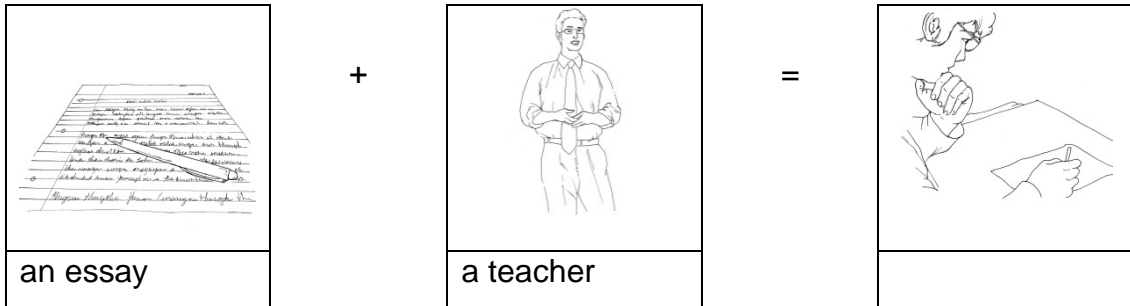


| an essay | a teacher | |
|---|---|---|

1. Last lesson, a student wrote an essay. The essay had 2000 words. The student gave the essay to the teacher. The teacher carefully read the essay. The essay _____ _____(graded/teacher). The teacher gave the essay an A.



| a mechanic | a car which has a problem | |
|---|---|---|
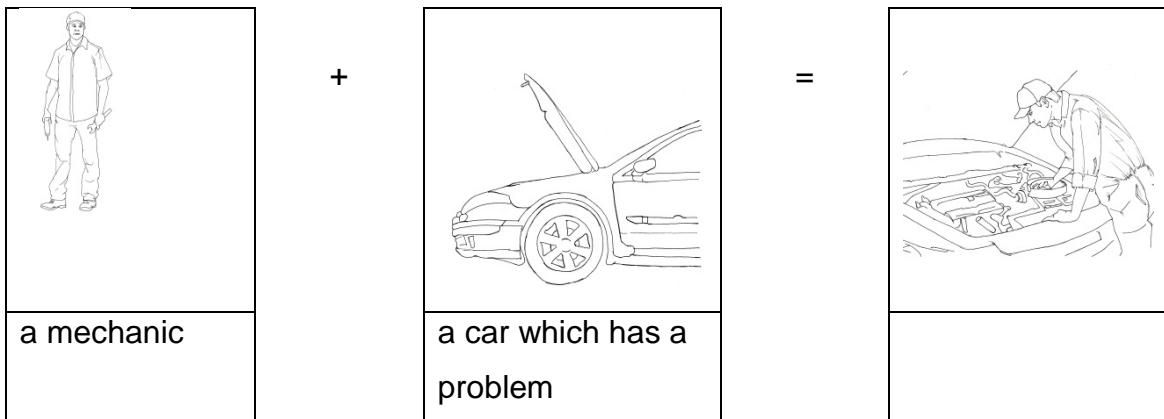
2. Last week, a man had a problem with his car. The car would not start. The man took the car to a mechanic. The mechanic knew how to fix the problem. The mechanic _____ _____(repair/car). The man happily drove his car home.
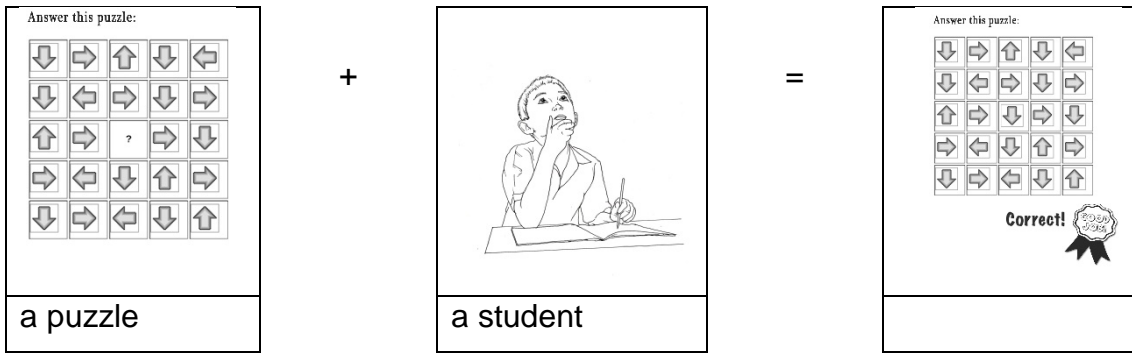
a puzzle + a student =

3. Last lesson, a teacher gave a puzzle to his students. The puzzle was very difficult. Many students could not find the answer to the puzzle. Finally, one student found the answer. The puzzle_____

_____(solve/student). The teacher was

very pleased.
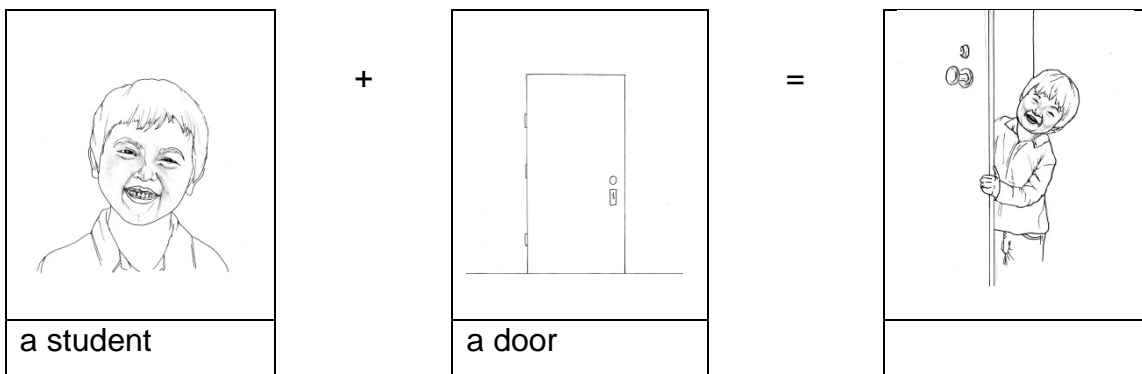


a student + a door =

4. Last lesson, a teacher was teaching his class. The room was very hot because the door was closed. A student decided to open the door. The student _____

(open/door). Fresh air came into the room.
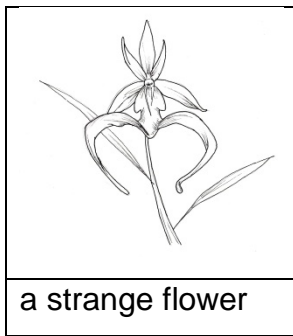
| a strange flower | + | a scientist | = | |

5.  Last year, a scientist was climbing a mountain.  The scientist saw an interesting flower.  The flower was a strange shape.  The scientist took the flower home.  The flower was new to everyone.  The flower _____ _____ (discover/scientist).  The scientist became famous.



| a waiter | + | a table with many plates | = | |
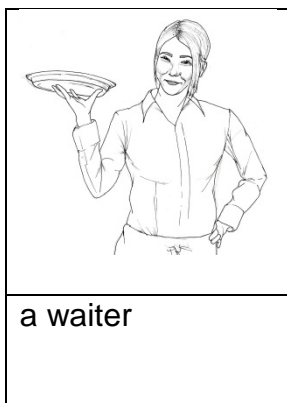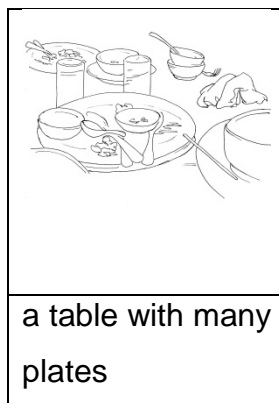
6.  Last night, a family was eating in a restaurant.  The family ate lots of food. There were many plates on the table.  The family asked the waiter to take the plates away.  The waiter _____ _____(cleared/table).  The family thanked the waiter.
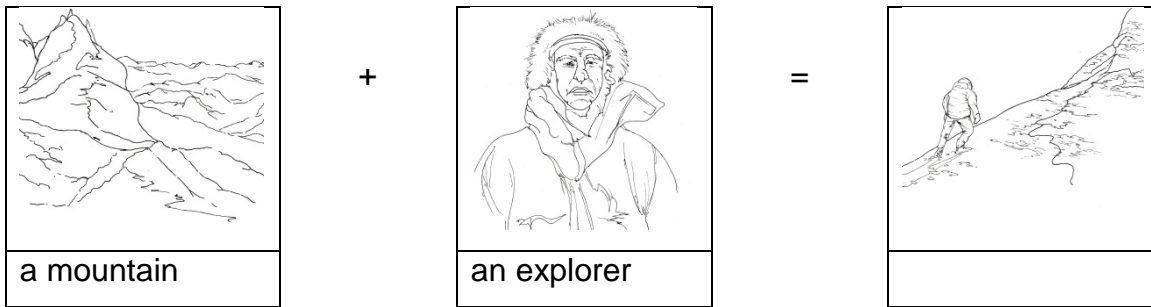
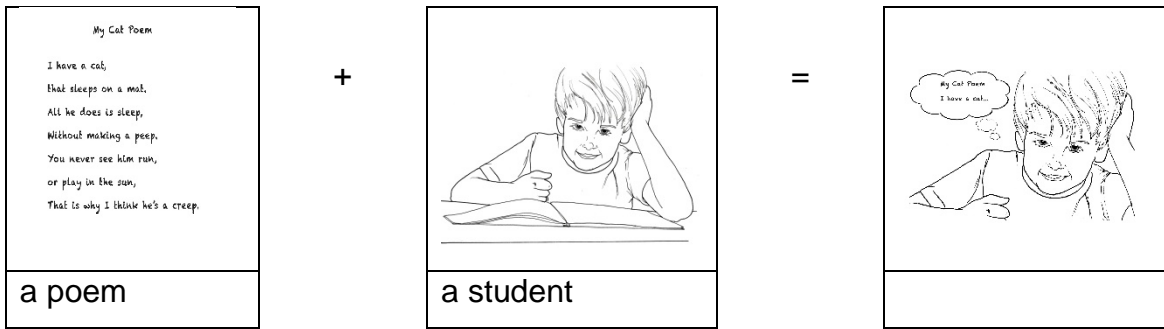| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a mountain | | an explorer | | |

7.  Last year, an explorer decided to climb a mountain.  The explorer went to the mountain and started to climb.  The explorer spent many days going up the mountain.  Finally, the explorer reached the top of the mountain.  The mountain

_____

(climb/explorer).  The explorer was very happy.

| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a student | | an assignment which is on a computer | | |
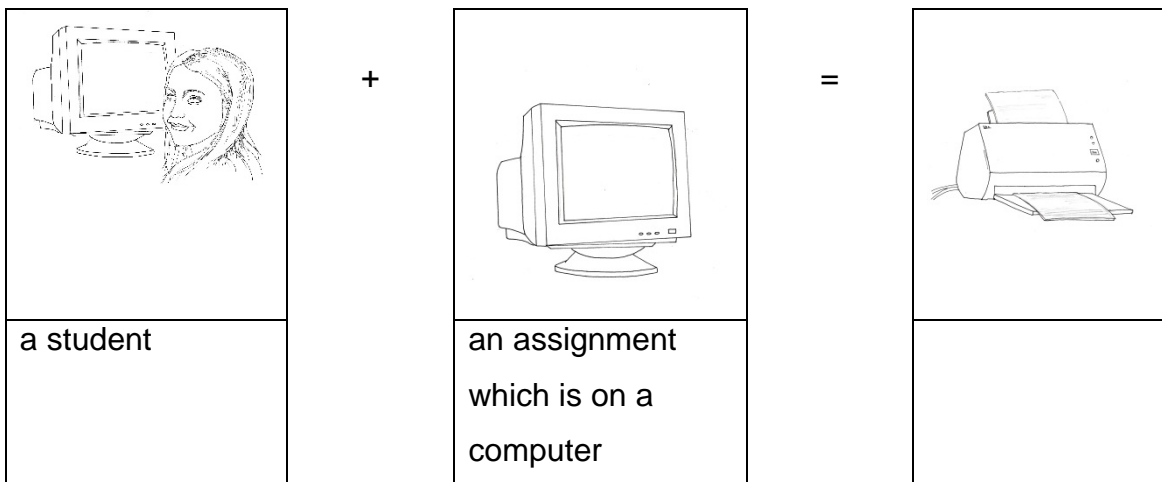
8.  Last night, a student finished her assignment.  She needed to give the assignment to the teacher at the start of her next class.  The student turned on the printer.  The student _____

_____(print/assignment).  The student gave the assignment to her teacher at the start of the next lesson.

| | | | | | |
|---|---|---|---|---|---|
|  a game | + |  a girl | = |  |
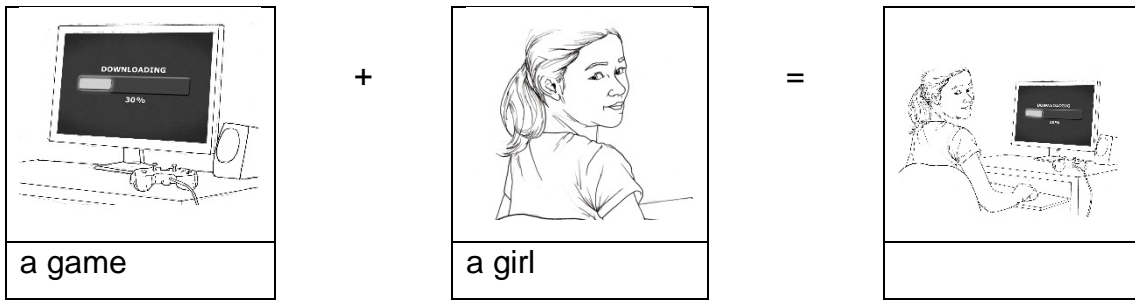
9.  Last night, a girl wanted to play a game on her computer.  The girl found the game on the Internet.  The girl put the game onto her computer.  The game _____(download/girl). The girl played the game for many hours.

| | | | | | |
|---|---|---|---|---|---|
|  an artist | + |  a picture | = |  |
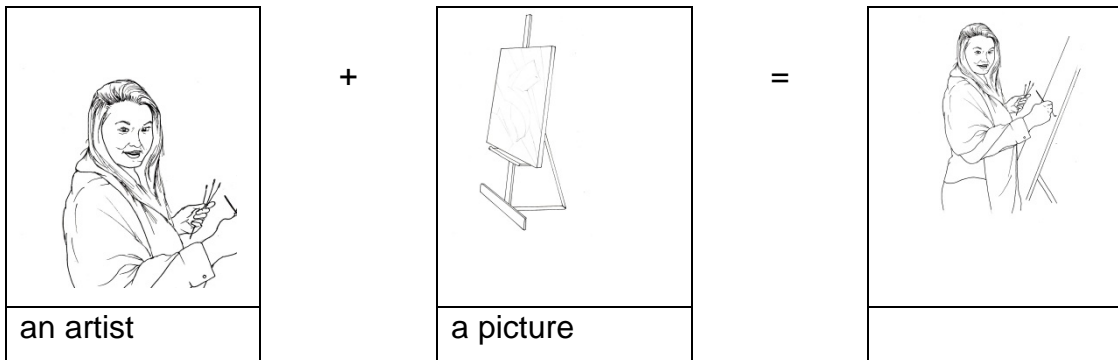
10.  Last year, an artist had an idea.  The artist wanted to paint a picture of the desert.  The artist went to the desert with her equipment.  The artist worked in the desert for many hours.  The artist _____ _____(paint/ picture).  The artist sold the picture for 5000 dollars.

*Version 4*

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*



| La petite fille est en train de jouer dans le jardin. | + | a translator | = | The little girl is playing in the garden. |

the language of a story

a translator

1. Last year, an author wrote a story. The author wanted many people to read the story. The author gave the story to a translator. The translator wrote the author's story in a different language. The words _____ _____(change/translator). Many people were able to read the book.



a teacher

an essay

2. Last lesson, a student wrote an essay. The essay had 2000 words. The student gave the essay to the teacher. The teacher carefully read the essay. The teacher _____ (graded/essay). The teacher gave the essay an A.
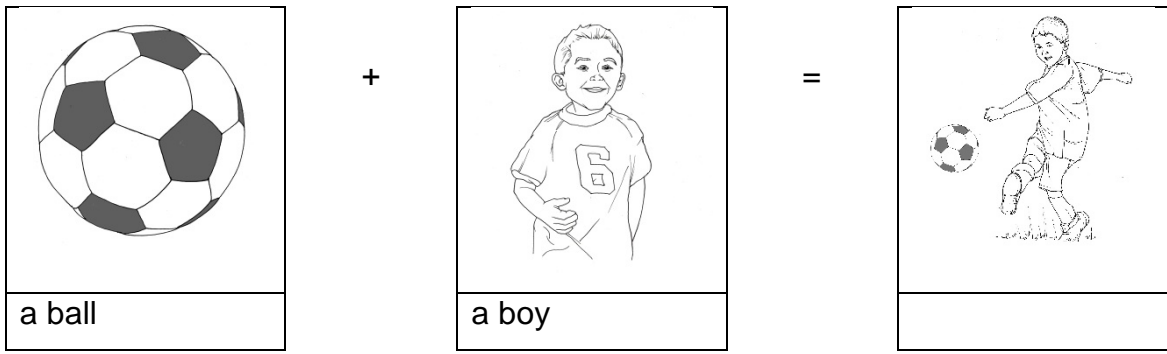
a ball     +     a boy     =

3.  Yesterday, a boy was playing with a ball.  The boy decided to kick the ball as far as he could.  The ball_____(kick/boy).  The boy did not see his ball again.
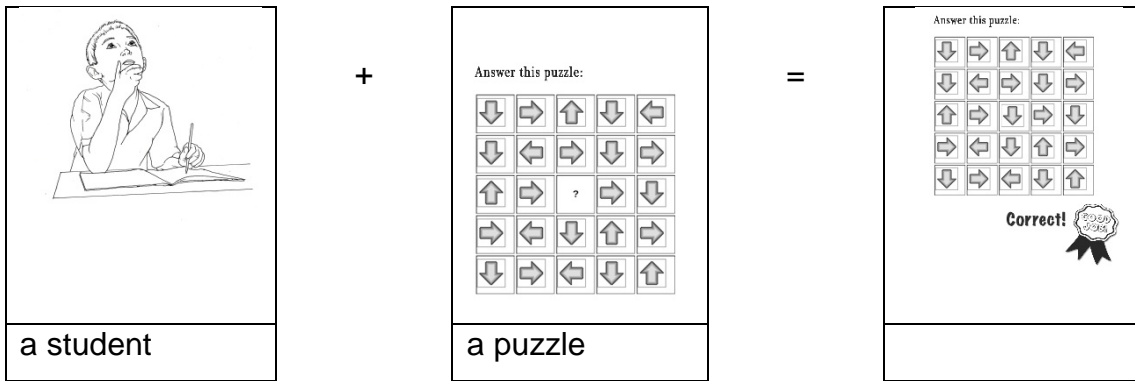


a student     +     a puzzle     =

4.  Last lesson, a teacher gave a puzzle to his students.  The puzzle was very difficult.  Many students could not find the answer to the puzzle.  Finally, one student found the answer.  The student _____ _____(solve/puzzle).  The teacher was very pleased.
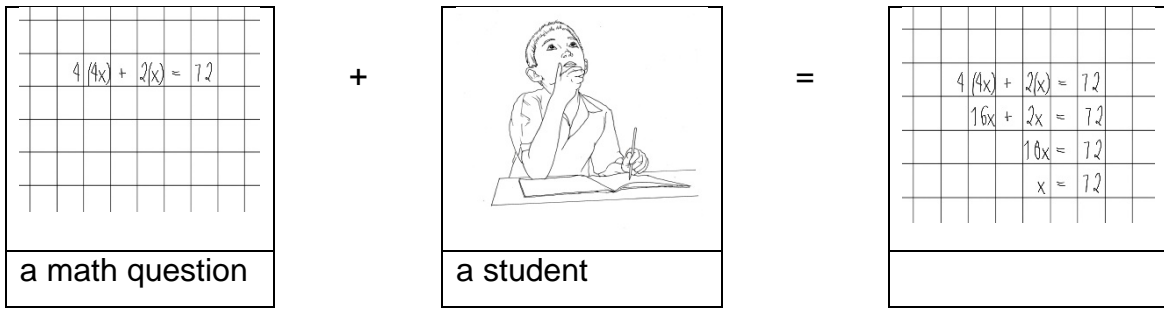
| a math question | a student | |
|---|---|---|

5.  Last lesson, a teacher asked his students a math question.  The question was very difficult.  Many students could not find the answer to the question.  Finally, one student found the answer.  The question_____ _____ (answer/student).  The teacher was very pleased.



| a scientist | a strange flower | |
|---|---|---|
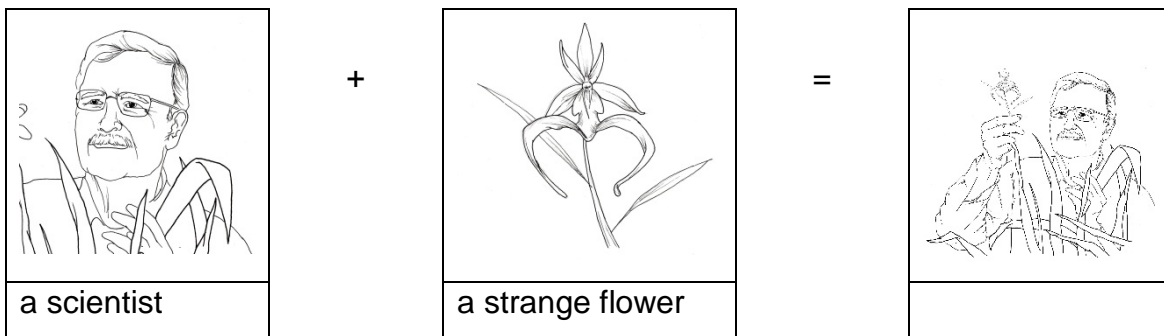
6.  Last year, a scientist was climbing a mountain.  The scientist saw an interesting flower.  The flower was a strange shape.  The scientist took the flower home.  The flower was new to everyone.  The scientist _____ _____ (discover/flower).  The scientist became famous.

| | | | | | |
|---|---|---|---|---|---|
|  | + |  | = |  |
| a cook | | a manager | | |
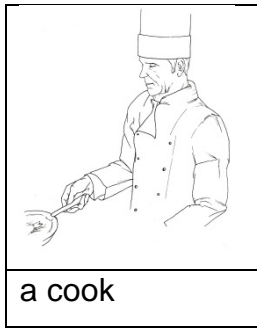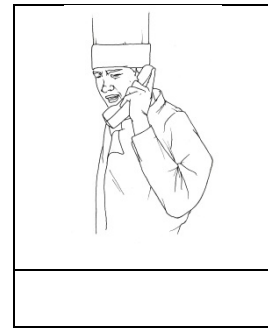
7.  Yesterday, there was a problem at a restaurant.  A customer wanted to speak to the cook.  Nobody could find the cook.  The manager had the cook's phone number.  The manager called his cell phone.  The cook _____ _____ (contact/manager). The cook was hiding in the kitchen.

| | | | | | |
|---|---|---|---|---|---|
|  | + |  | = |  |
| an explorer | | a mountain | | |
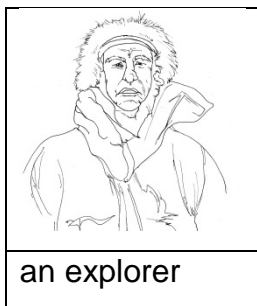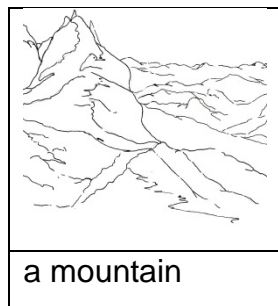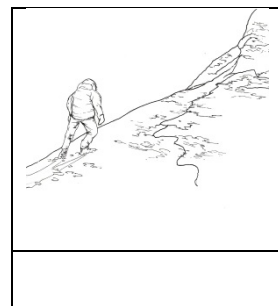
8.  Last year, an explorer decided to climb a mountain.  The explorer went to the mountain and started to climb.  The explorer spent many days going up the mountain.  Finally, the explorer reached the top of the mountain.  The explorer

_____

(climb/mountain).  The explorer was very happy.

| | | | | |
|---|---|---|---|---|
| My Cat Poem<br><br>I have a cat,<br>that sleeps on a mat.<br>All he does is sleep,<br>Without making a peep,<br>You never see him run,<br>or play in the sun,<br>That is why I think he's a creep. | **+** | | **=** | |
| a poem | | a student | | |

9.  Last lesson, the teacher read his students a poem.  The poem was very beautiful.  A student decided that she wanted to remember the poem.  The poem _____ _____(memorize/student).  The teacher felt very proud.

| | | | | |
|---|---|---|---|---|
| | **+** | DOWNLOADING<br>30% | **=** | |
| a girl | | a game | | |
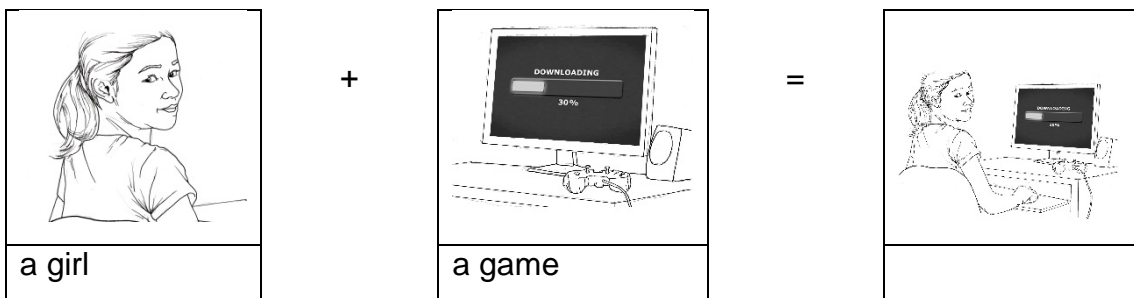
10.  Last night, a girl wanted to play a game on her computer.  The girl found the game on the Internet.  The girl put the game onto her computer.  The girl _____ (download/game).  The girl played the game for many hours.

*Please complete the following sentences using the words provided in the brackets.  The sentences must be grammatically correct.  The paragraph must make sense.*

| | | | | |
|---|---|---|---|---|
| a prisoner | + | a guard | = | |

1.  Last week, a prisoner was walking outside.  The prisoner saw a hole in the fence.  The prisoner thought about escaping.  However, a guard was nearby.  The prisoner _____ _____(watch/guard).  The prisoner did not escape.

| | | | | |
|---|---|---|---|---|
| a translator | + | the language of a story | = | |
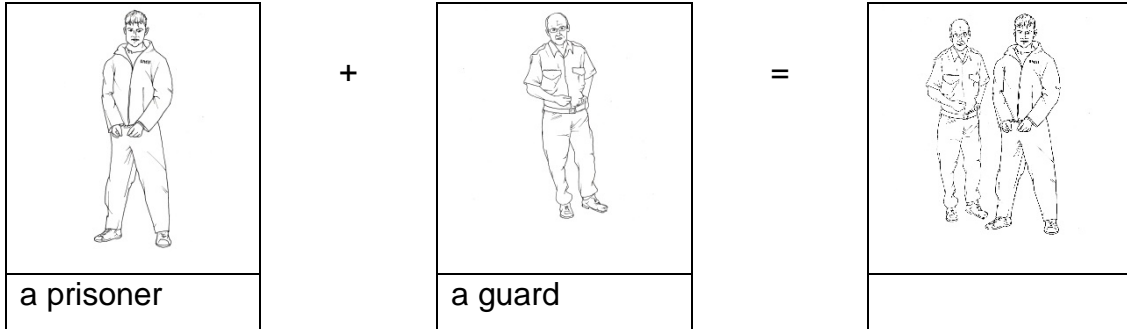
2.  Last year, an author wrote a story.  The author wanted many people to read the story.  The author gave the story to a translator.  The translator wrote the author's story in a different language.  The translator _____ _____ (change/words).  Many people were able to read the book.

| a fish | + | a chef | = | |
|--------|---|--------|---|---|
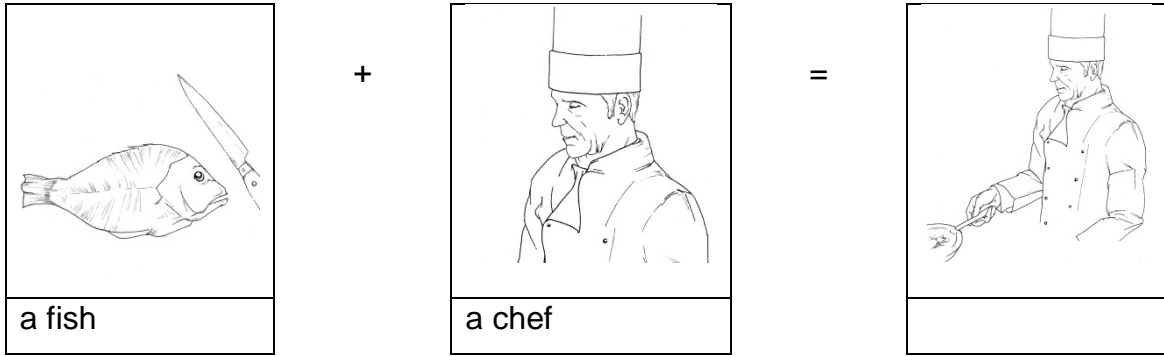
3.  Yesterday, a chef was working in a kitchen.  A customer ordered the fish.

The chef put the fish into a hot pan.  The chef turned on the heat.  The fish

_____

_____(cook/chef).  The cooked fish looked

delicious.



| a boy | + | a ball | = | |
|-------|---|--------|---|---|
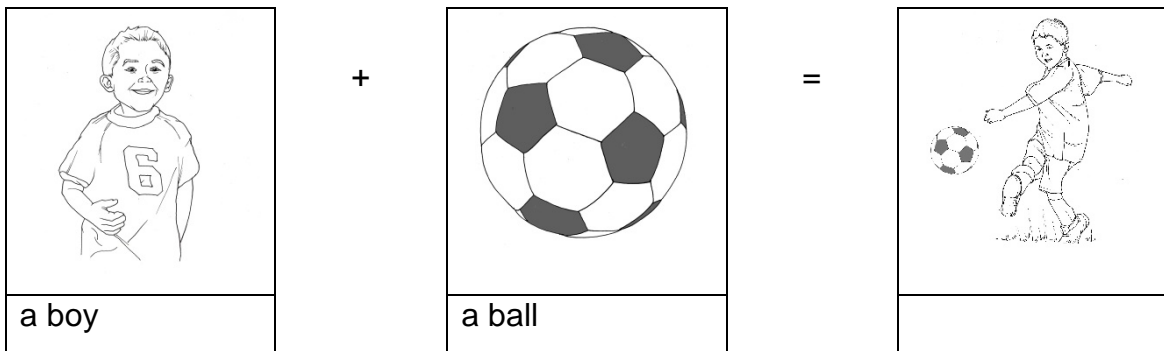
4.  Yesterday, a boy was playing with a ball.  The boy decided to kick the ball as

far as he could.  The boy _____

_____(kick/ball).  The boy did not see his
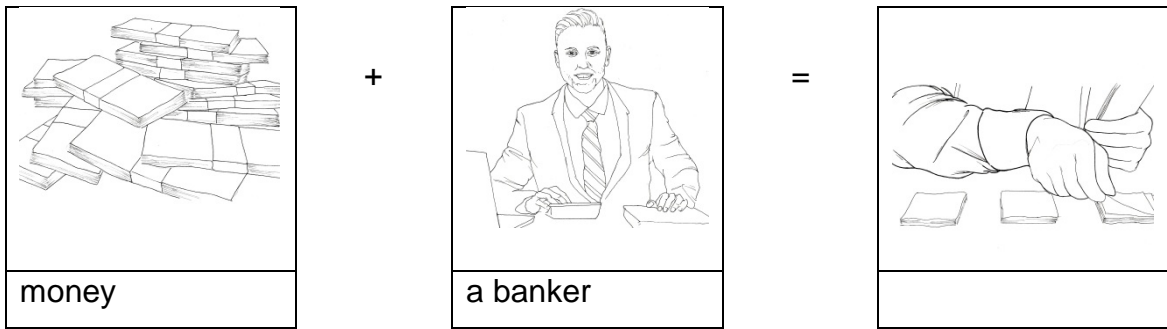
ball again.

money + a banker =

5.  Yesterday, a man was standing in a bank.  He was waiting for a banker to give him his money.  Before the banker gave the man his money, he needed to count it.  The money _____ _____(count/banker).  The man thought about what he would buy with his money.



a student + a math question =
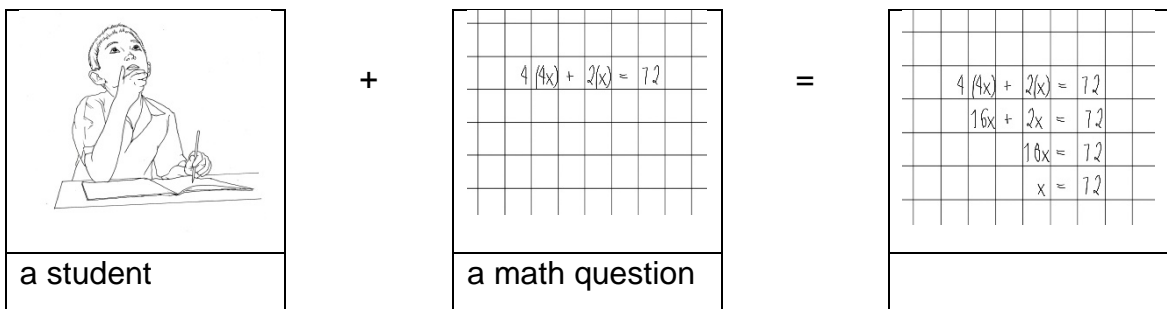
6.  Last lesson, a teacher asked his students a math question.  The question was very difficult.  Many students could not find the answer to the question.  Finally, one student found the answer.  The student _____ _____ (answer/question).  The teacher was very pleased.

| | | | | |
|---|---|---|---|---|
| <br>a passport | + | <br>an immigration<br>officer | = |  |
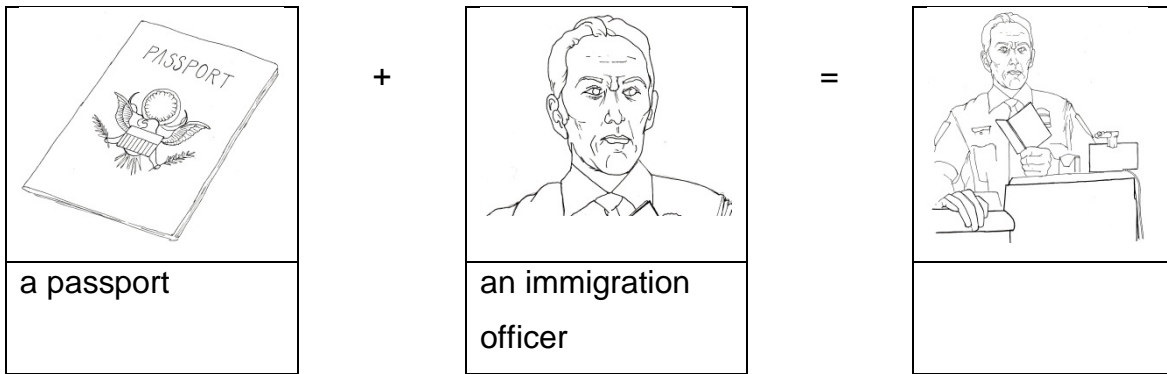
7.  Yesterday, a woman went to an airport.  The woman went to the immigration desk.  An immigration officer looked at the woman's passport.  Her passport

_____

(check/immigration officer).  The immigration officer asked the woman many questions.

| | | | | |
|---|---|---|---|---|
| <br>a manager | + | <br>a cook | = |  |
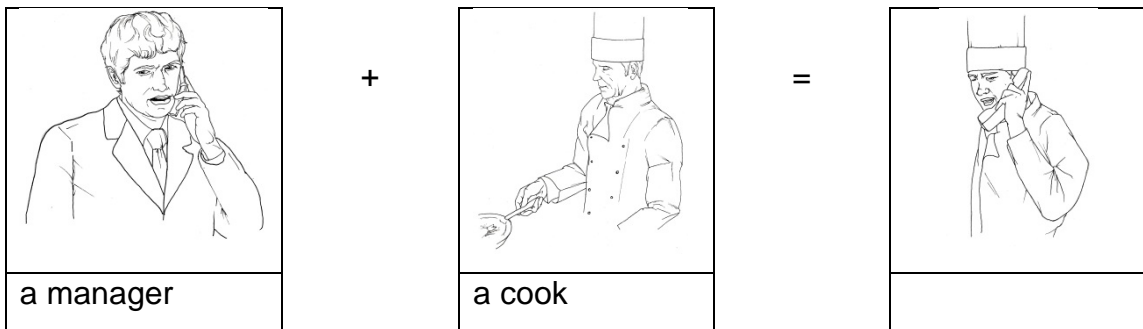
8.  Yesterday, there was a problem at a restaurant.  A customer wanted to speak to the cook.  Nobody could find the cook.  The manager had the cook's phone number.  The manager called his cell phone.  The manager _____ _____ (contact/cook).  The cook was hiding in the kitchen.

| | | | | |
|---|---|---|---|---|
| a woman | + | a lion | = | |
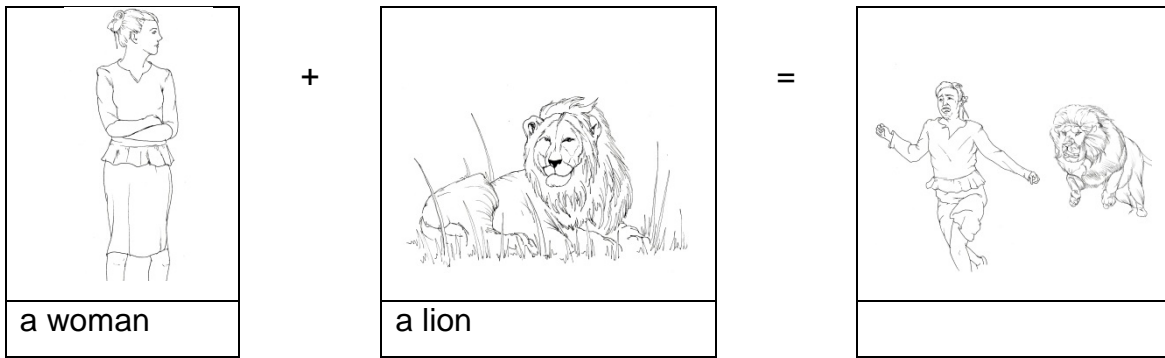
9. Last year, a woman went on holiday to Africa.  She wanted to see lions.  Her guide found a lion for her to look at.  The lion did not want to be looked at.  The lion bit the woman.  The woman _____ _____(attack/lion).  The woman ran away.

| | | | | |
|---|---|---|---|---|
| a student | + | a poem | = | |
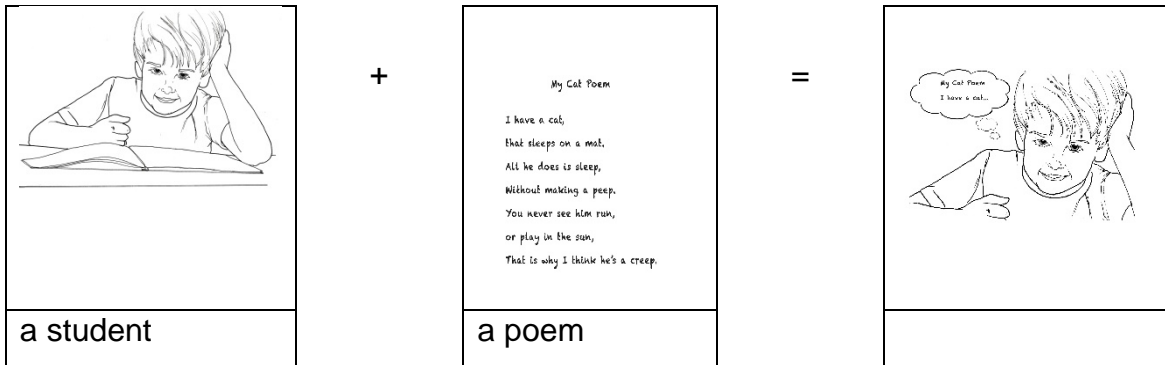
10.  Last lesson, the teacher read his students a poem.  The poem was very beautiful.  A student decided that she wanted to remember the poem.  The student _____ (memorize/poem).  The teacher felt very proud.

*Version 1*

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*



| a lion | a tourist | |

1. Right now, a woman is on holiday in Africa. She wants to see many animals. Her guide has found a lion. The woman is carefully looking at the lion. The lion

_____

(watch/tourist). The lion is not moving.



| a worker | a car which is dirty | |
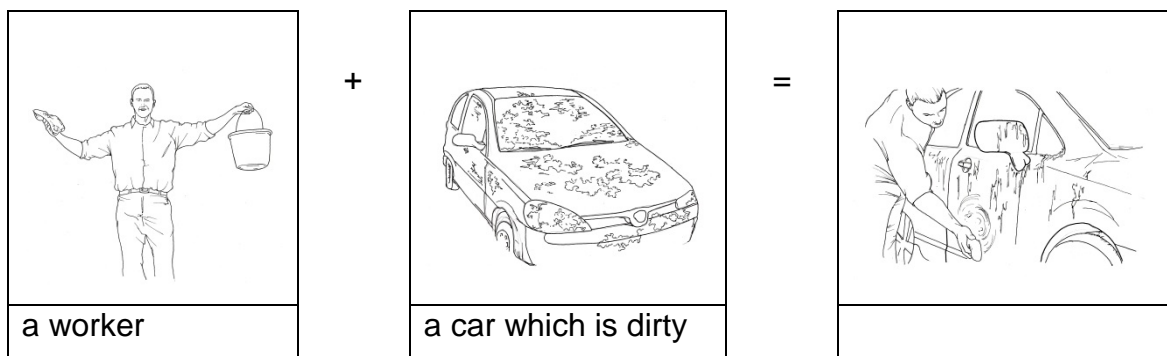
2. Right now, a worker is cleaning a car. The car is very dirty. The worker is putting water on to the car. The worker _____

_____(wash/car). The owner of the car is watching the worker carefully.

| | | | | |
|---|---|---|---|---|
| a picture | + | an artist | = | |

3. Right now, an artist is working.  She is in a market.  She has found something interesting to paint.  She is putting the paint onto the paper.  The picture _____ _____(paint/artist). The artist is smiling.

| | | | | |
|---|---|---|---|---|
| a lion | + | a woman | = | |
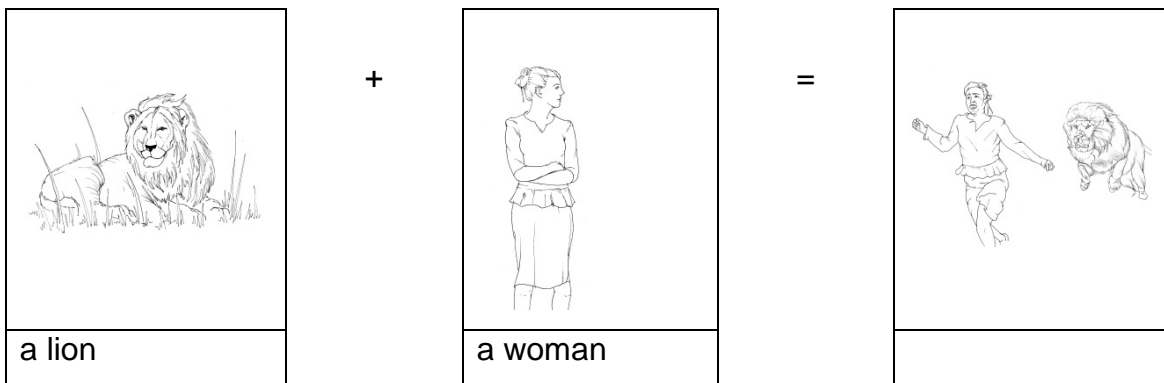
4. Right now, a woman is on holiday in Africa.  Her guide has found many lions for her to photograph.  However, she is screaming.  She is screaming very loudly.  A lion is biting her.  The lion _____ _____ (attack/woman).  The other tourists are running away.

| a messy house | + | a maid | = | |
|---|---|---|---|---|

5.  Right now, a maid is working in a house.  The house is very messy.  The maid is trying to make the house clean before the family comes home.  The house _____ _____(clean/maid).  The maid is not smiling.

| a teacher | + | an answer | = | |
|---|---|---|---|---|

$$4(4x) + 2(x) = 72$$
$$16x + 2x = 72$$
$$18x = 72$$
$$x = 4$$
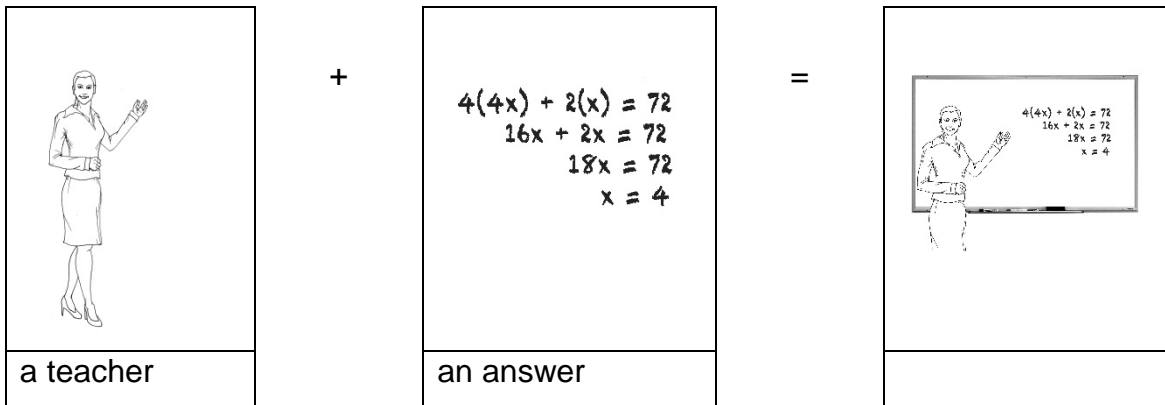
6.  Right now, many students are listening to their teacher.  The teacher is giving the students the answer to a test.  Some students got the answer wrong.  The teacher is telling these students why their answer is wrong.  The teacher

_____

(explain/answer).  The students are listening carefully.

| | | | | |
|---|---|---|---|---|
| a cat which is in a tree | + | a security guard | = | |
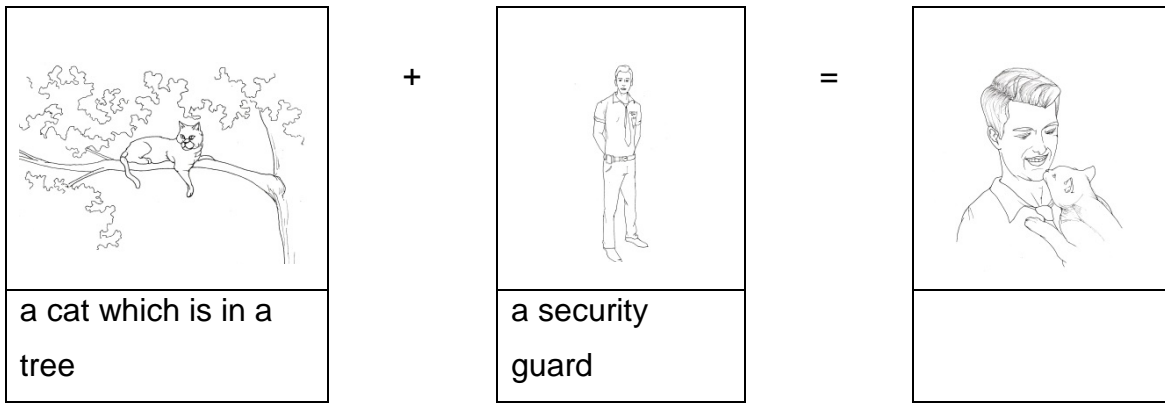
7.  Right now, a cat is in a tree.  The cat cannot get down.  A security guard has seen the cat and has climbed the tree.  The security guard is helping the cat to get down.  The cat _____

(rescue/security guard).  The cat is biting the security guard.

| | | | | |
|---|---|---|---|---|
| a teacher | + | an exam | = | |
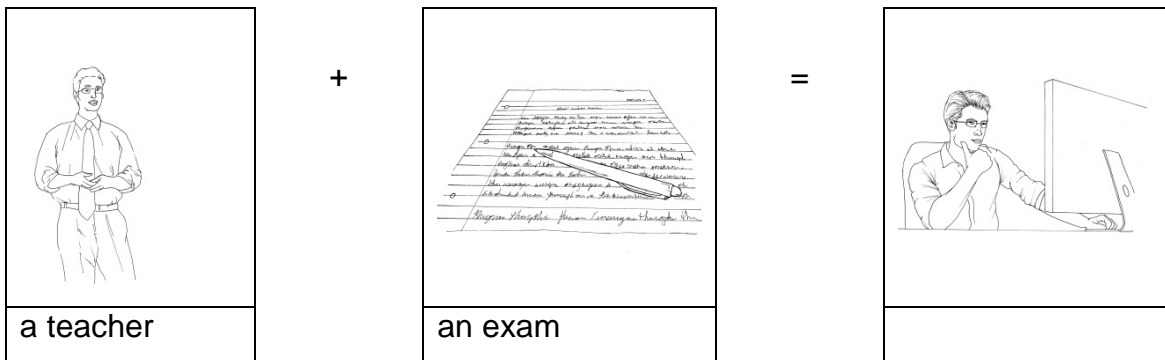
8.  Right now, a teacher is working in his office.  The teacher wants to know how much his students have learned.  He is thinking of questions for the final exam.  He is entering the questions into his computer.  The teacher

_____

(create/exam).  The teacher is thinking about the course.
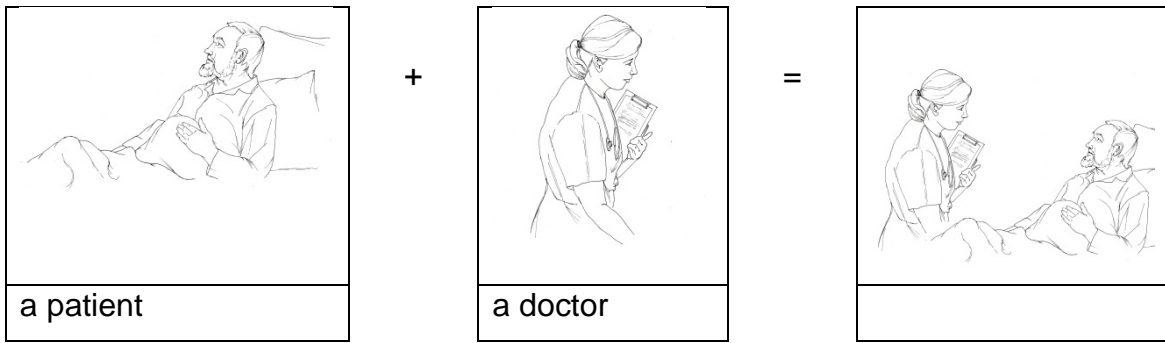
| a patient | + | a doctor | = | |

9.  Right now, a doctor is talking to a patient.  The patient is sick but does not know why.  The doctor is telling the patient that he needs lots of rest.  The patient _____ (advise/doctor).  The patient is listening carefully.



| a developer | + | a website | = | |
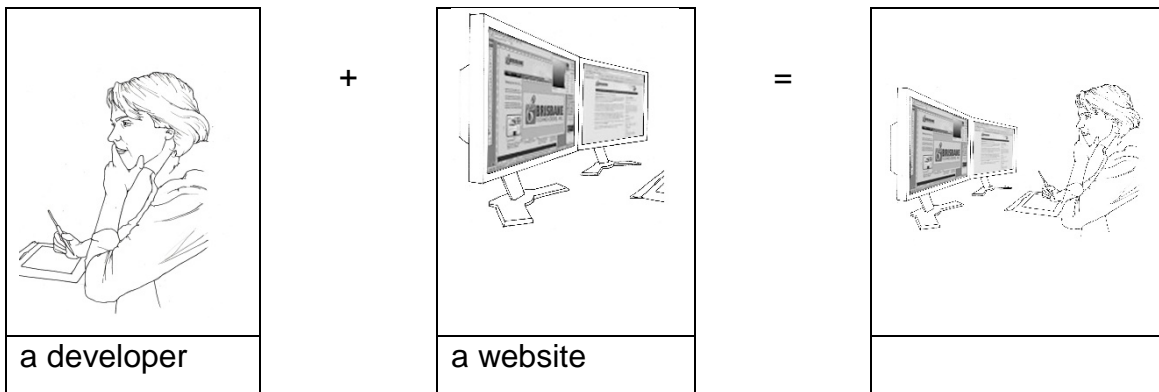
10.  Right now, a developer is working in her office.  She has to create a website for a company.  She is carefully choosing the colors of the website.  She is carefully choosing the pictures for the website.  The developer

_____

(design/website).  The developer is thinking carefully.
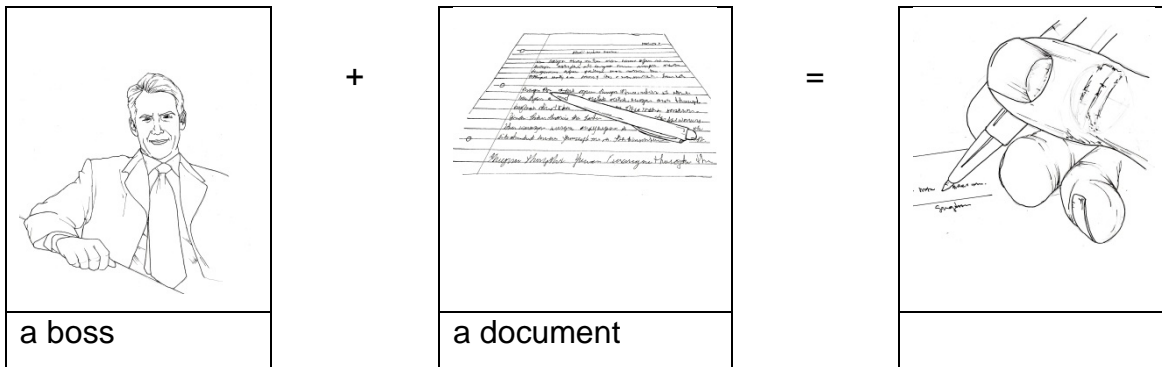
| a boss | | a document | | |
|---|---|---|---|---|
|  | + |  | = |  |

11.  Right now, a boss is sitting in his office.  The boss has agreed to sell his company.  He is writing his name on a very important document.  The boss

_____

(sign/document).  The boss is thinking about what he will buy with his money.

*Please complete the following sentences using the words provided in the brackets.  The sentences must be grammatically correct.  The paragraph must make sense.*

| | | | | |
|---|---|---|---|---|
| a car which has a problem | + | a mechanic | = | |
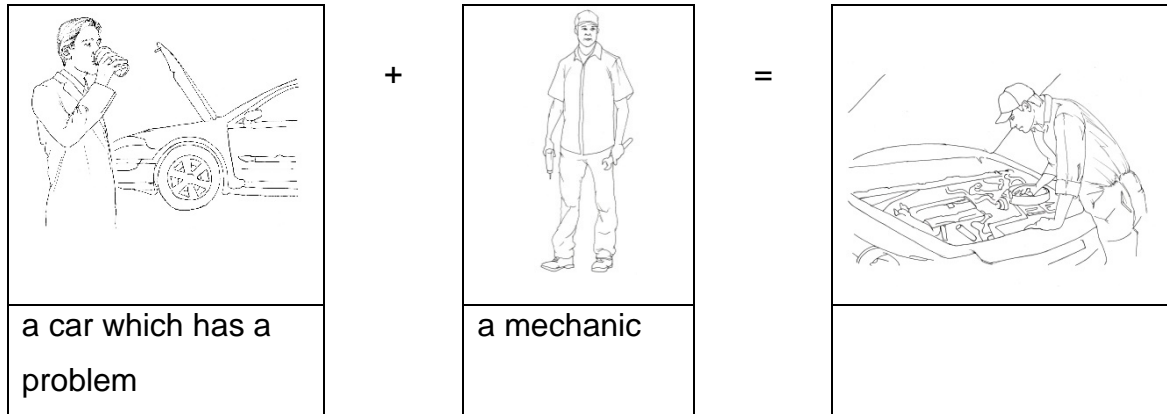
1.  Right now, a man is watching a mechanic.  The man's car has a problem so the man has taken his car to a mechanic.  The mechanic is trying to repair the car.  The car _____ (repair/mechanic).  The man is drinking coffee while he is waiting.

| | | | | |
|---|---|---|---|---|
| a tourist | + | a lion | = | |
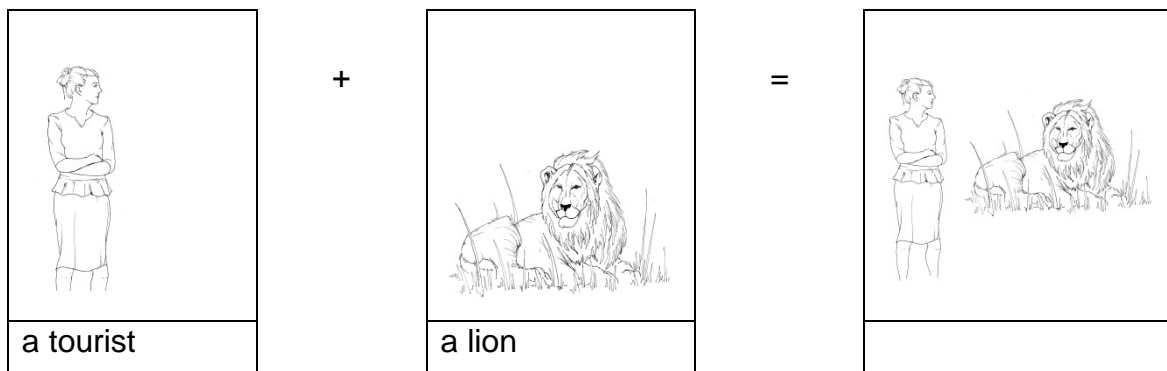
2.  Right now, a woman is on holiday in Africa.  She wants to see many animals.  Her guide has found a lion.  The woman is carefully looking at the lion.  The tourist _____ (watch/lion). The lion is not moving.

| a woman | + | a manager | = | |

3.  Right now, a woman is sitting in an office.  She has applied for a job at a new company.  A manager from the new company is also sitting in the office.  The manager is asking he woman many questions.  The woman _____ _____ (interview/manager). The woman is smiling.
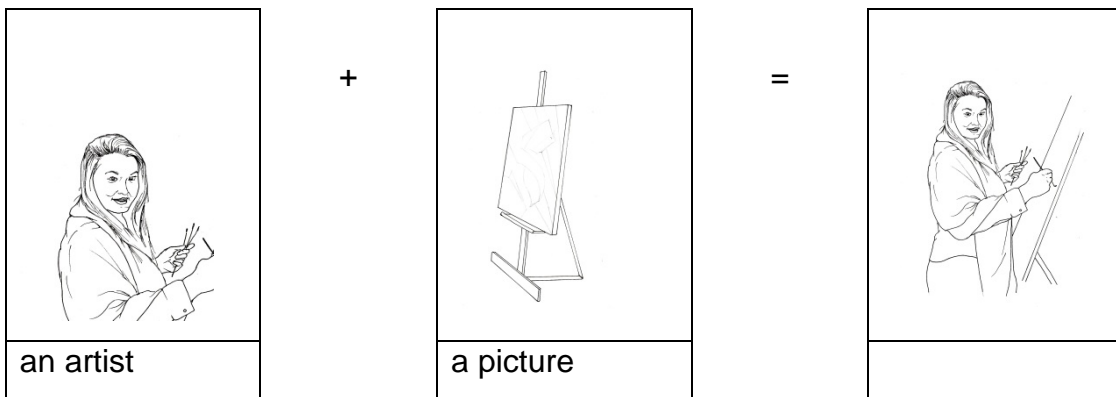


| an artist | + | a picture | = | |

4.  Right now, an artist is working.  She is in a market.  She has found something interesting to paint.  She is putting the paint onto the paper.  The artist _____ (paint/ picture). The artist is smiling.
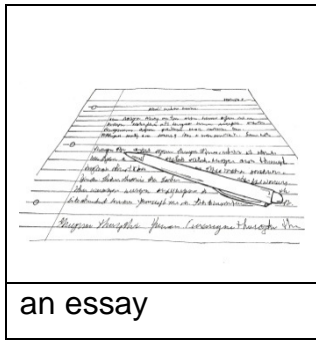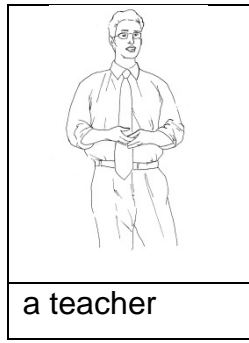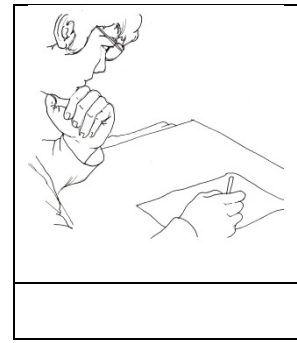
| an essay | + | a teacher | = | |
|---|---|---|---|---|

5.  Right now, a teacher is reading an essay.  The teacher is writing many helpful comments on the essay.  The essay _____ _____(grade/teacher).  The teacher is thinking carefully about the mark that he will give to the essay.
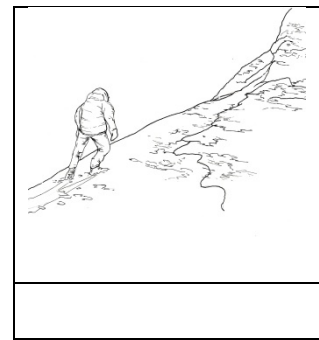
| a maid | + | a messy house | = | |
|---|---|---|---|---|
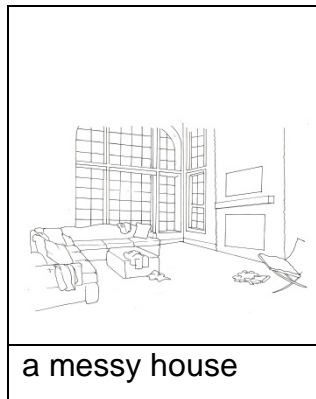
6.  Right now, a maid is working in a house.  The house is very messy.  The maid is trying to make the house clean before the family comes home.  The maid _____ (clean/house).  The maid is not smiling.
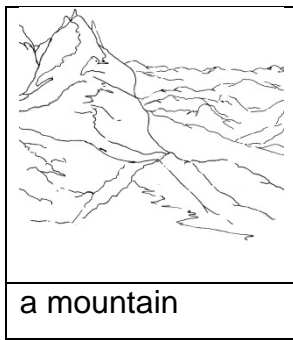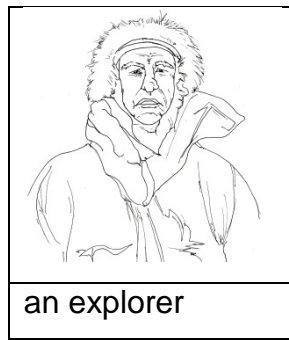
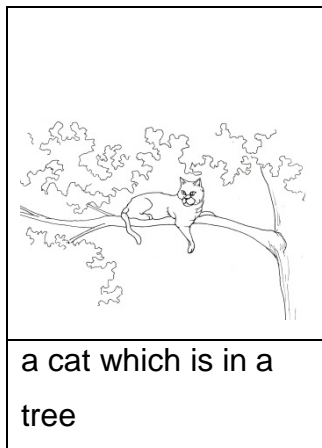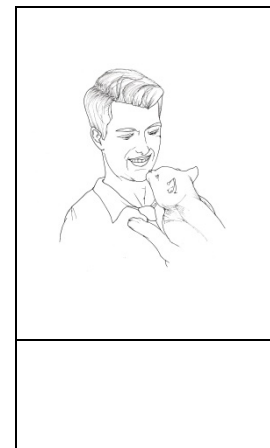| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a mountain | | an explorer | | |

7.  Right now, an explorer is trying to get to the top of a mountain.  Nobody has ever reached the top of this mountain.  The climb is very difficult but the explorer is not giving up.  The mountain _____ _____(climb/explorer).  The explorer is breathing heavily.
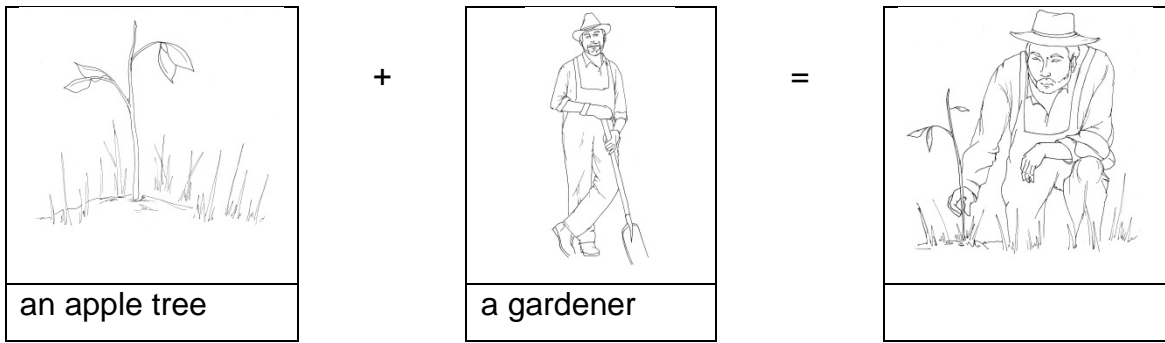
| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a security guard | | a cat which is in a tree | | |
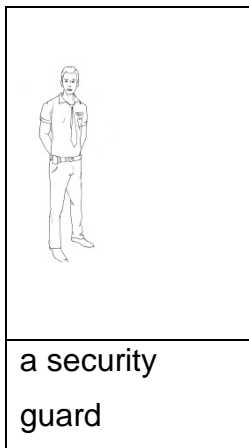
8.  Right now, a cat is in a tree.  The cat cannot get down.  A security guard has seen the cat and has climbed the tree.  The security guard is helping the cat to get down.  The security guard _____ _____(rescue/cat).  The cat is biting the security guard.

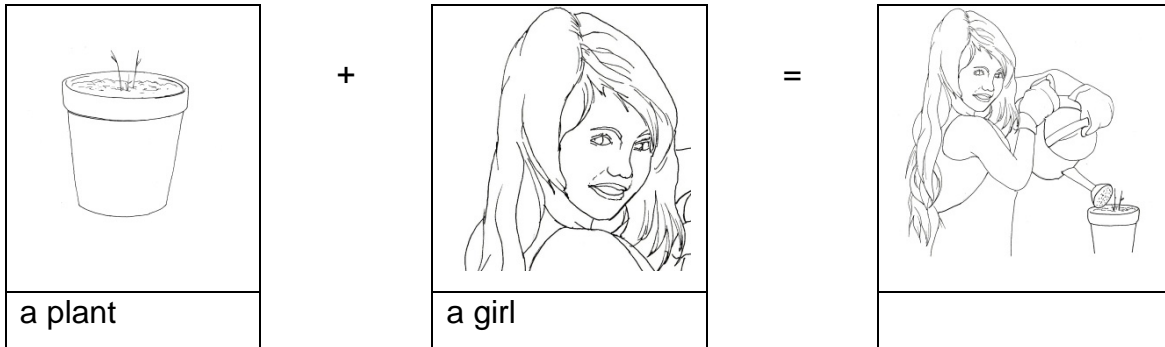| an apple tree | + | a gardener | = | |
|---|---|---|---|---|

9. Right now, a gardener is working in his garden. The gardener has decided that his garden needs more trees so he has bought a small apple tree. He is digging a hole for the apple tree. The apple tree _____ _____ (plant/gardener). The gardener is hoping that his new tree will give him many apples.
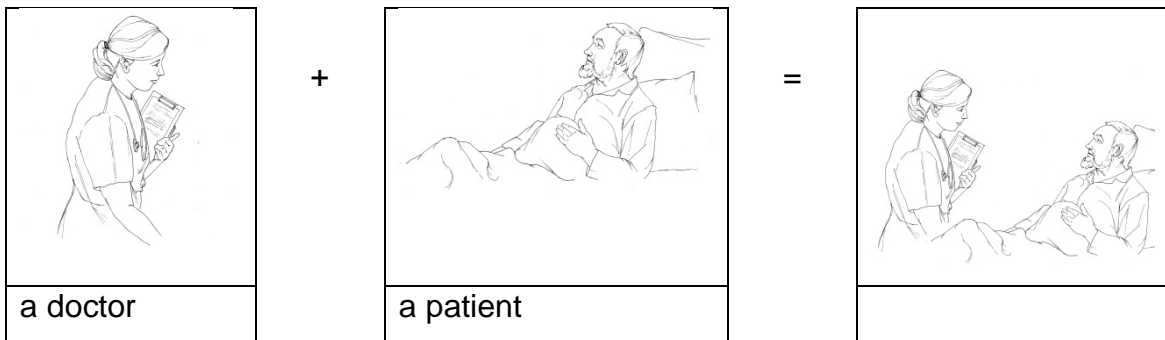


| a doctor | + | a patient | = | |
|---|---|---|---|---|

10. Right now, a doctor is talking to a patient. The patient is sick but does not know why. The doctor is telling the patient that he needs lots of rest. The doctor _____ (advise/patient). The patient is listening carefully.

*Version 3*

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*

| a plant | + | a girl | = | |
|---------|---|--------|---|---|

1. Right now, a girl is standing next to her plant. There is a problem with the plant. Some of the leaves of the plant are brown. The girl is worried about the brown leaves. The girl is giving water to the plant. The plant _____ _____(water/girl). The sun is shining very brightly.

| a mechanic | + | a car which has a problem | = | |
|------------|---|---------------------------|---|---|
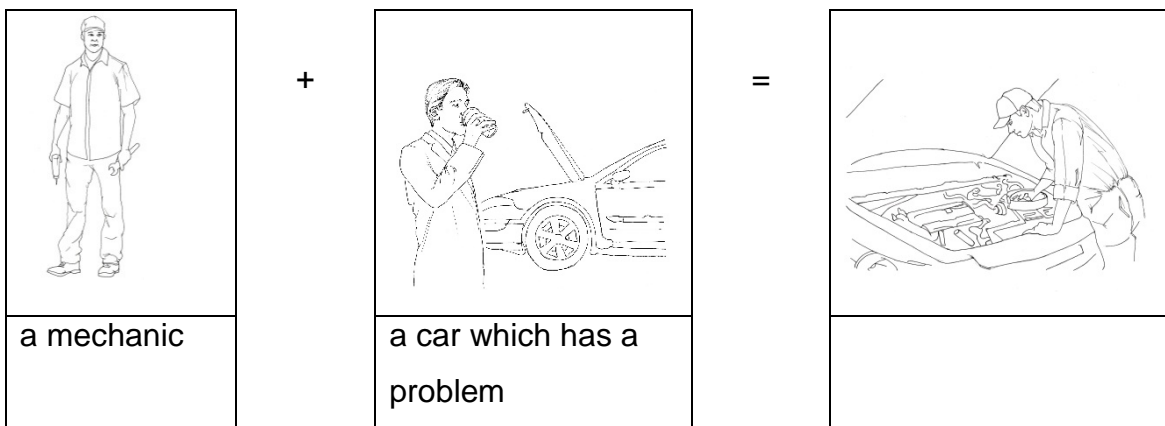
2. Right now, a man is watching a mechanic. The man's car has a problem so the man has taken his car to a mechanic. The mechanic is trying to repair the car. The mechanic _____ (repair/car). The man is drinking coffee while he is waiting.

| | | |
|---|---|---|
|  | +  | =  |
| a door | a security guard | |
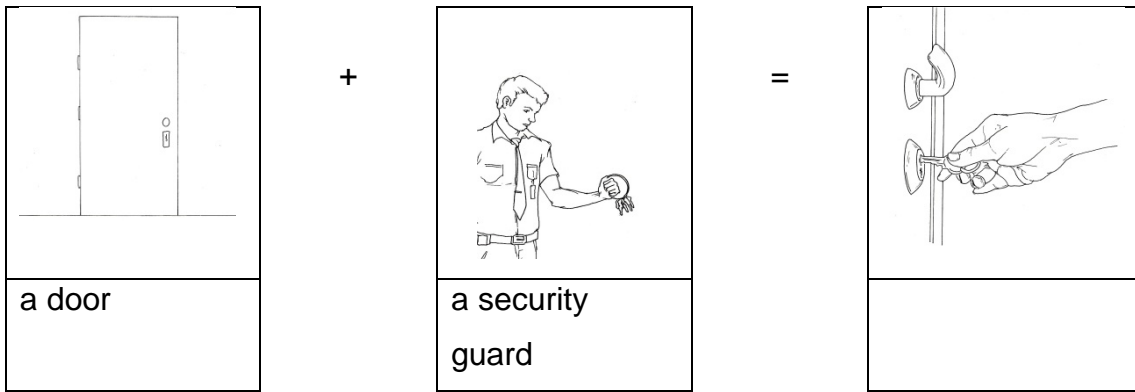
3. Right now, a security guard is working. He has just closed a door and has put a key into the lock of the door. He is holding the handle of the door and turning the key. The door _____ _____(lock/security guard). The security guard is thinking about changing his job.

| | | |
|---|---|---|
|  | +  | =  |
| a manager | a woman | |
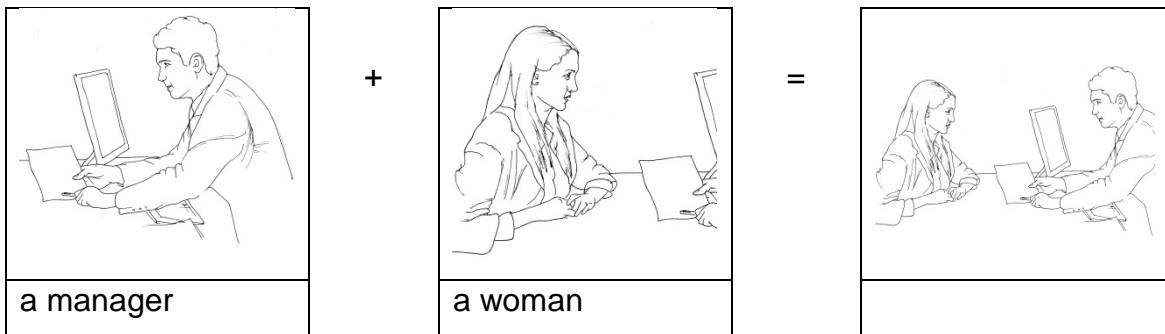
4. Right now, a woman is sitting in an office. She has applied for a job at a new company. A manager from the new company is also sitting in the office. The manager is asking he woman many questions. The manager _____ _____ (interview/woman). The woman is smiling.

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| a passport | + | an immigration officer | = | |
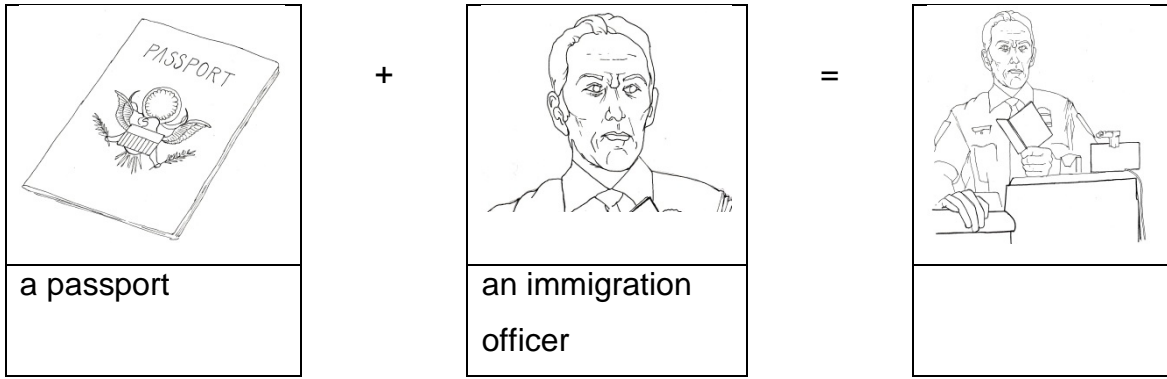
5. Right now, a woman is in an airport. The woman is standing at the immigration desk. An immigration officer is looking at the woman's passport. Her passport _____ (check/immigration officer). The immigration officer is asking the woman many questions.
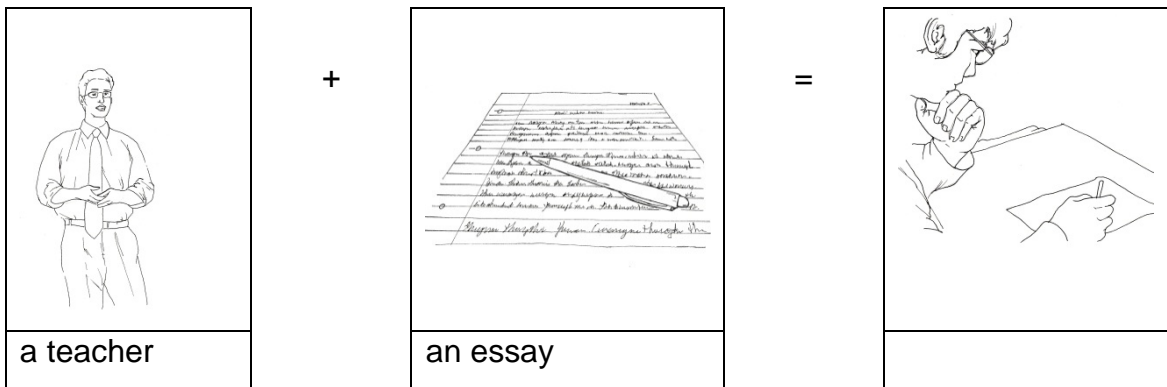


| a teacher | + | an essay | = | |

6. Right now, a teacher is reading an essay. The teacher is writing many helpful comments on the essay. The teacher _____ _____ (grade/essay). The teacher is thinking carefully about the mark that he will give to the essay.
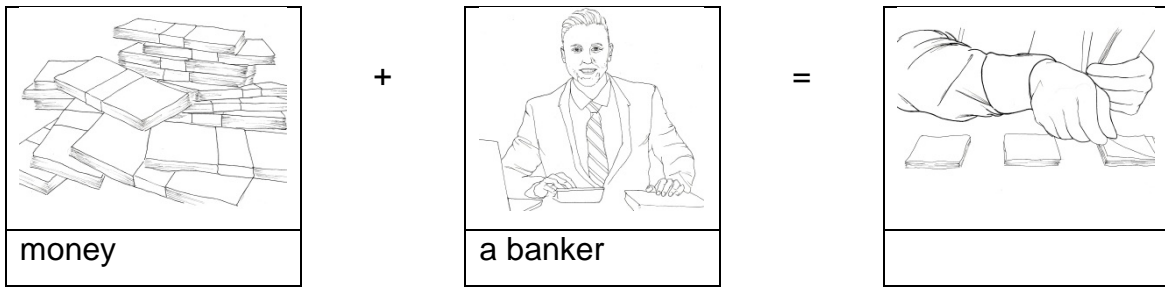
| money | + | a banker | = | |
|:-----:|:-:|:--------:|:-:|:--|

7.  Right now, a man is standing in a bank.  He is waiting for a banker to give him his money.  Before the banker gives the man his money, he needs to count it.  The banker is holding the money.  The money _____ _____ (count/banker).  The man is thinking about what he will buy with his money.
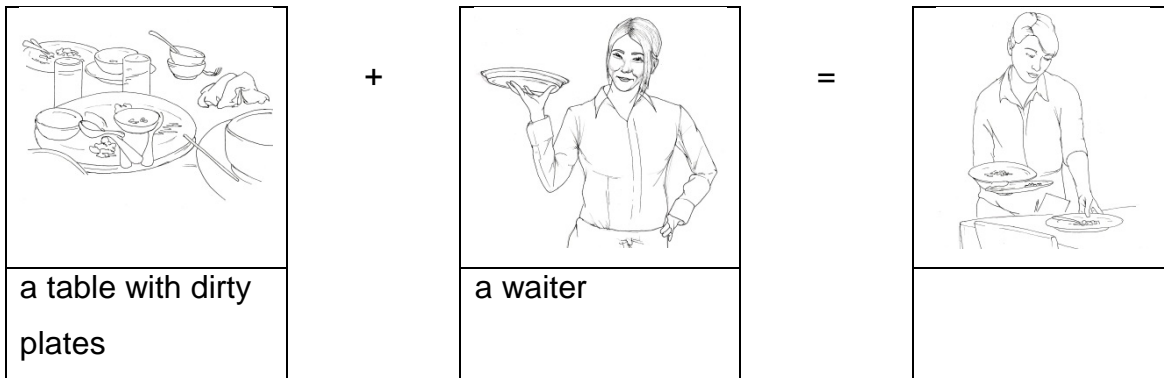
| an explorer | + | a mountain | = | |
|:-----------:|:-:|:----------:|:-:|:--|
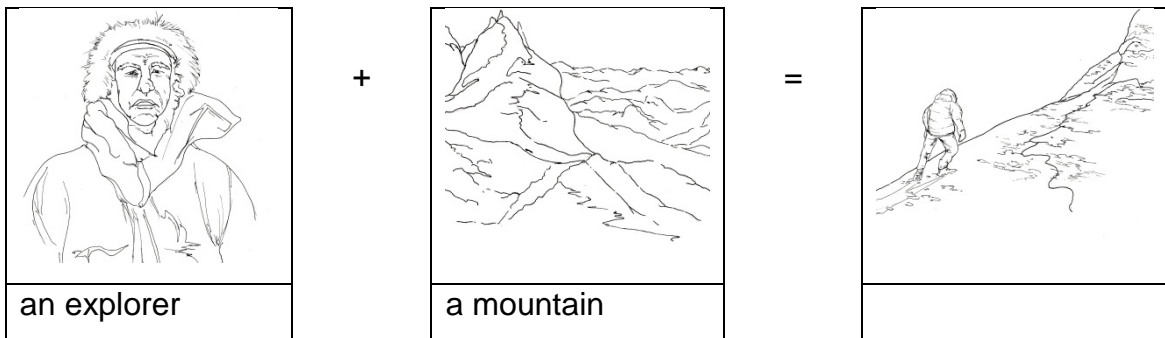
8.  Right now, an explorer is trying to get to the top of a mountain.  Nobody has ever reached the top of this mountain.  The climb is very difficult but the explorer is not giving up.  The explorer _____ _____(climb/mountain).  The explorer is breathing heavily.

| a table with dirty plates | + | a waiter | = | |
|---|---|---|---|---|

9.  Right now, a waiter is working in a restaurant.  It is the waiter's job to take the dirty plates and glasses to the kitchen.  One family has just finished eating. The waiter is taking the dirty plates away from their table.  The table _____ _____ (clear/waiter).  The waiter is working very hard.

| a gardener | + | an apple tree | = | |
|---|---|---|---|---|
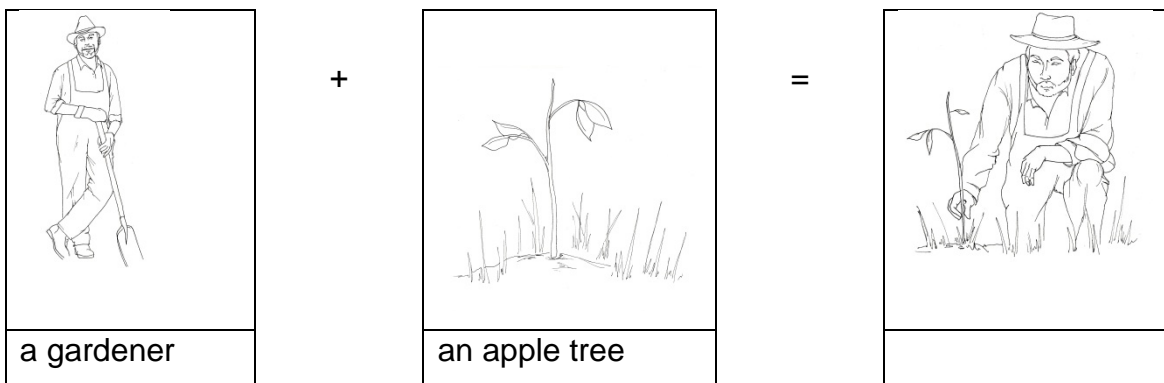
10.  Right now, a gardener is working in his garden.  The gardener has decided that his garden needs more trees so he has bought a small apple tree.  He is digging a hole for the apple tree.  The gardener _____ _____ (plant/apple tree).  The gardener is hoping that his new tree will give him many apples.

*Please complete the following sentences using the words provided in the brackets. The sentences must be grammatically correct. The paragraph must make sense.*



a cook    +    a manager    =

1. Right now, there is a problem at a restaurant. A customer wants to speak to the cook. Nobody can find the cook. The manager has the cook's phone number. The manager is calling the cook's cell phone. The cook _____ _____ (contact/manager). The cook is hiding in the kitchen.



a girl    +    a plant    =
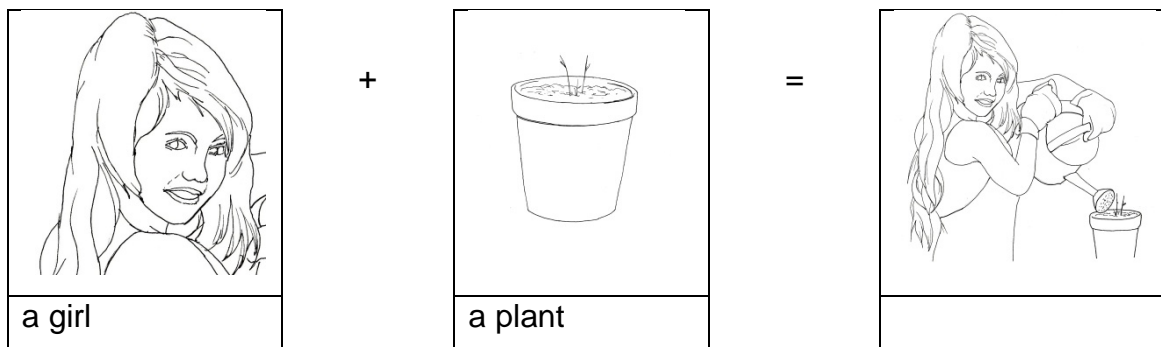
2. Right now, a girl is standing next to her plant. There is a problem with the plant. Some of the leaves of the plant are brown. The girl is worried about the brown leaves. The girl is giving water to the plant. The girl _____ _____(water/plant). The sun is shining very brightly.

a fish + a chef =
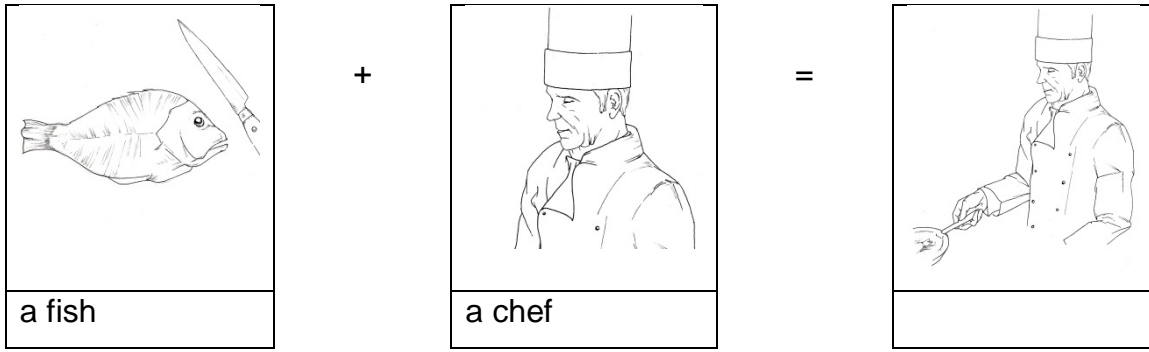
3. Right now, a chef is working in a kitchen.  A customer has ordered fish.  The chef has put the fish into a hot pan.  The chef is turning up the heat.  The fish _____(cook/chef). The chef is looking at the delicious fish.



a security guard + a door =
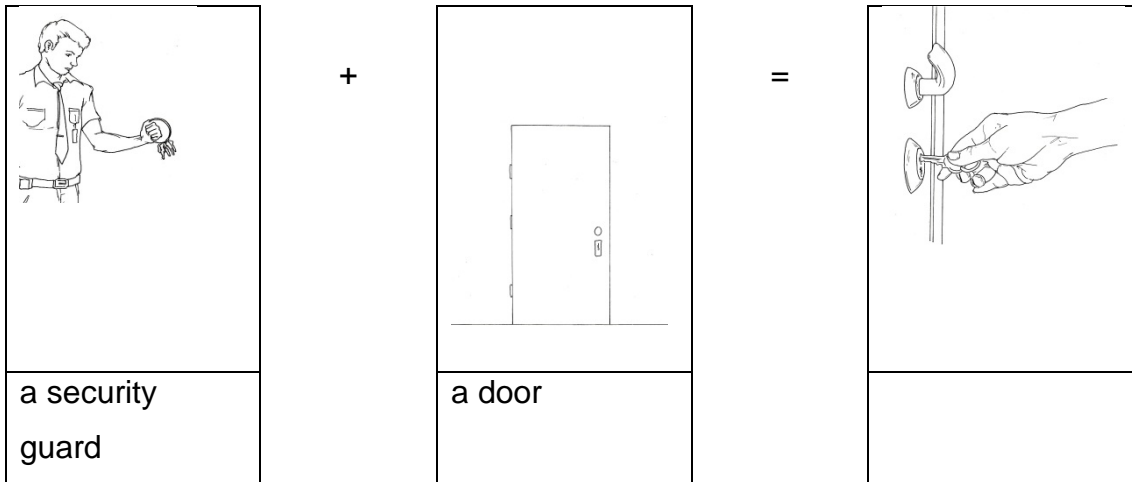
4. Right now, a security guard is working.  He has just closed a door and has put a key into the lock of the door.  He is holding the handle of the door and turning the key.  The security guard _____ _____(lock/door).  The security guard is thinking about changing his job.

| a game | + | a girl | = | |
|--------|---|--------|---|---|

5.  Right now, a girl wants to play a game on her computer.  She does not have the game yet.  The girl has found the game on the Internet.  The girl is putting the game onto her computer.  The game _____ _____(download/girl).  The girl is smiling.



| an immigration officer | + | a passport | = | |
|------------------------|---|------------|---|---|

6.  Right now, a woman is in an airport.  The woman is standing at the immigration desk.  An immigration officer is looking at the woman's passport. Her immigration officer _____ _____(check/passport).  The immigration officer is asking the woman many questions.

| | | | | |
|---|---|---|---|---|
| a puzzle | + | a student | = | |
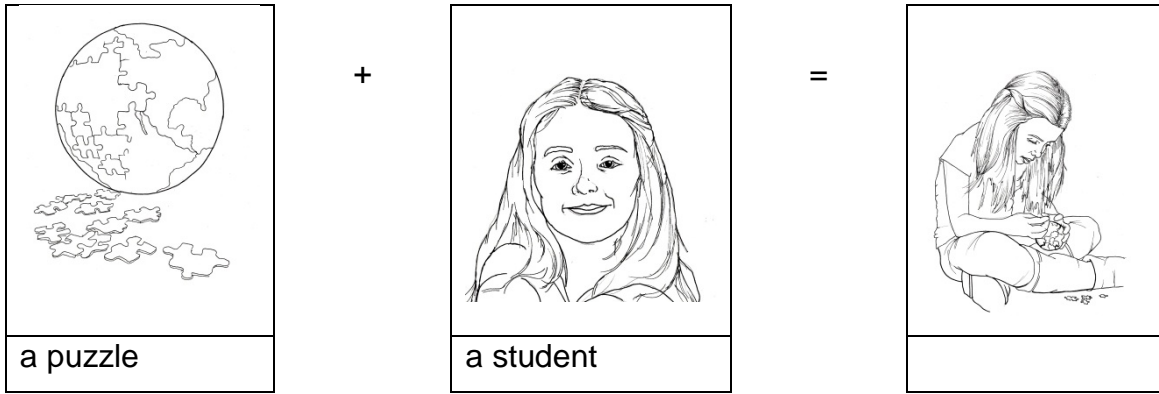
7.  Right now, a student is in a classroom.  The student has been given a puzzle by her teacher.  The student is thinking about the answer to the puzzle.  The puzzle _____ (solve/student).  The student is concentrating.

| | | | | |
|---|---|---|---|---|
| a banker | + | money | = | |

8.  Right now, a man is standing in a bank.  He is waiting for a banker to give him his money.  Before the banker gives the man his money, he needs to count it. The banker is holding the money.  The banker _____ _____ (count/money).  The man is thinking about what he will buy with his money.
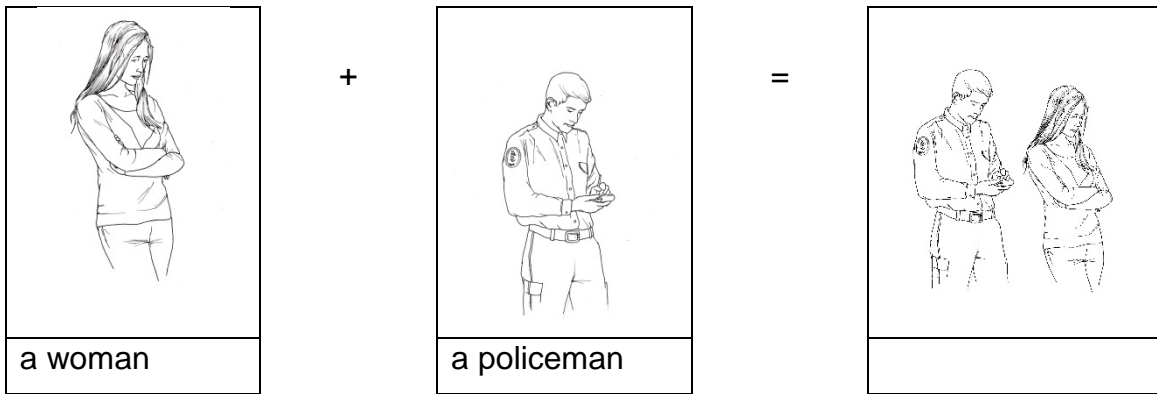
|  |  |  |  |  |
|---|---|---|---|---|
| a woman | + | a policeman | = |  |

9.  Right now, a policeman is talking to a woman.  The policeman has caught the woman stealing a dress.  The woman is telling the policeman that she did not steal.  The policeman is taking the woman to the police station.  The woman

_____

(arrest/policeman).  The woman is crying.



|  |  |  |  |  |
|---|---|---|---|---|
| a waiter | + | a table with dirty plates | = |  |

10.  Right now, a waiter is working in a restaurant.  It is the waiter's job to take the dirty plates and glasses to the kitchen.  One family has just finished eating.  The waiter is taking the dirty plates away from their table.  The waiter

_____(clear/table).  The waiter is working very hard.

*Please complete the following sentences using the words provided in the brackets.  The sentences must be grammatically correct.  The paragraph must make sense.*



| a car which is dirty | a worker | |
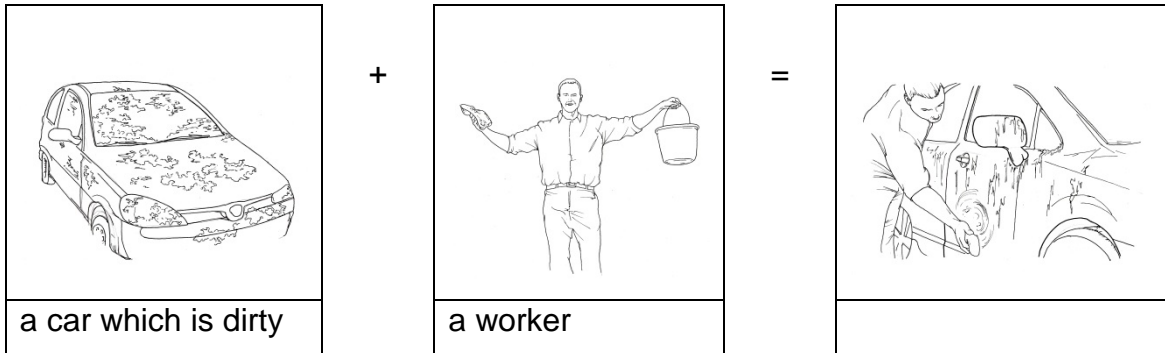
1.  Right now, a worker is cleaning a car.  The car is very dirty.  The worker is putting water on to the car.  The car _____ _____ (wash/worker).  The owner of the car is watching the worker carefully.



| a manager | a cook | |
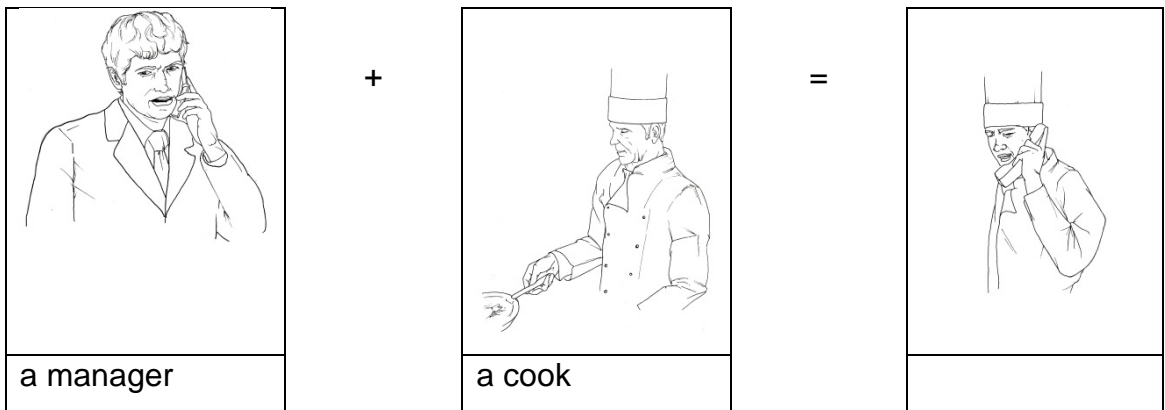
2.  Right now, there is a problem at a restaurant.  A customer wants to speak to the cook.  Nobody can find the cook.  The manager has the cook's phone number.  The manager is calling the cook's cell phone.  The manager _____ (contact/cook).  The cook is hiding in the kitchen.
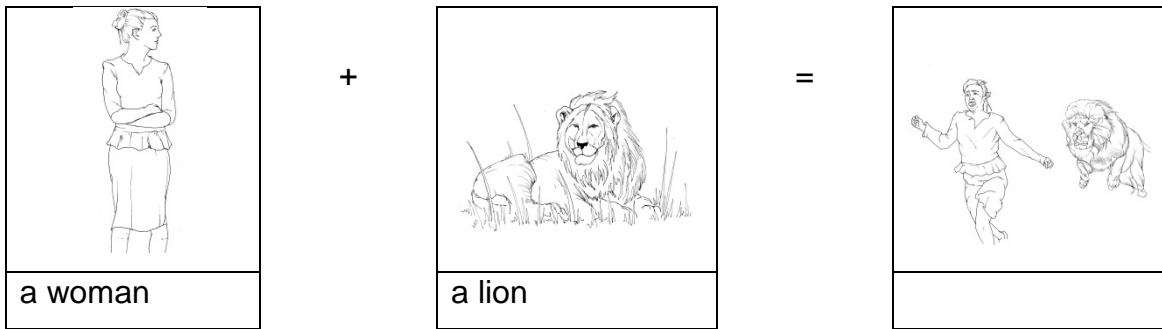
| | | | | | |
|---|---|---|---|---|---|
| a woman | + | a lion | = | | |

3.  Right now, a woman is on holiday in Africa.  Her guide has found many lions for her to photograph.  However, she is screaming.  She is screaming very loudly.  A lion is biting her.  The woman _____ _____ (attack/lion).  The other tourists are running away.

| | | | | | |
|---|---|---|---|---|---|
| a chef | + | a fish | = | | |
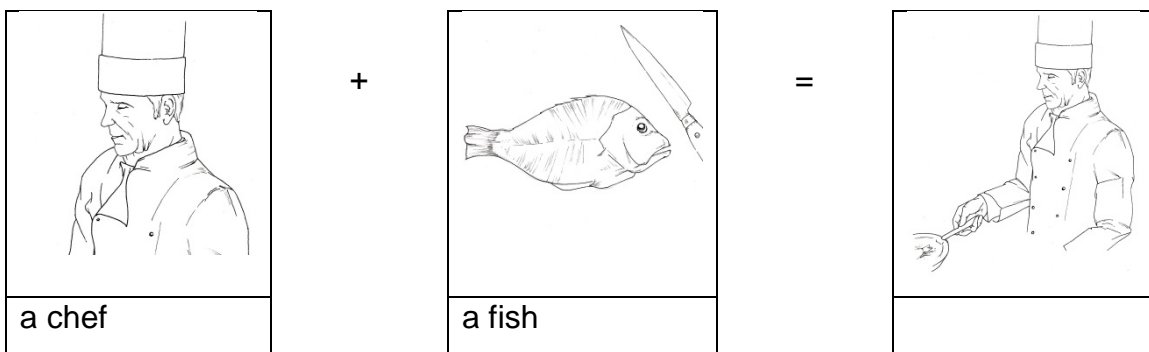
4.  Right now, a chef is working in a kitchen.  A customer has ordered fish.  The chef has put the fish into a hot pan.  The chef is turning up the heat.  The chef _____(cook/fish).  The chef is looking at the delicious fish.
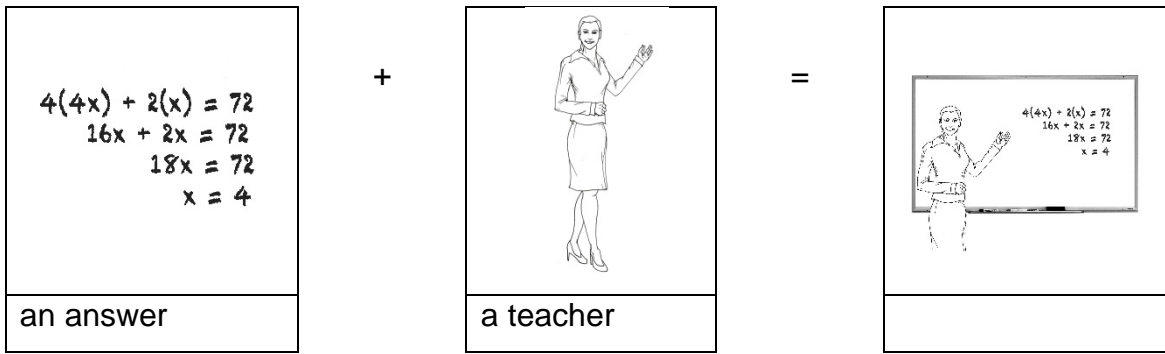
| | | | | |
|---|---|---|---|---|
| $4(4x) + 2(x) = 72$ <br> $16x + 2x = 72$ <br> $18x = 72$ <br> $x = 4$ | + | | = | |
| an answer | | a teacher | | |

5.  Right now, many students are listening to their teacher.  The teacher is giving the students the answer to a test.  Some students got the answer wrong.  The teacher is telling these students why their answer is wrong.  The answer

_____

(explain/teacher).  The students are listening carefully.

| | | | | |
|---|---|---|---|---|
| | + | DOWNLOADING <br> 30% | = | |
| a girl | | a game | | |
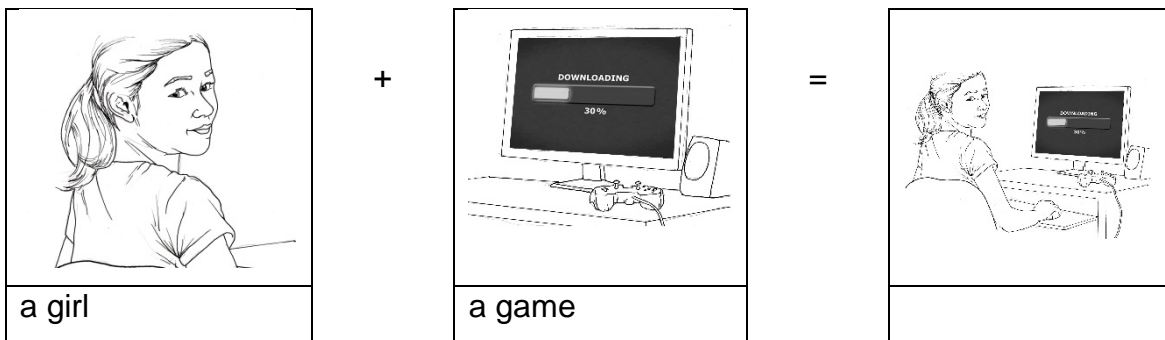
6.  Right now, a girl wants to play a game on her computer.  She does not have the game yet.  The girl has found the game on the Internet.  The girl is putting the game onto her computer.  The girl _____

_____ (download/game).  The girl is smiling.

| an exam | a teacher | |
|---------|-----------|---|
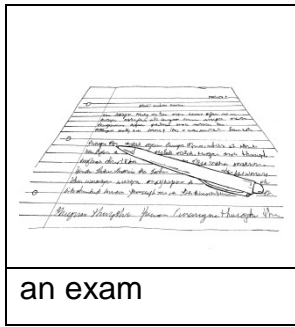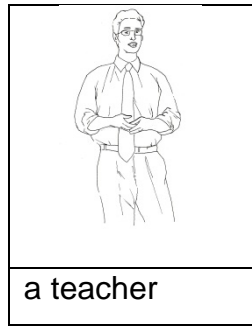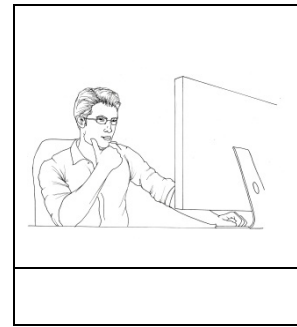
7.  Right now, a teacher is working in his office.  The teacher wants to know how much his students have learned.  He is thinking of questions for the final exam.  He is entering the questions into his computer.  The exam _____ _____(create/teacher).  The teacher is thinking about the course.
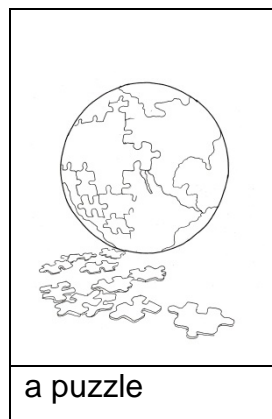


| a student | a puzzle | |
|-----------|----------|---|

8.  Right now, a student is in a classroom.  The student has been given a puzzle by her teacher.  The student is thinking about the answer to the puzzle.  The student _____ (solve/puzzle).  The student is concentrating.

| a website | + | a developer | = | |
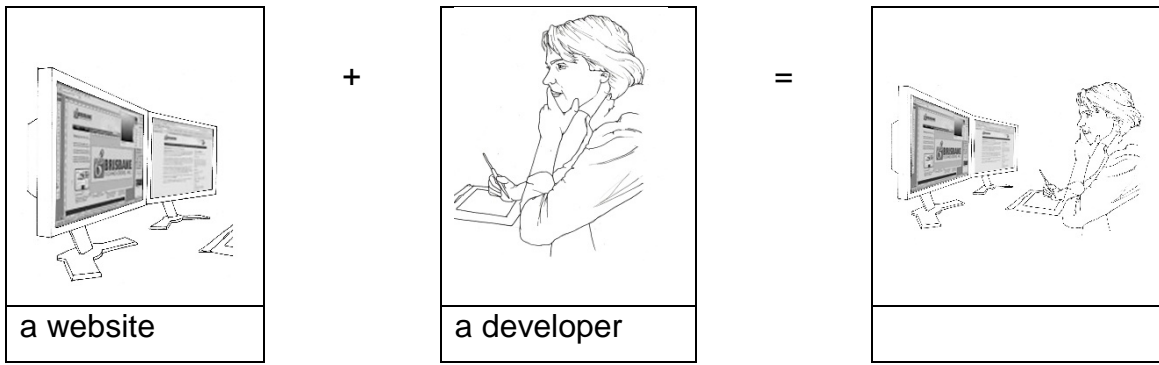
9. Right now, a developer is working in her office. She has to create a website for a company. She is carefully choosing the colors of the website. She is carefully choosing the pictures for the website. The website _____ _____ (design/developer). The developer is thinking carefully.
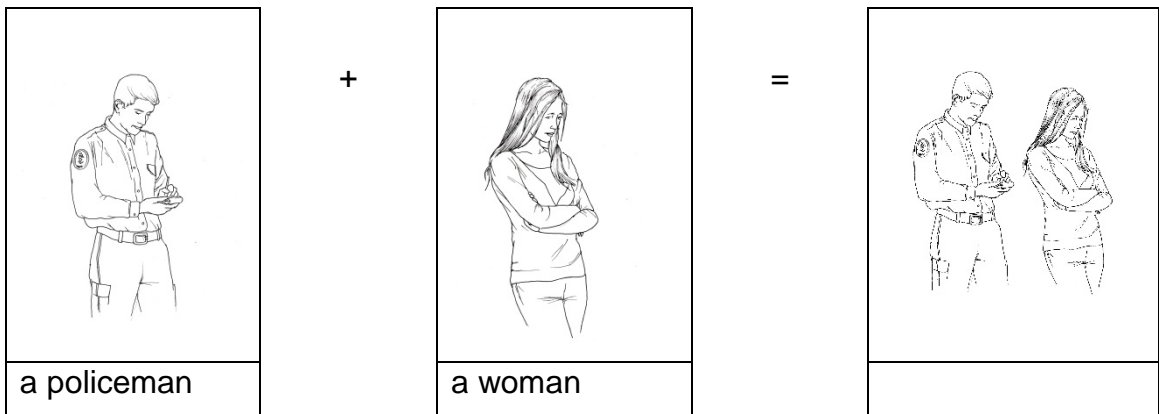


| a policeman | + | a woman | = | |

10. Right now, a policeman is talking to a woman. The policeman has caught the woman stealing a dress. The woman is telling the policeman that she did not steal. The policeman is taking the woman to the police station. The policeman _____ (arrest/woman). The woman is crying.
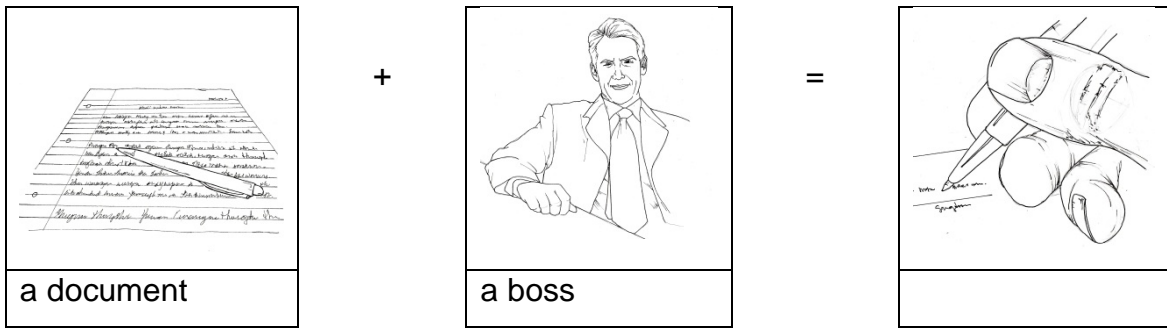
| | | | | | |
|---|---|---|---|---|---|
| a document | + | a boss | = | | |

11.  Right now, a boss is sitting in his office.  The boss has agreed to sell his company.  He is writing his name on a very important document.  The document

_____

(sign/boss).  The boss is thinking about what he will buy with his money.

*Appendix G: Scoring system for the simple past passive*

| Points awarded | Reason | Example(s) |
|---|---|---|
| | Target sentence: The puzzle was solved by the student. | |
| 0 points | no attempt | |
| | minimal attempt | The puzzle solve. <br> The puzzle solved. <br> The puzzle to solve it. |
| | sentence is written in the active voice | The puzzle solves the student. <br> The puzzle solved the student. <br> The puzzle is solving the student. <br> The puzzle was solving the student. <br> The puzzle was difficult the student solve the puzzle. <br> The puzzle was difficult the student solved it. <br> The puzzle the student was solved. <br> The puzzle a student was solving. <br> The puzzle a student solved. |
| | a grammatically incorrect passive sentence containing two or more errors | The puzzle was solve. <br> The puzzle solve by the student. <br> The puzzle solved as the student. <br> The puzzle were solve by the student. <br> The puzzle being solve by the student. <br> The puzzle have been solve by the student. |
| 1 point | main verb not inflected to make the past participle | The puzzle was solve by the student. |
| | a problem with the word 'by' | The puzzle was solved the student. <br> The puzzle was solved with the student. |

|  |  | The puzzle was solved for the student. |
|  |  | The puzzle was solved as the student. |
|  | one problem with the be verb | The puzzle solved by the student. |
|  |  | The puzzle be solved by the student. |
|  |  | The puzzle were solved by the student. |
|  |  | The puzzle being solved by the student. |
|  |  | The puzzle be was solved by the student. |
|  | sentence is correctly written in the passive voice but in the wrong tense | The puzzle is solved by the student. |
|  |  | The puzzle has been solved by the student. |
|  |  | The puzzle is being solved by the student. |
|  |  | The puzzle was being solved by the student. |
| 2 points | missing definite article 'the' | The puzzle was solved by student. |
|  | the correct answer | The puzzle was solved by the student. |

Mistakes due to incorrect spelling and punctuation were ignored. Additionally, the omission of the word 'the' was not counted as a mistake. This is because definite articles are not integral to the structure of the passive voice.

| Points awarded | Reason | Example(s) |
|---|---|---|
| | Target sentence: The puzzle is being solved by the student. | |
| 0 points | no attempt | |
| | minimal attempt | The puzzle solve. |
| | | The puzzle is solve. |
| | | The puzzle being solve. |
| | | The puzzle solving. |
| | | The puzzle is solving. |
| | sentence is written in the active voice | The puzzle solve the student. |
| | | The puzzle solves the student. |
| | | The puzzle solved the student. |
| | | The puzzle is solving the student. |
| | | The puzzle solving the student. |
| | | The puzzle was solving the student. |
| | | The puzzle the student solves. |
| | | The puzzle the student solved. |
| | | The puzzle the student is solving. |
| | | The puzzle the student was solving. |
| | | The puzzle is student solve |
| | a grammatically incorrect passive sentence containing two or more errors | The puzzle is being solve. |
| | | The puzzle is being solved. |
| | | The puzzle is solve by the student. |
| | | The puzzle was solve by the student. |
| | | The puzzle solved by the student. |
| | | The puzzle solved as the student. |
| | | The puzzle solving by the student. |
| | | The puzzle were solve by the student. |
| | | The puzzle being solve by the student. |

| | | The puzzle have been solve by the student. |
|---|---|---|
| | | The puzzle is solving by the student. |
| | | The puzzle is been solve by the student. |
| | | The puzzle solve by the student. |
| | | The puzzle which solved by the student. |
| | | The puzzle is solves by the student. |
| | | The puzzle has solving by student. |
| | | The puzzle was solving by student. |
| | | The puzzle were been solving by the student. |
| | | The puzzle it solve by student. |
| | | The puzzle being solve by the student. |
| | | The puzzle was being by the student. |
| 1 point | main verb not inflected correctly to make the past participle | The puzzle is being solve by the student. The puzzle is being solving by the student. |
| | a problem with the word 'by' | The puzzle is being solved the student. The puzzle is being solved with the student. The puzzle is being solved for the student. The puzzle is being solved as the student. |
| | one problem with a be verb | The puzzle being solved by the student. The puzzle were being solved by the student. The puzzle are being solved by the student. The puzzle is be solved by the student. The puzzle be being solved by the student. The puzzle is been solved by the student. The puzzle is beening solved by the student. |
| | sentence is correctly written in the passive voice but in the wrong tense | The puzzle is solved by the student. The puzzle was solved by the student. The puzzle was being solved by the student. |

|  |  | The puzzle has been solved by the student. |
|---|---|---|
| 2 points | missing definite article 'the' | The puzzle is being solved by student. |
|  | the correct answer | The puzzle is being solved by the student. |

Mistakes due to incorrect spelling and punctuation were ignored. Additionally, the omission of the word 'the' was not counted as a mistake. This is because definite articles are not integral to the structure of the passive voice.

*Appendix I: How the test items were validated*

*Facility index*

A facility index measures how easy or difficult a question is for the test takers by showing the proportion of test takers who answered an item correctly.  The following formula was used to calculate the facility index for each test item.

$$Fi = \frac{\text{the mean score for each question}}{\text{the maximum possible score for each question}} \times 100$$

Facility index scores range from 100% to 0%.  A high value indicates that a greater proportion of the test takers responded to the item correctly; a low value equates to greater item difficulty.  A test composed of items with mid-levels of difficulty will be more reliable than a test composed of items with highly divergent difficulties (i.e. only very hard or very easy test items).  Anderson and Morgan (2008, p.81) suggest that for test items that are partially scored an acceptable facility index range for an individual test items is 40% - 80%.

The facility index range adopted for the structure of the past simple passive was 40% - 80%.  One simple past passive test item was removed from the test bank due to its facility index score.  The remaining 24 test items have facility indexes ranging from 41.304% to 77.906%.  Due to the prevalence of lower test scores, the facility index range adopted for the structure of the present continuous passive was 30% - 80%.  Two present continuous passive test items were removed from the test bank due to their facility index scores.  The remaining 24 test items have facility indexes ranging from 30% to 47.143%.

*Discrimination index*

The discrimination index "is a measure of the effectiveness of an item in discriminating between high and low scorers on a test" (Aiken, 2003, p.66). If the test and a test item measure the same linguistic knowledge, then it is expected that test takers with a high overall test score would have a high probability of being able to correctly answer a test item. The following formula was used to calculate the discrimination index.

$$Di = \frac{(H/2) - (L/2)}{27\% \text{ of participants}}$$

H = number of correct answers to an item among the 27% of those with the highest test scores
L = number of correct answers to an item among the 27% of those with the lowest test scores

The total scores of the high-scoring and low-scoring test takers were adjusted for partial scoring by dividing them by two. High-scoring and low-scoring test takers are operationalized as the "upper and lower groups consisting of twenty-seven per cent from the extremes of the criterion score distribution" (Kelly, 1939, p.24). Discrimination index scores range from -1.00 to +1.00. The higher the score the more discriminating the item is considered to be. Cohen et al. (2007, p.423) suggest that items which have a discrimination index score of less than 0.67 may be too 'undiscriminating'. This cut-off point was adopted for all test items.

Three simple past passive test items were removed from the test bank due to their low discrimination index scores. The remaining 21 test items have discrimination index scores ranging from 0.667 to 0.958. No present continuous passive test items were removed from the test bank due to their low

discrimination index scores. The remaining 24 test items have discrimination index scores above 0.67.

*Cronbach's alpha*

The Cronbach's alpha coefficient indicates how well a group of items measure the same trait. Other things being equal, the higher the Cronbach's alpha score, the more reliable the test is considered to be. The following formula was used to calculate the Cronbach's alpha coefficient for each test version.

$$alpha = \frac{nr_{ii}}{1 + (n - 1)r_{ii}}$$

$n$ = the number of items in the version of the test
$r_{ii}$ = the average of all the inter-item correlations

(Cohen et al., 2007, p.506)

As there were five test versions, five Cronbach's alpha scores were calculated for each test bank. Test items which had been removed from their respective test bank due to their facility index or their discrimination index were excluded from the Cronbach's alpha coefficient calculations. Cronbach's alpha scores range from 0 to 1. The higher the Cronbach's alpha score, the more reliable the test is considered to be. Cohen et al. (2007, p.506) suggest that a Cronbach's alpha score of above 0.70 indicates that a test is 'reliable'. This cut-off point was adopted for each test version.

No test items were removed due to a Cronbach's alpha score. The scores for each version within the simple past passive test bank ranged from 0.738 to

0.882; the scores for each version within the present continuous passive test bank ranged from 0.898 to 0.923.

*Appendix J: Item statistics for the structure of the simple past passive*

| Question Number | Target Sentence | Verb | No. of Words | No. of Sentences | Flesch-Kincaid Scale | BNC-COCA 1-12k | Words Excluded from BNC-COCA 1-12k | | Facility Index | Discrimination Index (by hand after adjusting for partial scoring) | Cronbach Alpha (excluding removed test items) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | Visually Depicted | Not Visually Depicted | | | |
| 1 | *The cat was killed by the car. | killed | 49 | 7 | 97.9 | first | | | 77.906 | 0.542 | 0.738 |
| 2 | The door was locked by the security guard. | locked | 50 | 5 | 83.3 | second | | | 74.418 | 0.708 | |
| 3 | The child was helped | helped | 45 | 6 | 80.8 | second | | | 61.628 | 0.75 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | by the security guard. | | | | | | | | | | |
| 4 | *The window was closed by the teacher. | closed | 39 | 7 | 86.2 | second | | | 74.418 | 0.542 | |
| 5 | The cat was rescued by the policeman. | rescued | 53 | 7 | 87.4 | third | policeman | | 61.628 | 0.667 | |
| 6 | The car was repaired by the mechanic. | repaired | 45 | 6 | 92.1 | second | mechanic | | 60.465 | 0.917 | 0.882 |
| 7 | The door | opened | 38 | 5 | 87.8 | secon | | | 63.95 | 0.708 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | was opened by the student. | | | | | d | | | 3 | | |
| 8 | The table was cleared by the waiter. | cleared | 44 | 6 | 80.2 | second | waiter | | 62.791 | 0.833 | |
| 9 | The assignment was printed by the student. | printed | 51 | 5 | 80.4 | second | assignment | | 62.791 | 0.875 | |
| 10 | The picture was painted by the artist. | painted | 50 | 6 | 81.6 | second | | | 61.628 | 0.917 | |
| 11 | The essay was graded by | graded | 40 | 6 | 88 | second | essay | | 64.773 | 0.792 | 0.814 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | the teacher. | | | | | | | | | | |
| 12 | The puzzle was solved by the student. | solved | 43 | 6 | 75.6 | second | puzzle | | 62.5 | 0.833 | |
| 13 | The flower was discovered by the scientist. | discovered | 43 | 7 | 76.7 | second | | | 57.955 | 0.875 | |
| 14 | The mountain was climbed by the explorer. | climbed | 49 | 6 | 70.8 | second | explorer | | 53.409 | 0.917 | |

| 15 | The game was downloaded by the girl. | downloaded | 43 | 5 | 91.9 | first | | downloaded | 70.455 | 0.667 | |
| 16 | The language was changed by the translator. | changed | 49 | 6 | 76.6 | third | | | 60.976 | 0.773 | 0.828 |
| 17 | The ball was kicked by the boy. | kicked | 35 | 4 | 98.9 | first | | | 58.537 | 0.864 | |
| 18 | The question was answered by the student. | answered | 43 | 6 | 73.6 | second | | | 58.537 | 0.864 | |

| 19 | *The cook was contacted by the manager | contacted | 48 | 7 | 82.3 | third | | | 35.366 | 0.773 | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 20 | The poem was memorized by the student. | memorized | 36 | 5 | 72.6 | second | | | 47.501 | 0.909 | |
| 21 | *The prisoner was watched by the guard. | watched | 37 | 6 | 72.5 | second | | | 41.304 | 0.625 | 0.845 |
| 22 | The fish was cooked by the chef. | cooked | 40 | 6 | 94.3 | second | chef | | 61.957 | 0.833 | |

| 23 | The money was counted by the banker. | counted | 50 | 5 | 86.6 | first | | | 58.696 | 0.958 | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 24 | The passport was checked by the immigration officer. | checked | 38 | 5 | 55.7 | second | passport, immigration officer | airport | 64.130 | 0.75 | |
| 25 | The woman was attacked by the lion. | attacked | 49 | 7 | 96.1 | second | | Africa | 56.522 | 0.75 | |

* = Item removed from test bank

*Appendix K: Item statistics for the structure of the present continuous passive*

| Question Number | Target Sentence | Verb | No. of Words | No. of Sentences | Flesch-Kincaid Scale | BNC-COCA 1-12k | Words Excluded from BNC-COCA 1-12k | | Facility Score | Discrimination Index (by hand after adjusting for partial scoring) | Cronbach Alpha (excluding removed test items) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Visually Depicted | Not Visually Depicted | | | |
| 1 | *The lion is being watched by the tourist. | watched | 42 | 6 | 86.9 | second | | Africa | 29.729 | 0.75 | 0.898 |
| 2 | The picture is being painted by the artist. | painted | 38 | 6 | 80.2 | first | | | 31.081 | 0.85 | |
| 3 | The house is being cleaned by | cleaned | 41 | 5 | 95.3 | first | maid | | 37.838 | 0.95 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | the maid. | | | | | | | | | | |
| 4 | The cat is being rescued by the security guard. | rescued | 51 | 6 | 85.4 | third | | | 31.081 | 0.8 | |
| 5 | The patient is being advised by the doctor. | advised | 43 | 5 | 80.1 | second | | | 33.784 | 0.85 | |
| 6 | The car is being repaired by the mechanic. | repaired | 49 | 5 | 81.6 | second | mechanic | | 39.189 | 0.85 | 0.913 |
| 7 | The woman is being interviewed by the manager. | interviewed | 51 | 6 | 75.5 | second | | | 35.135 | 0.9 | |

| 8 | The essay is being graded by the teacher. | graded | 41 | 4 | 78.8 | second | essay | | 37.838 | 0.9 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | The mountain is being climbed by the explorer. | climbed | 48 | 5 | 73.7 | second | explorer | | 33.784 | 0.85 | |
| 10 | *The tree is being planted by the gardener. | planted | 57 | 5 | 81 | second | | | 27.027 | 0.75 | |
| 11 | The plant is being watered by the girl. | watered | 56 | 7 | 97.5 | second | | | 30.556 | 0.75 | 0.921 |

| 12 | The door is being locked by the security guard. | locked | 54 | 5 | 83.1 | first | guard | | 45.833 | 0.95 | |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 13 | The passport is being checked by the immigration officer. | checked | 43 | 5 | 57.5 | second | passport, immigration officer | airport | 40.278 | 0.9 | |
| 14 | The money is being counted by the banker. | counted | 59 | 6 | 87.9 | first | | | 37.5 | 0.8 | |
| 15 | The table is being cleared by | cleared | 55 | 6 | 78 | second | waiter | | 38.889 | 0.9 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | the waiter. | | | | | | | | | | |
| 16 | The cook is being contacted by the manager. | contacted | 52 | 7 | 86.2 | third | | | 31.429 | 0.778 | 0.918 |
| 17 | The fish is being cooked by the chef. | cooked | 47 | 6 | 94.5 | second | chef | | 44.286 | 0.944 | |
| 18 | The game is being downloaded by the girl. | downloaded | 49 | 6 | 93.2 | first | | download | 32.857 | 1 | |
| 19 | The puzzle is being solved by the student. | solved | 40 | 5 | 78.2 | second | | | 42.857 | 0.944 | |

| 20 | The woman is being arrested by a policeman. | arrested | 51 | 6 | 65.5 | second | policeman | | 32.857 | 0.778 | |
|----|------|------|------|------|------|------|------|------|------|------|------|
| 21 | The car is being washed by the worker. | washed | 40 | 5 | 82.4 | first | | | 47.143 | 0.944 | 0.923 |
| 22 | The woman is being attacked by the lion. | attacked | 47 | 7 | 75.8 | second | | Africa | 30 | 0.667 | |
| 23 | The answer is being explained by the teacher. | explained | 50 | 6 | 74.9 | first | | | 45.714 | 1 | |
| 24 | The exam is being | created | 52 | 6 | 80.9 | second | | | 42.857 | 0.833 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | created by the teacher. | | | | | | | | | | |
| 25 | The website is being designed by the developer. | designed | 49 | 6 | 67.3 | second | website | | 34.286 | 0.889 | |
| 26 | The document is being signed by the boss. | signed | 47 | 5 | 83.9 | second | document | | 35.714 | 1 | |

* = Item removed from test bank

*Appendix L: Test bank for the structure of the simple past passive*

* = Item removed from test bank

*1. The cat was killed by the car. (removed from test bank due to low discrimination index)
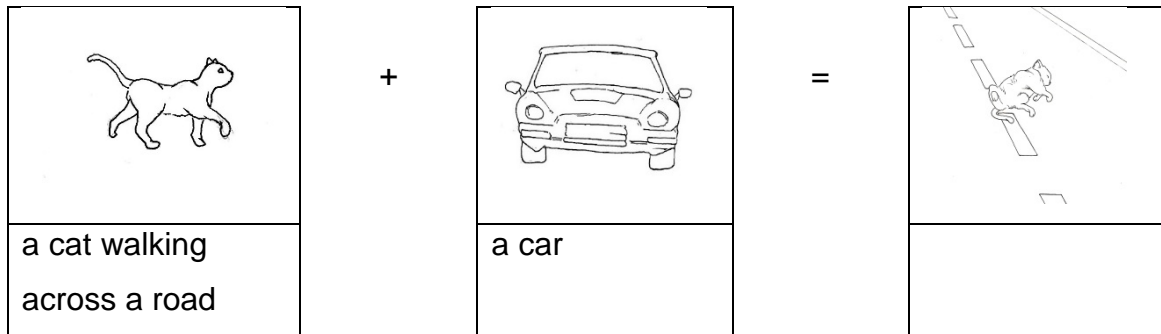
| | | | | |
|---|---|---|---|---|
| a cat walking across a road | + | a car | = | |

Yesterday, a cat was walking across a road.  Also, there was a car driving on the road.  The car was driving very fast.  The car tried to slow down but could not.  The car hit the cat.  The cat _____ _____(kill/car).  The driver was very sad.


Yesterday, a cat was walking across a road.  Also, there was a car driving on the road.  The car was driving very fast.  The car tried to slow down but could not.  The car hit the cat.  The cat was killed by the car.  The driver was very sad.


2.  The door was locked by the security guard.
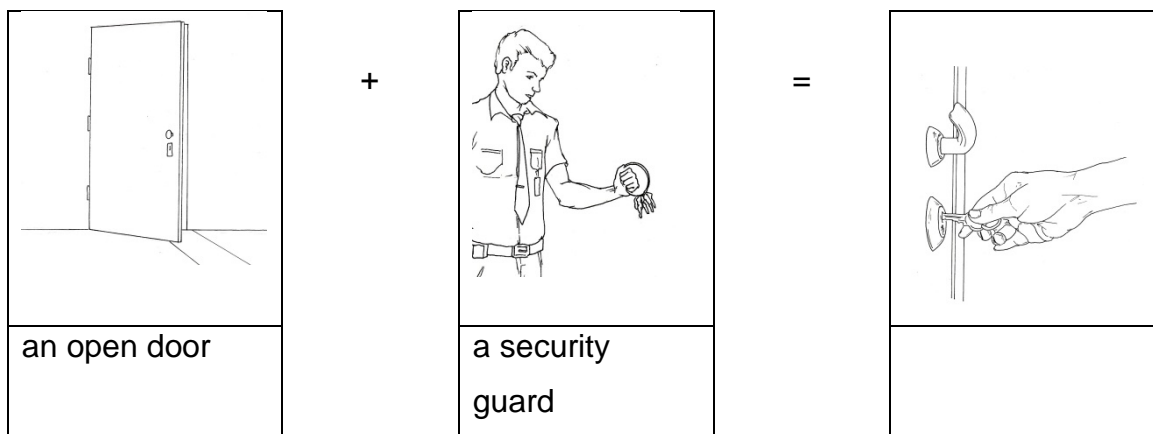
| | | | | |
|---|---|---|---|---|
| an open door | + | a security guard | = | |

Yesterday, a security guard was walking through the school and saw an open door.  The security guard closed the door.  Then, he took his keys out of his pocket.  The door _____ _____(lock/security guard).  The children tried to open the door but the door would not open.

Yesterday, a security guard was walking through the school and saw an open door.  The security guard closed the door.  Then, he took his keys out of his pocket.  The door was locked by the security guard.  The children tried to open the door but the door would not open.

3.  The child was helped by the security guard.
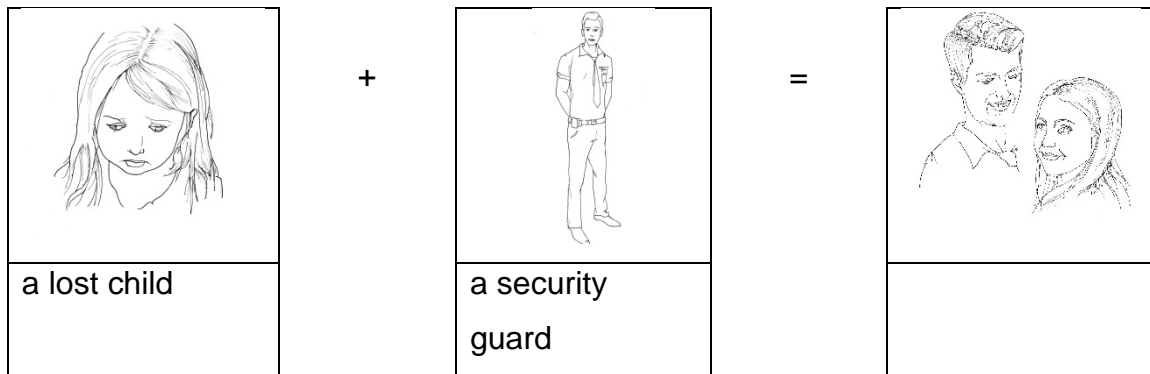


| | | |
|---|---|---|
| a lost child | a security guard | |

Yesterday, a child was walking through a park.  She was lost and could not find her family.  The child saw a security guard.  The child explained her problem to the security guard.  The child _____ _____(help/security guard).  The child found her family.

Yesterday, a child was walking through a park.  She was lost and could not find her family.  The child saw a security guard.  The child explained her problem to the security guard.  The child was helped by the security guard.  The child found her family.

*4.  The window was closed by the teacher. (removed from test bank due to low discrimination index)
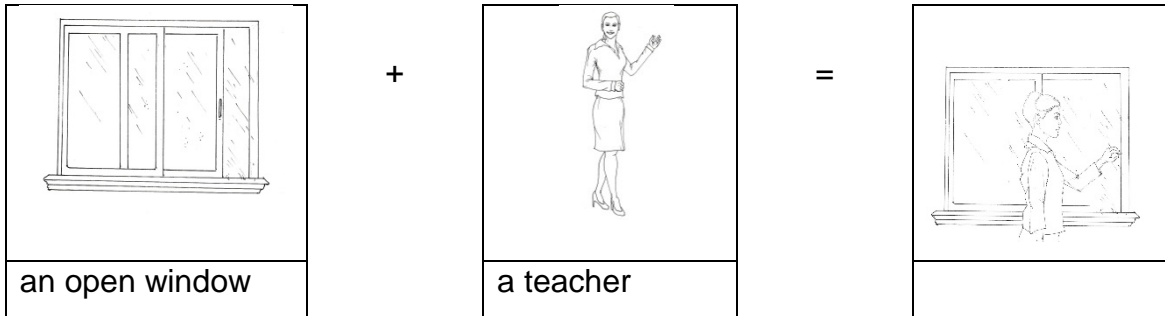


| | | |
|---|---|---|
| an open window | a teacher | |

Last lesson, a teacher was teaching his class.  It started to rain.  The window was open.  Some students complained.  The teacher decided to close the window.  The window _____ _____(close/teacher).  The students did not get wet.

Last lesson, a teacher was teaching his class.  It started to rain.  The window was open.  Some students complained.  The teacher decided to close the window.  The window was closed by the teacher.  The students did not get wet.

5.  The cat was rescued by the policeman.
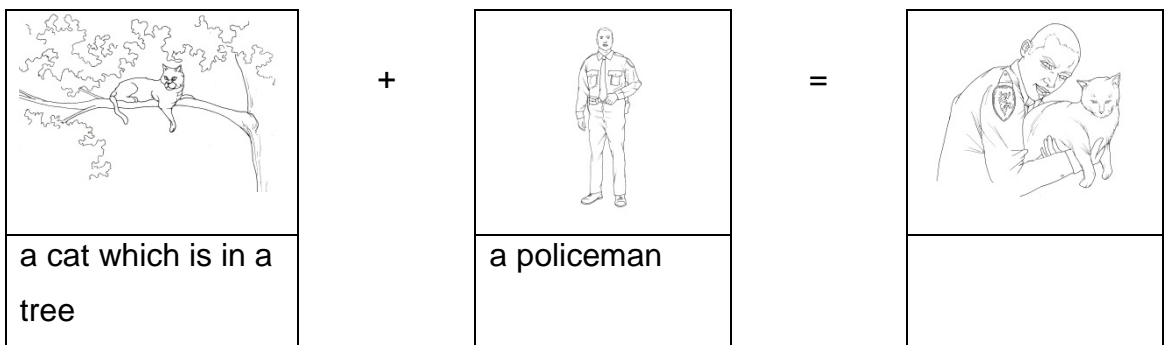


| | | |
|---|---|---|
| a cat which is in a tree | a policeman | |

Yesterday, a cat climbed to the top of a tree.  The cat became scared and could not climb down.  The cat started to cry.  A policeman heard the cat.  The policeman climbed the tree and helped the cat.  The cat _____ _____(rescue/policeman).  The owners of the cat were very thankful.

Yesterday, a cat climbed to the top of a tree. The cat became scared and could not climb down. The cat started to cry. A policeman heard the cat. The policeman climbed the tree and helped the cat. The cat was rescued by the policeman. The owners of the cat were very thankful.

6. The car was repaired by the mechanic.
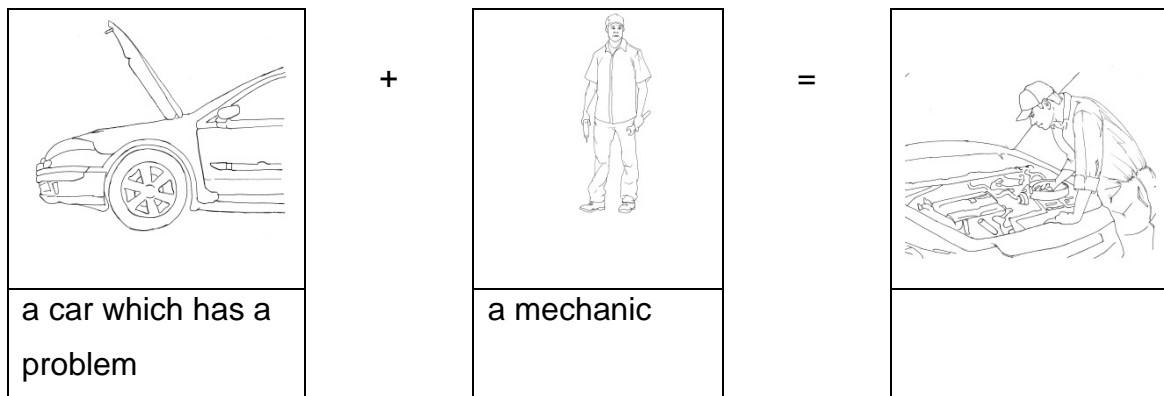


| | | |
|---|---|---|
| a car which has a problem | a mechanic | |

Last week, a man had a problem with his car. The car would not start. The man took the car to a mechanic. The mechanic knew how to fix the problem. The car _____ (repair/mechanic). The man happily drove his car home.

Last week, a man had a problem with his car. The car would not start. The man took the car to a mechanic. The mechanic knew how to fix the problem. The car was repaired by the mechanic. The man happily drove his car home.

7. The door was opened by the student.
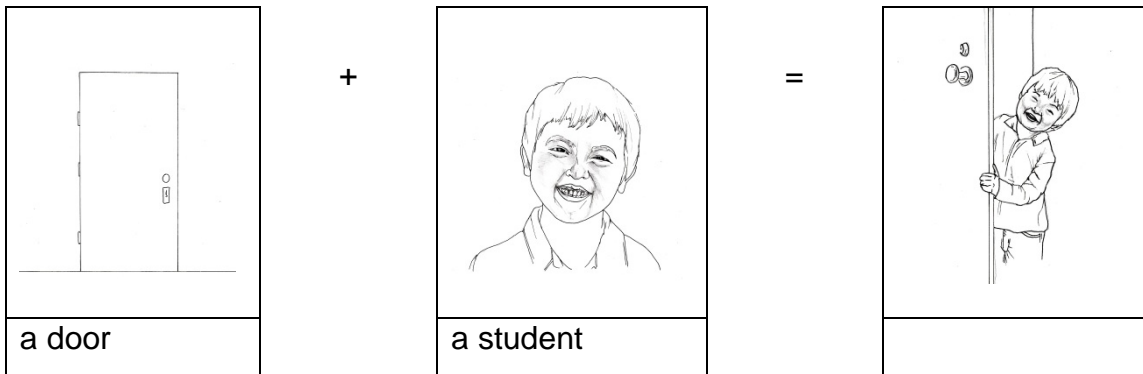


| a door | + | a student | = | |

Last lesson, a teacher was teaching his class.  The room was very hot because the door was closed.  A student decided to open the door.  The door _____ _____ (open/student).  Fresh air came into the room.

Last lesson, a teacher was teaching his class.  The room was very hot because the door was closed.  A student decided to open the door.  The door was opened by the student.  Fresh air came into the room.

8. The table was cleared by the waiter.
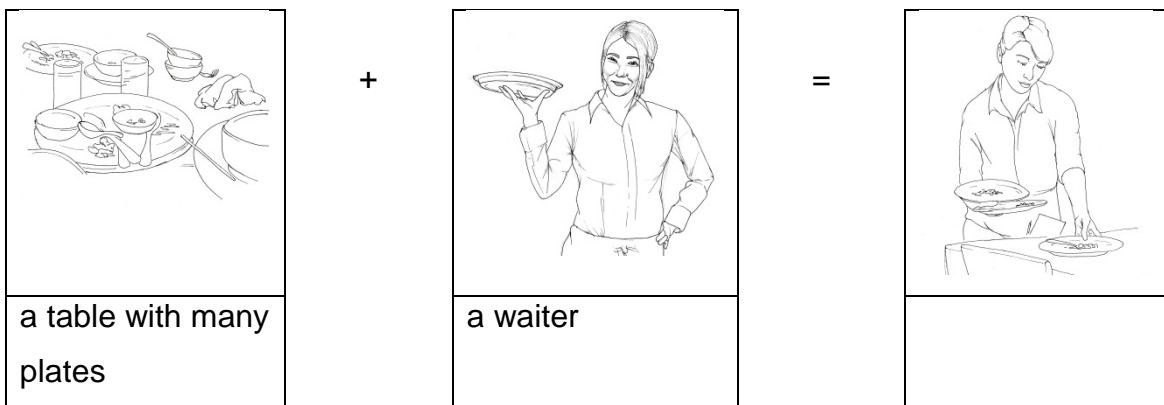


| a table with many plates | + | a waiter | = | |

Last night, a family was eating in a restaurant.  The family ate lots of food. There were many plates on the table.  The family asked the waiter to take the plates away.  The table _____ (clear/waiter).  The family thanked the waiter.
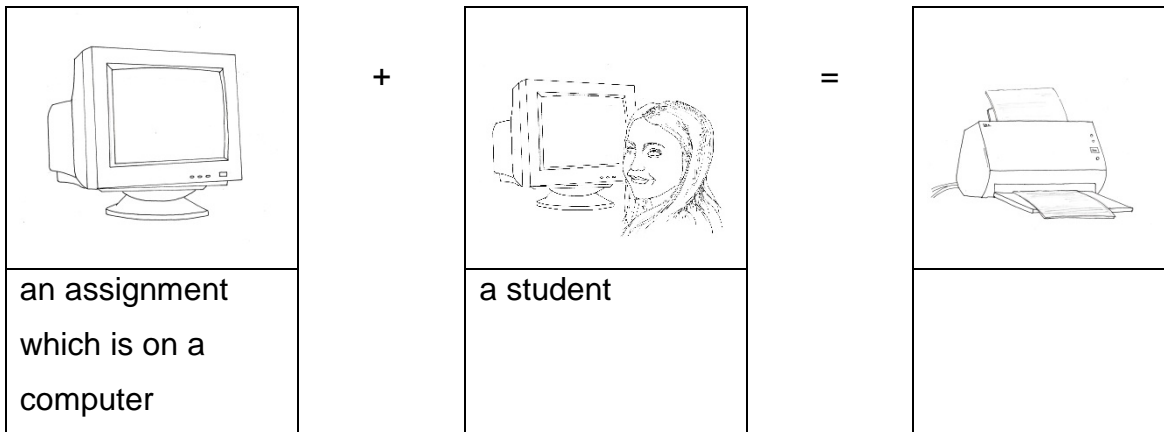
Last night, a family was eating in a restaurant.  The family ate lots of food.
There were many plates on the table.  The family asked the waiter to take the
plates away.  The table was cleared by the waiter.  The family thanked the
waiter.

9.  The assignment was printed by the student.

| | | | | | |
|---|---|---|---|---|---|
| an assignment which is on a computer | + | a student | | = | |

Last night, a student finished her assignment.  She needed to give the
assignment to the teacher at the start of her next class.  The student turned on
the printer.  The assignment _____
_____(print/student).  The student gave the assignment to
her teacher at the start of the next lesson.

Last night, a student finished her assignment.  She needed to give the
assignment to the teacher at the start of her next class.  The student turned on
the printer.  The assignment was printed by the student.  The student gave the
assignment to her teacher at the start of the next lesson.

10.  The picture was painted by the artist.

| | | | | | |
|---|---|---|---|---|---|
| a picture | + | an artist | = | |

Last year, an artist had an idea.  The artist wanted to paint a picture of the desert.  The artist went to the desert with her equipment.  The artist worked in the desert for many hours.  The picture _____ _____(paint/artist).  The artist sold the picture for 5000 dollars.

Last year, an artist had an idea.  The artist wanted to paint a picture of the desert.  The artist went to the desert with her equipment.  The artist worked in the desert for many hours.  The picture was painted by the artist.  The artist sold the picture for 5000 dollars.

11.  The essay was graded by the teacher.
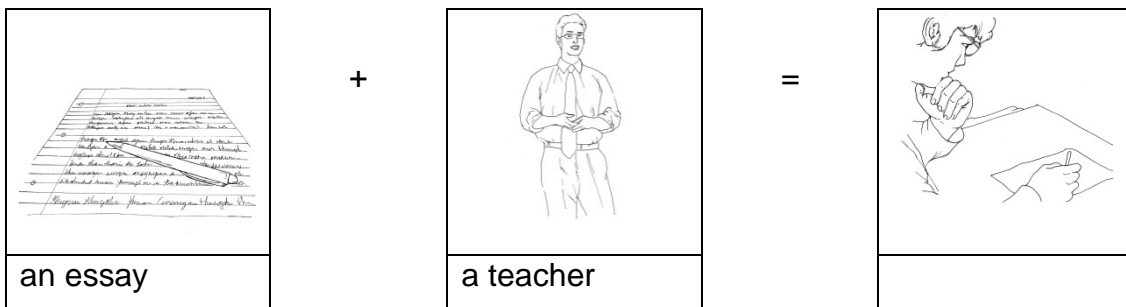
| | | | | |
|---|---|---|---|---|
| an essay | + | a teacher | = | |

Last lesson, a student wrote an essay.  The essay had 2000 words.  The student gave the essay to the teacher.  The teacher carefully read the essay.  The essay _____ (grade/teacher).  The teacher gave the essay an A.
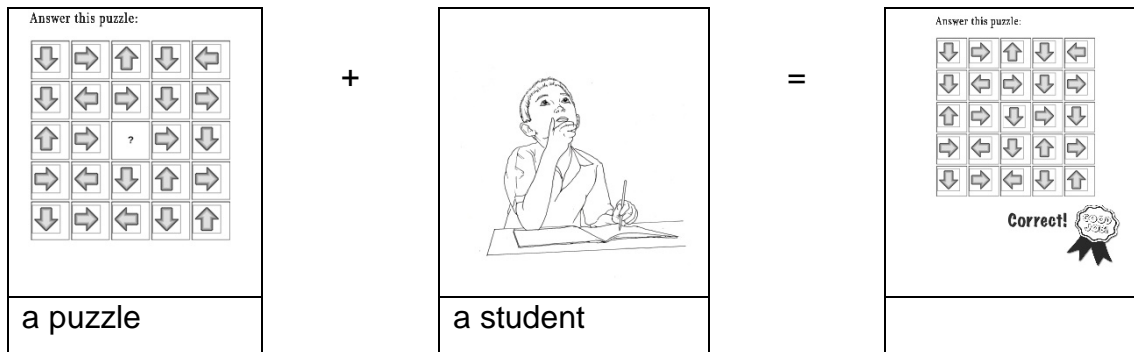
Last lesson, a student wrote an essay.  The essay had 2000 words.  The student gave the essay to the teacher.  The teacher carefully read the essay.  The essay was graded by the teacher.  The teacher gave the essay an A.

12.  The puzzle was solved by the student.

| a puzzle | a student | |
|---|---|---|

Last lesson, a teacher gave a puzzle to his students.  The puzzle was very difficult.  Many students could not find the answer to the puzzle.  Finally, one student found the answer.  The puzzle _____ _____(solve/student).  The teacher was very pleased.
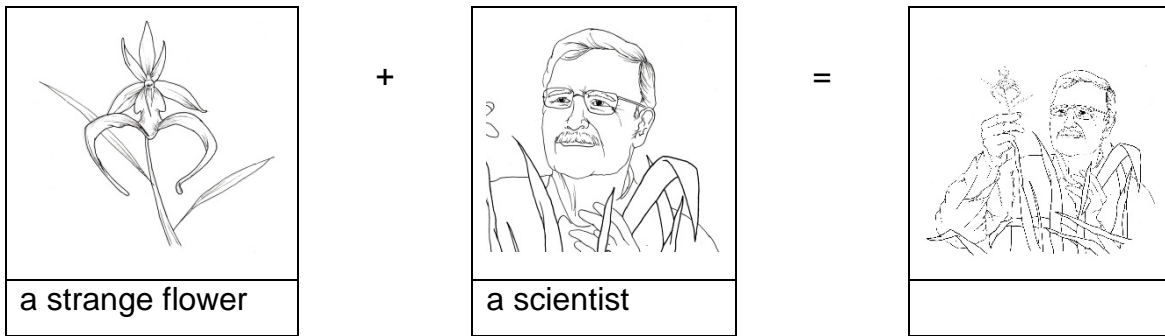
Last lesson, a teacher gave a puzzle to his students.  The puzzle was very difficult.  Many students could not find the answer to the puzzle.  Finally, one student found the answer.  The puzzle was solved by the student.  The teacher was very pleased.

13. The flower was discovered by the scientist.

| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a strange flower | | a scientist | | |

Last year, a scientist was climbing a mountain.  The scientist saw an interesting flower.  The flower was a strange shape.  The scientist took the flower home.  The flower was new to everyone.  The flower _____

_____(discover/scientist).  The scientist became famous.

Last year, a scientist was climbing a mountain.  The scientist saw an interesting flower.  The flower was a strange shape.  The scientist took the flower home.  The flower was new to everyone.  The flower was discovered by the scientist.  The scientist became famous.

14. The mountain was climbed by the explorer.
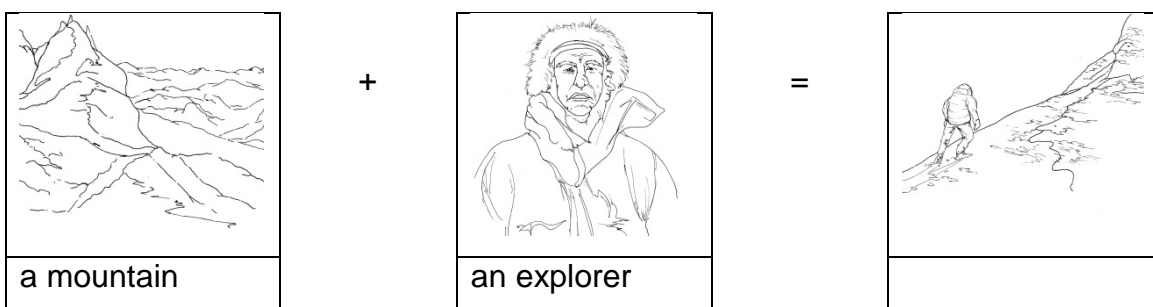
| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a mountain | | an explorer | | |

Last year, an explorer decided to climb a mountain.  The explorer went to the mountain and started to climb.  The explorer spent many days going up the mountain.  Finally, the explorer reached the top of the mountain.  The mountain
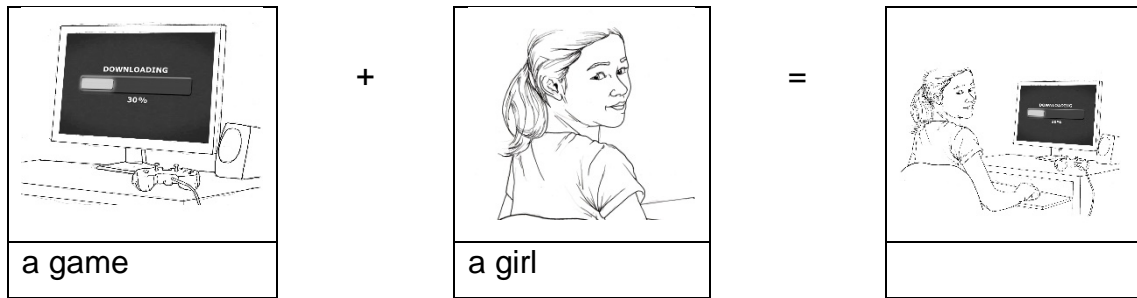
_____

(climb/explorer).  The explorer was very happy.

Last year, an explorer decided to climb a mountain.  The explorer went to the mountain and started to climb.  The explorer spent many days going up the mountain.  Finally, the explorer reached the top of the mountain.  The mountain was climbed by the explorer.  The explorer was very happy.

15.  The game was downloaded by the girl.



a game          +          a girl          =

Last night, a girl wanted to play a game on her computer.  The girl found the game on the Internet.  The girl put the game onto her computer.  The game

_____

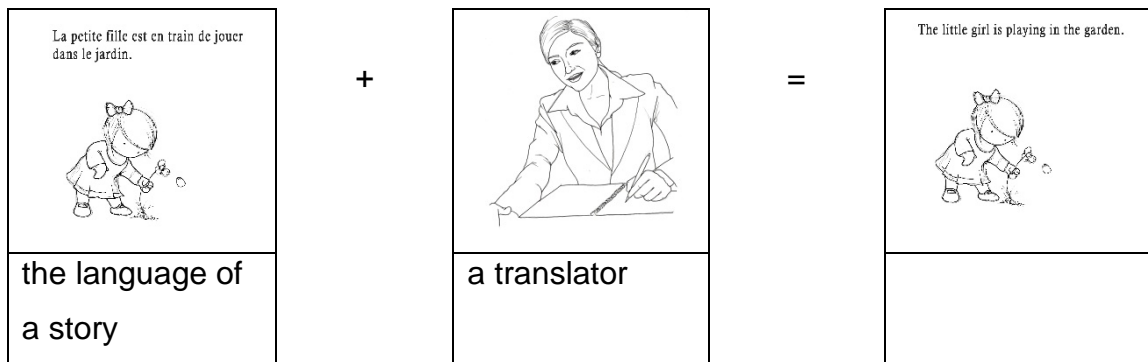(download/girl).  The girl played the game for many hours.

Last night, a girl wanted to play a game on her computer.  The girl found the game on the Internet.  The girl put the game onto her computer.  The game was downloaded by the girl.  The girl played the game for many hours.

16. The language was changed by the translator.

| the language of a story | + | a translator | = | |
|---|---|---|---|---|

Last year, an author wrote a story.  The author wanted many people to read the story.  The author gave the story to a translator.  The translator wrote the author's story in a different language.  The language _____ _____ (change/translator).  Many people were able to read the book.
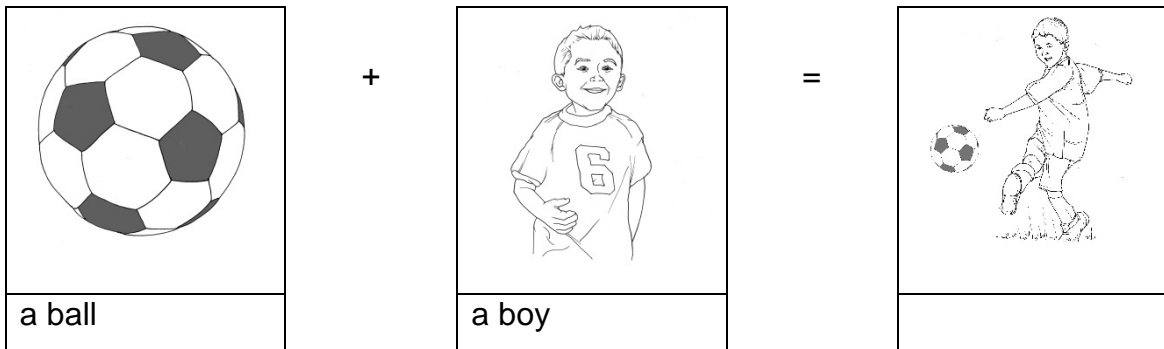
Last year, an author wrote a story.  The author wanted many people to read the story.  The author gave the story to a translator.  The translator wrote the author's story in a different language.  The language was changed by the translator.  Many people were able to read the book.

17. The ball was kicked by the boy.



a ball    +    a boy    =

Yesterday, a boy was playing with a ball.  The boy decided to kick the ball as far as he could.  The ball _____ _____(kick/boy).  The boy did not see his ball again.

Yesterday, a boy was playing with a ball.  The boy decided to kick the ball as far as he could.  The ball was kicked by the boy.  The boy did not see his ball again.

18. The question was answered by the student.
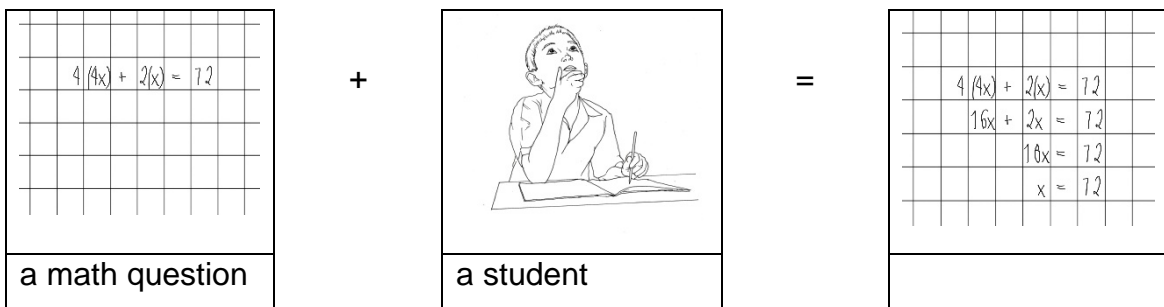


a math question    +    a student    =

Last lesson, a teacher asked his students a math question.  The question was very difficult.  Many students could not find the answer to the question.  Finally, one student found the answer.  The question _____ _____(answer/student).  The teacher was very pleased.

Last lesson, a teacher asked his students a math question.  The question was very difficult.  Many students could not find the answer to the question.  Finally, one student found the answer.  The question was answered by the student.  The teacher was very pleased.

*19.  The cook was contacted by the manager. (removed from test bank due to low facility index)

| a cook | + | a manager | = | |
|---|---|---|---|---|

Yesterday, there was a problem at a restaurant.  A customer wanted to speak to the cook.  Nobody could find the cook.  The manager had the cook's phone number.  The manager called his cell phone.  The cook _____ _____ (contact/manager).  The cook was hiding in the kitchen.

Yesterday, there was a problem at a restaurant.  A customer wanted to speak to the cook.  Nobody could find the cook.  The manager had the cook's phone number.  The manager called his cell phone.  The cook was contacted by the manager.  The cook was hiding in the kitchen.

20.  The poem was memorized by the student.
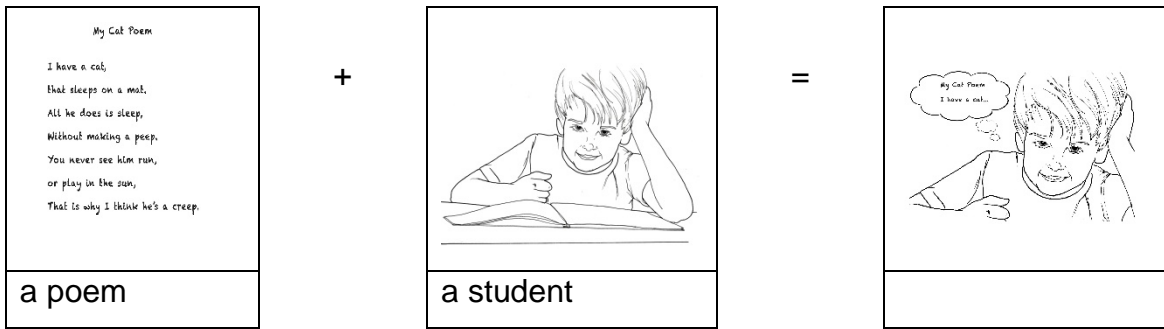


| | | |
|---|---|---|
| a poem | a student | |

Last lesson, the teacher read his students a poem.  The poem was very beautiful.  A student decided that she wanted to remember the poem.  The poem _____ (memorize/student).  The teacher felt very proud.

Last lesson, the teacher read his students a poem.  The poem was very beautiful.  A student decided that she wanted to remember the poem.  The poem was memorized by the student.  The teacher felt very proud.

*21.  The prisoner was watched by the guard. (removed from test bank due to low discrimination index)
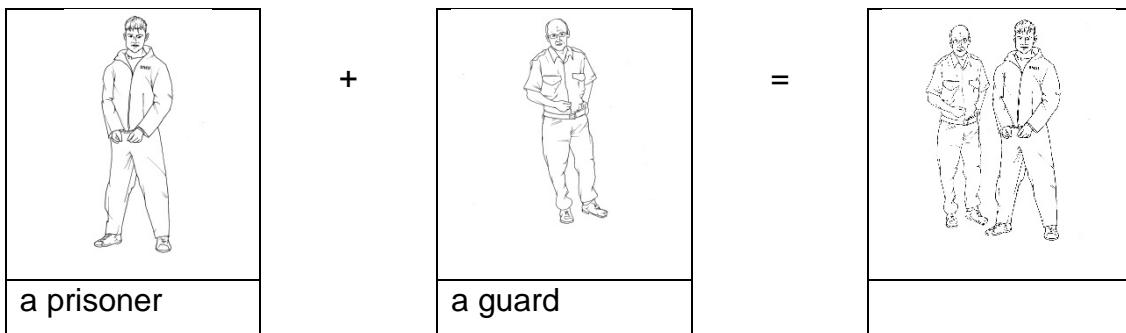


| | | |
|---|---|---|
| a prisoner | a guard | |

Last week, a prisoner was walking outside.  The prisoner saw a hole in the fence.  The prisoner thought about escaping.  However, a guard was nearby.  The prisoner _____ (watch/guard).  The prisoner did not escape.

Last week, a prisoner was walking outside.  The prisoner saw a hole in the fence.  The prisoner thought about escaping.  However, a guard was nearby.  The prisoner was watched by the guard.  The prisoner did not escape.

22. The fish was cooked by the chef.
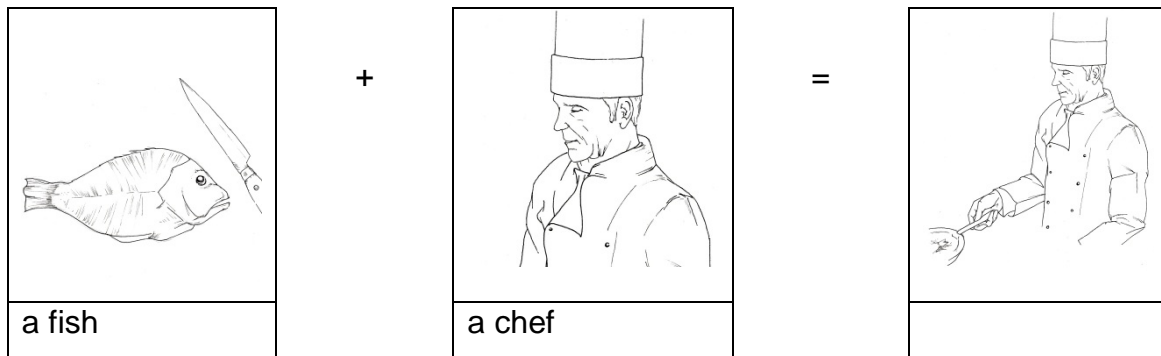


a fish

+



a chef

=



Yesterday, a chef was working in a kitchen.  A customer ordered the fish.  The chef put the fish into a hot pan.  The chef turned on the heat.  The fish _____ _____ (cook/chef).  The cooked fish looked delicious.

Yesterday, a chef was working in a kitchen.  A customer ordered the fish.  The chef put the fish into a hot pan.  The chef turned on the heat.  The fish was cooked by the chef.  The cooked fish looked delicious.

23. The money was counted by the banker.



| money | + | a banker | = | |

Yesterday, a man was standing in a bank.  He was waiting for a banker to give him his money.  Before the banker gave the man his money, he needed to count it.  The money _____ _____(count/banker).  The man thought about what he would buy with his money.
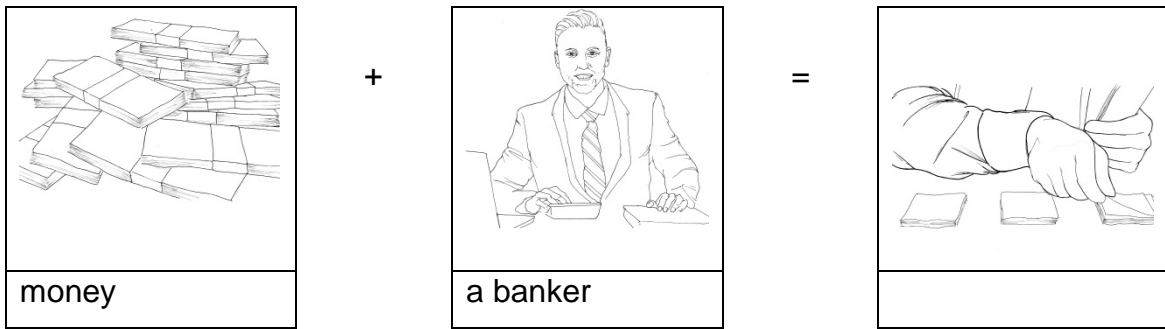
Yesterday, a man was standing in a bank.  He was waiting for a banker to give him his money.  Before the banker gave the man his money, he needed to count it.  The money was counted by the banker.  The man thought about what he would buy with his money.

24. The passport was checked by the immigration officer.
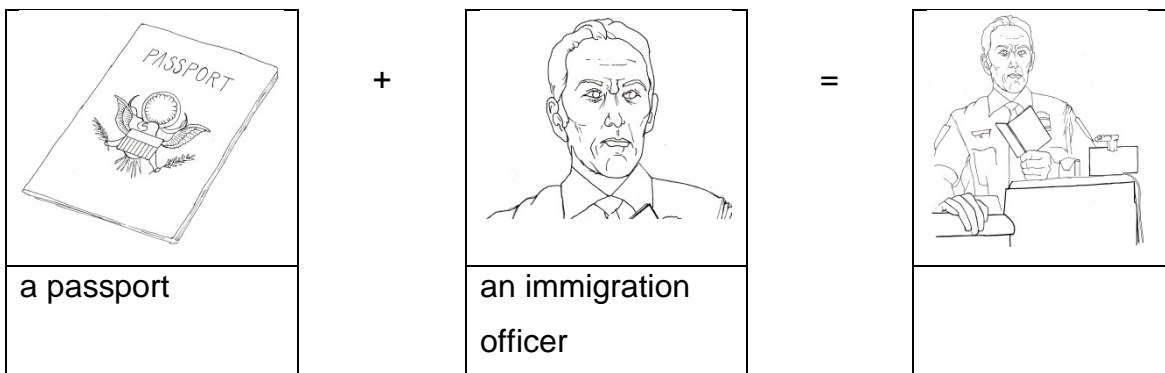


| a passport | + | an immigration officer | = | |

Yesterday, a woman went to an airport.  The woman went to the immigration desk.  An immigration officer looked at the woman's passport.  The passport

_____

(check/immigration officer).  The immigration officer asked the woman many questions.

Yesterday, a woman went to an airport. The woman went to the immigration desk. An immigration officer looked at the woman's passport. The passport was checked by the immigration officer. The immigration officer asked the woman many questions.

25. The woman was attacked by the lion.
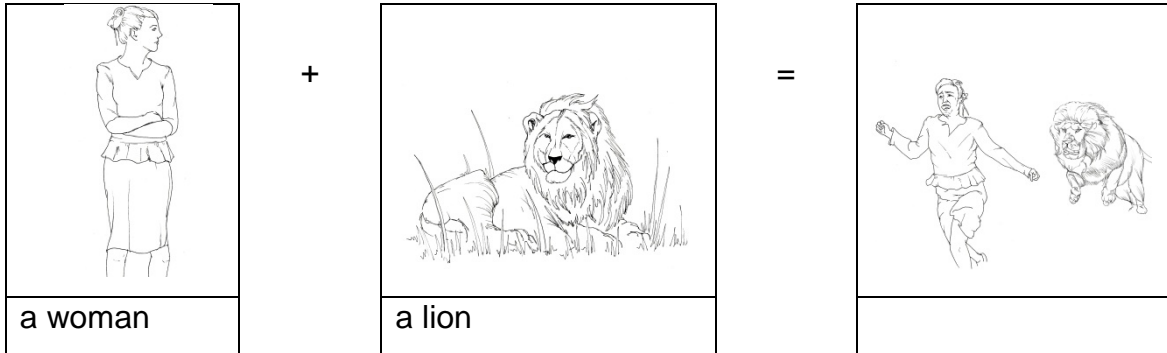
| a woman | | a lion | | |
|---|---|---|---|---|

Last year, a woman went on holiday to Africa. She wanted to see lions. Her guide found a lion for her to look at. The lion did not want to be looked at. The lion bit the woman. The woman _____ _____(attack/lion). The woman ran away.

Last year, a woman went on holiday to Africa. She wanted to see lions. Her guide found a lion for her to look at. The lion did not want to be looked at. The lion bit the woman. The woman was attacked by the lion. The woman ran away.

*Appendix M: Test bank for the structure of the present continuous passive*

\* = Item removed from test bank

\*1. The lion is being watched by the tourist.  (removed from test bank due to low facility index)



| a lion | | a tourist | |
|---|---|---|---|

Right now, a woman is on holiday in Africa.  She wants to see many animals. Her guide has found a lion.  The woman is carefully looking at the lion.  The lion _____(watch/tourist). The lion is not moving.

Right now, a woman is on holiday in Africa.  She wants to see many animals. Her guide has found a lion.  The woman is carefully looking at the lion.  The lion is being watched by the tourist.  The lion is not moving.

2.  The picture is being painted by the artist.



a picture + an artist =

Right now, an artist is working.  She is in a market.  She has found something interesting to paint.  She is putting the paint onto the paper.  The picture _____ (paint/artist). The artist is smiling.

Right now, an artist is working.  She is in a market.  She has found something interesting to paint.  She is putting the paint onto the paper.  The picture is being painted by the artist.  The artist is smiling.

3.  The house is being cleaned by the maid.



a messy house + a maid =

Right now, a maid is working in a house.  The house is very messy.  The maid is trying to make the house clean before the family comes home.  The house _____ (clean/maid). The maid is not smiling.

Right now, a maid is working in a house.  The house is very messy.  The maid is trying to make the house clean before the family comes home.  The house is being cleaned by the maid.  The maid is not smiling.

4.  The cat is being rescued by the security guard.
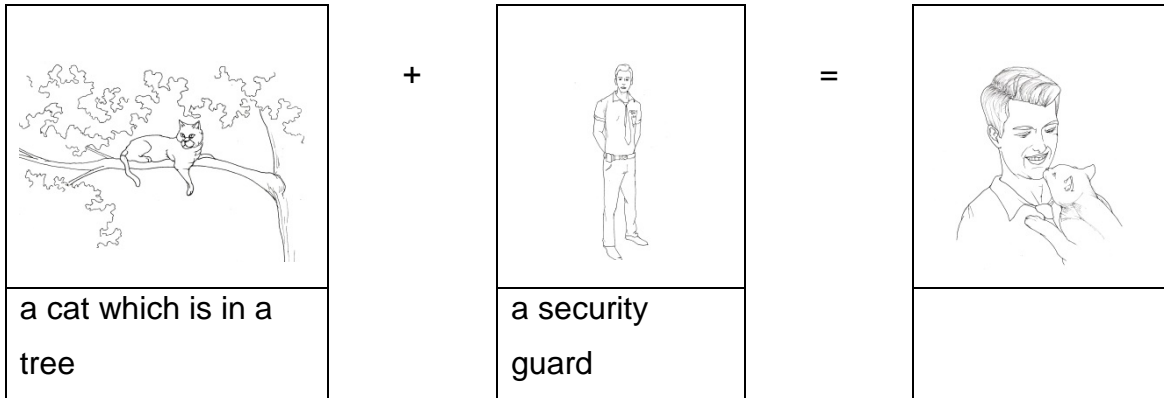
| | | | | |
|---|---|---|---|---|
|  | + |  | = |  |
| a cat which is in a tree | | a security guard | | |

Right now, a cat is in a tree.  The cat cannot get down.  A security guard has seen the cat and has climbed the tree.  The security guard is helping the cat to get down.  The cat _____ _____(rescue/security guard).  The cat is biting the security guard.

Right now, a cat is in a tree.  The cat cannot get down.  A security guard has seen the cat and has climbed the tree.  The security guard is helping the cat to get down.  The cat is being rescued by the security guard.  The cat is biting the security guard.

5. The patient is being advised by the doctor.
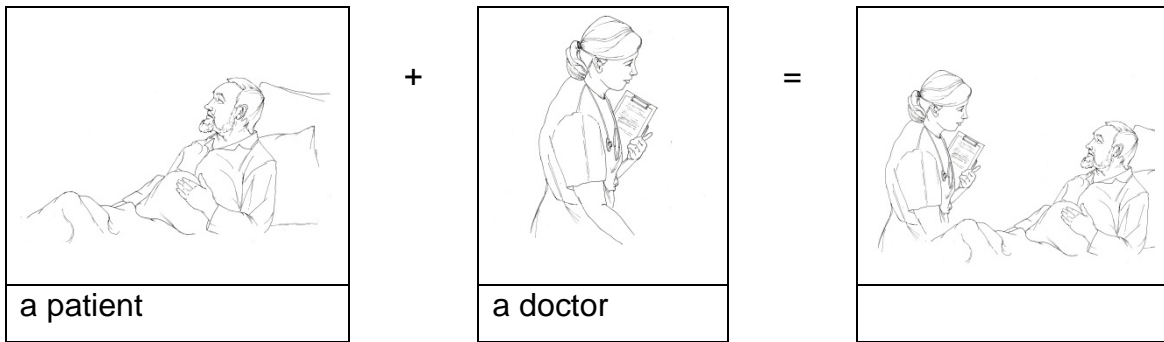


| a patient | a doctor | |
|---|---|---|

Right now, a doctor is talking to a patient.  The patient is sick but does not know why.  The doctor is telling the patient that he needs lots of rest.  The patient

_____

(advise/doctor).  The patient is listening carefully.


Right now, a doctor is talking to a patient.  The patient is sick but does not know why.  The doctor is telling the patient that he needs lots of rest.  The patient is being advised by the doctor.  The patient is listening carefully.


6. The car is being repaired by the mechanic.
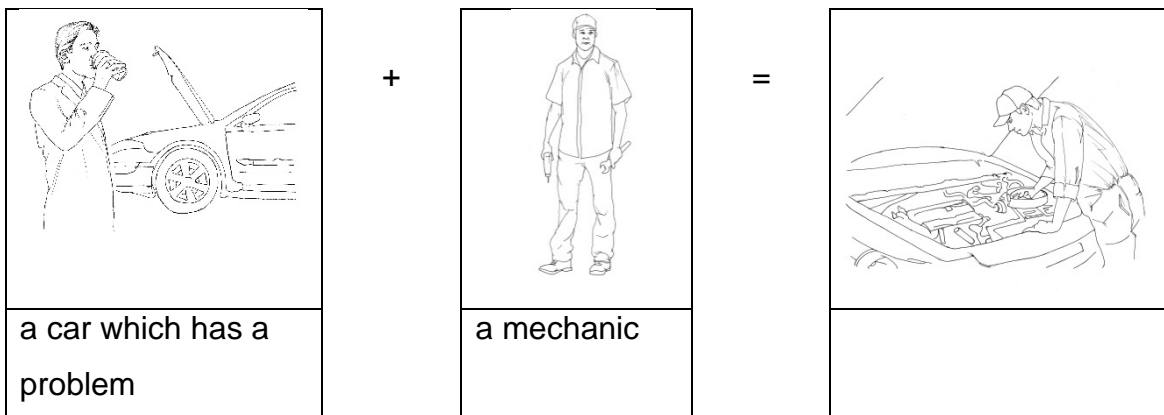


| a car which has a problem | a mechanic | |
|---|---|---|

Right now, a man is watching a mechanic.  The man's car has a problem so the man has taken his car to a mechanic.  The mechanic is trying to repair the car. The car _____

(repair/mechanic).  The man is drinking coffee while he is waiting.

Right now, a man is watching a mechanic.  The man's car has a problem so the man has taken his car to a mechanic.  The mechanic is trying to repair the car.  The car is being repaired by the mechanic.  The man is drinking coffee while he is waiting.

7.  The woman is being interviewed by the manager.
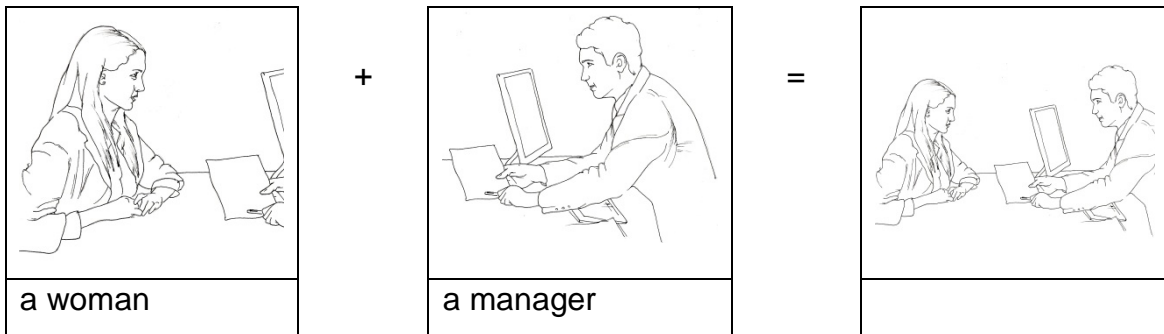


| a woman | + | a manager | = | |

Right now, a woman is sitting in an office.  She has applied for a job at a new company.  A manager from the new company is also sitting in the office.  The manager is asking he woman many questions.  The woman _____ _____ (interview/manager).  The woman is smiling.

Right now, a woman is sitting in an office.  She has applied for a job at a new company.  A manager from the new company is also sitting in the office.  The manager is asking he woman many questions.  The woman is being interviewed by the manager.  The woman is smiling.

8. The essay is being graded by the teacher.
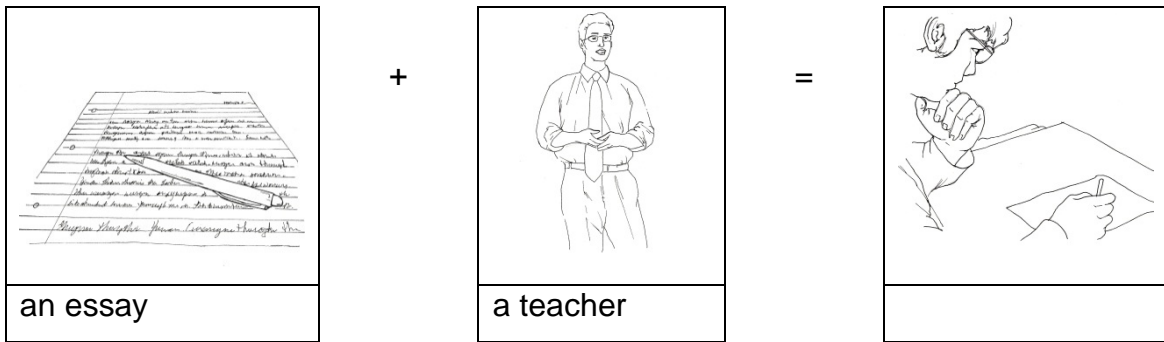
| | | | | |
|---|---|---|---|---|
| an essay | + | a teacher | = | |

Right now, a teacher is reading an essay.  The teacher is writing many helpful comments on the essay.  The essay _____

_____ (grade/teacher).  The teacher is thinking carefully about the mark that he will give to the essay.


Right now, a teacher is reading an essay.  The teacher is writing many helpful comments on the essay.  The essay is being graded by the teacher.  The teacher is thinking carefully about the mark that he will give to the essay.


9. The mountain is being climbed by the explorer.
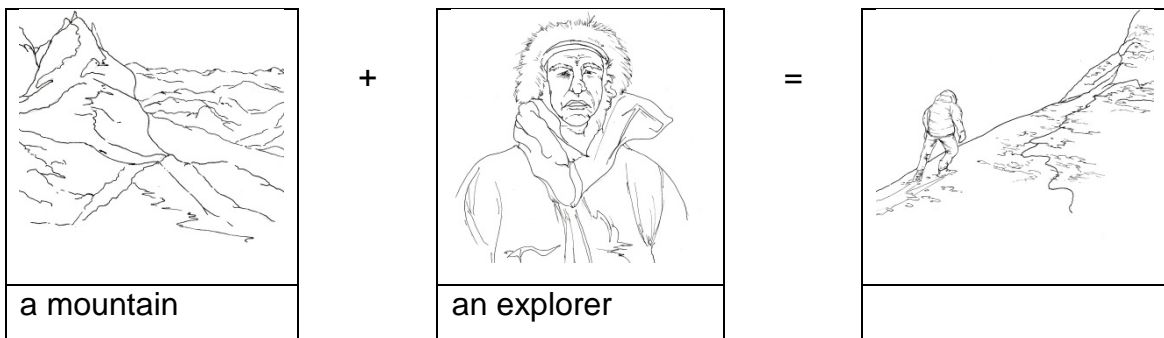
| | | | | |
|---|---|---|---|---|
| a mountain | + | an explorer | = | |

Right now, an explorer is trying to get to the top of a mountain.  Nobody has ever reached the top of this mountain.  The climb is very difficult but the explorer is not giving up.  The mountain _____

_____ (climb/explorer).  The explorer is breathing heavily.

Right now, an explorer is trying to get to the top of a mountain. Nobody has ever reached the top of this mountain. The climb is very difficult but the explorer is not giving up. The mountain is being climbed by the explorer. The explorer is breathing heavily.

*10. The tree is being planted by the gardener. (removed from test bank due to low facility index)
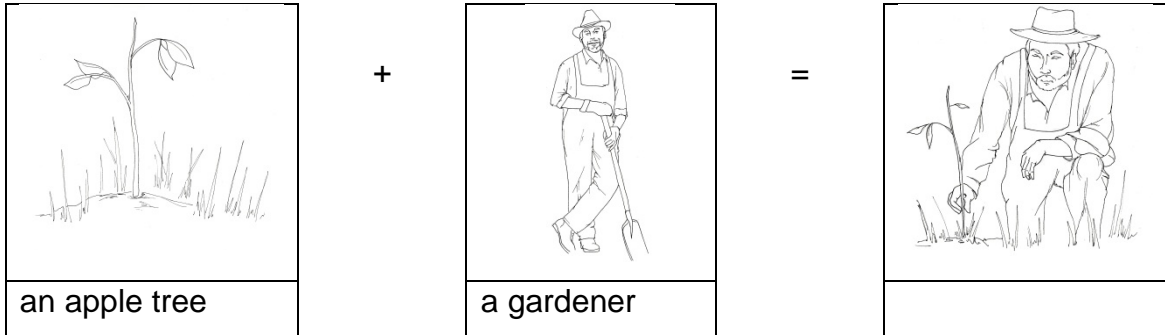


| an apple tree | + | a gardener | = | |

Right now, a gardener is working in his garden. The gardener has decided that his garden needs more trees so he has bought a small apple tree. He is digging a hole for the apple tree. The tree _____ _____ (plant/gardener). The gardener is hoping that his new tree will give him many apples.

Right now, a gardener is working in his garden. The gardener has decided that his garden needs more trees so he has bought a small apple tree. He is digging a hole for the apple tree. The tree is being planted by the gardener. The gardener is hoping that his new tree will give him many apples.

11. The plant is being watered by the girl.
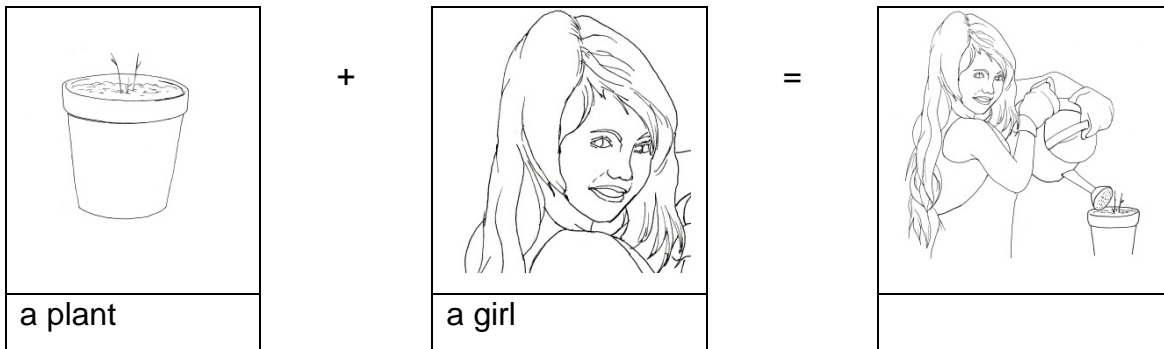


| a plant | a girl | |
|---------|--------|--|

Right now, a girl is standing next to her plant.  There is a problem with the plant. Some of the leaves of the plant are brown.  The girl is worried about the brown leaves.  The girl is giving water to the plant.  The plant _____ _____(water/girl).  The sun is shining very brightly.

Right now, a girl is standing next to her plant.  There is a problem with the plant. Some of the leaves of the plant are brown.  The girl is worried about the brown leaves.  The girl is giving water to the plant.  The plant is being watered by the girl.  The sun is shining very brightly.

12. The door is being locked by the security guard.



| a door | a security guard | |
|--------|------------------|--|

Right now, a security guard is working.  He has just closed a door and has put a key into the lock of the door.  He is holding the handle of the door and turning the key.  The door _____ (lock/security guard).  The security guard is thinking about changing his job.

Right now, a security guard is working.  He has just closed a door and has put a key into the lock of the door.  He is holding the handle of the door and turning the key.  The door is being locked by the security guard.  The security guard is thinking about changing his job.


13.  The passport is being checked by the immigration officer.
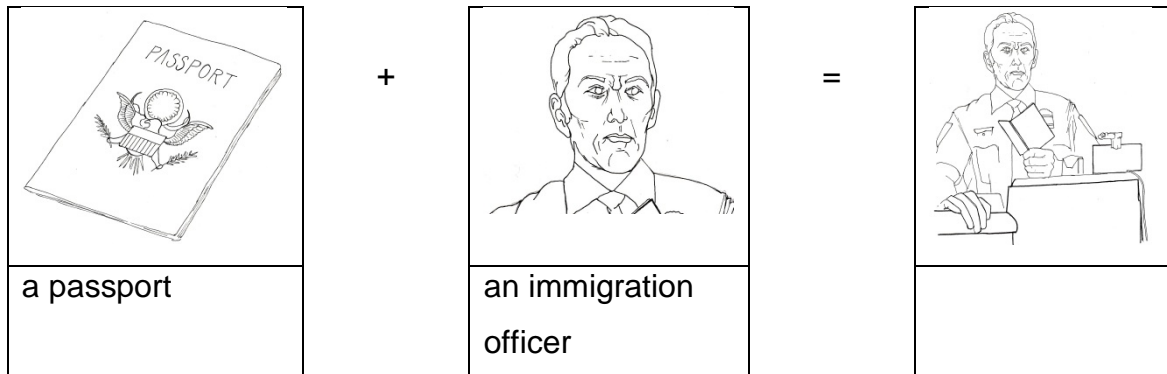
| a passport | + | an immigration officer | = | |
|---|---|---|---|---|

Right now, a woman is in an airport.  The woman is standing at the immigration desk.  An immigration officer is looking at the woman's passport.  The passport

_____

(check/immigration officer).  The immigration officer is asking the woman many questions.


Right now, a woman is in an airport.  The woman is standing at the immigration desk.  An immigration officer is looking at the woman's passport.  The passport is being checked by the immigration officer.  The immigration officer is asking the woman many questions.

14. The money is being counted by the banker.
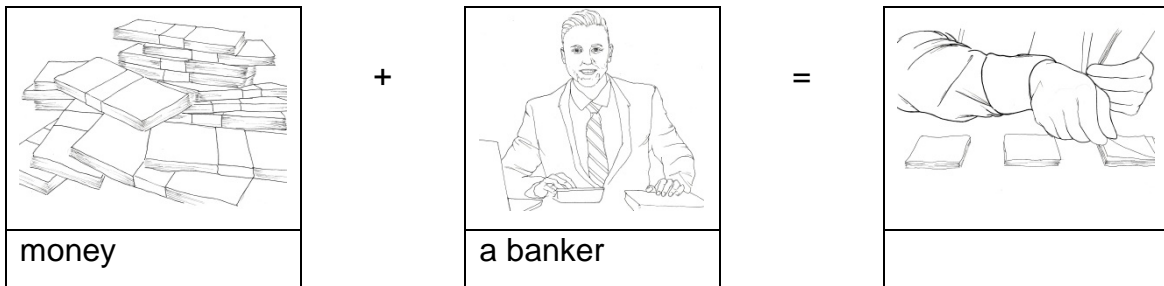


money + a banker =

Right now, a man is standing in a bank.  He is waiting for a banker to give him his money.  Before the banker gives the man his money, he needs to count it. The banker is holding the money.  The money _____

_____ (count/banker).  The man is thinking about what he will buy with his money.

Right now, a man is standing in a bank.  He is waiting for a banker to give him his money.  Before the banker gives the man his money, he needs to count it. The banker is holding the money.  The money is being counted by the banker. The man is thinking about what he will buy with his money.

15. The table is being cleared by the waiter.
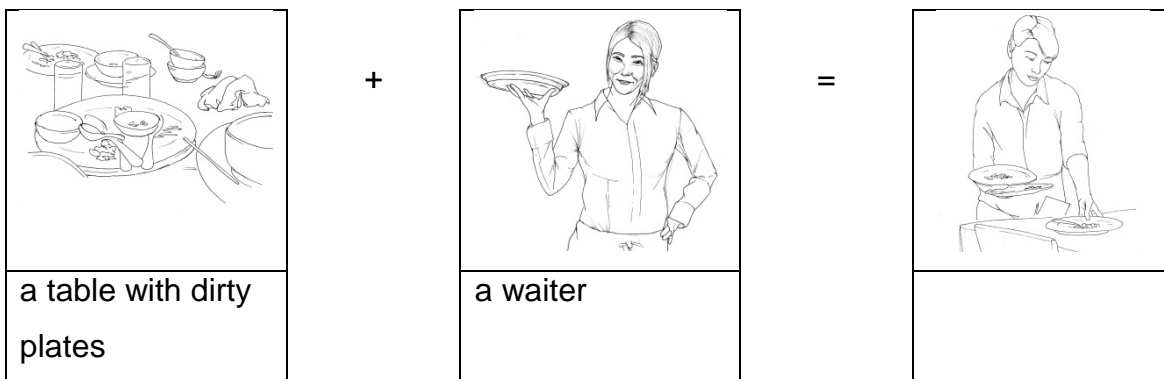


a table with dirty plates + a waiter =

Right now, a waiter is working in a restaurant.  It is the waiter's job to take the dirty plates and glasses to the kitchen.  One family has just finished eating.  The waiter is taking the dirty plates away from their table.  The table _____

_____ (clear/waiter).  The waiter is working very hard.

Right now, a waiter is working in a restaurant.  It is the waiter's job to take the dirty plates and glasses to the kitchen.  One family has just finished eating.  The waiter is taking the dirty plates away from their table.  The table is being cleared by the waiter.  The waiter is working very hard.

16.  The cook is being contacted by the manager.
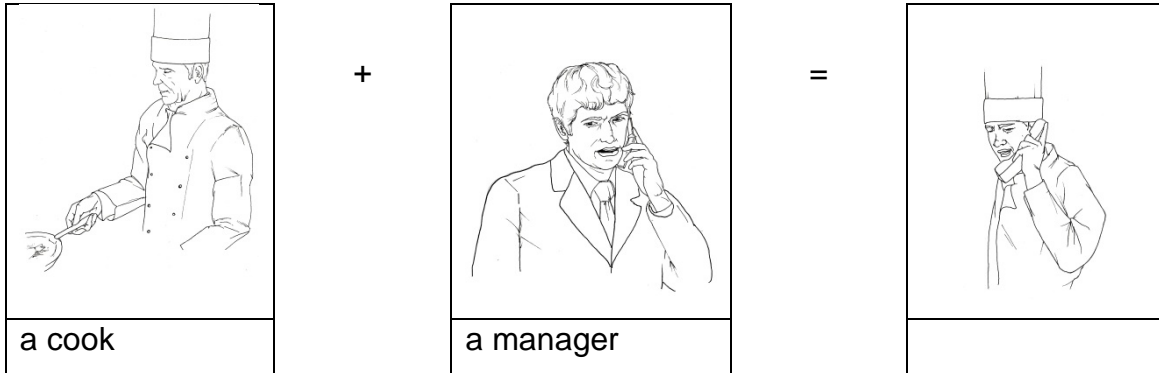


| a cook | + | a manager | = | |

Right now, there is a problem at a restaurant.  A customer wants to speak to the cook.  Nobody can find the cook.  The manager has the cook's phone number.  The manager is calling the cook's cell phone.  The cook _____ _____ (contact/manager).  The cook is hiding in the kitchen.

Right now, there is a problem at a restaurant.  A customer wants to speak to the cook.  Nobody can find the cook.  The manager has the cook's phone number.  The manager is calling the cook's cell phone.  The cook is being contacted by the manager.  The cook is hiding in the kitchen.

17.  The fish is being cooked by the chef.
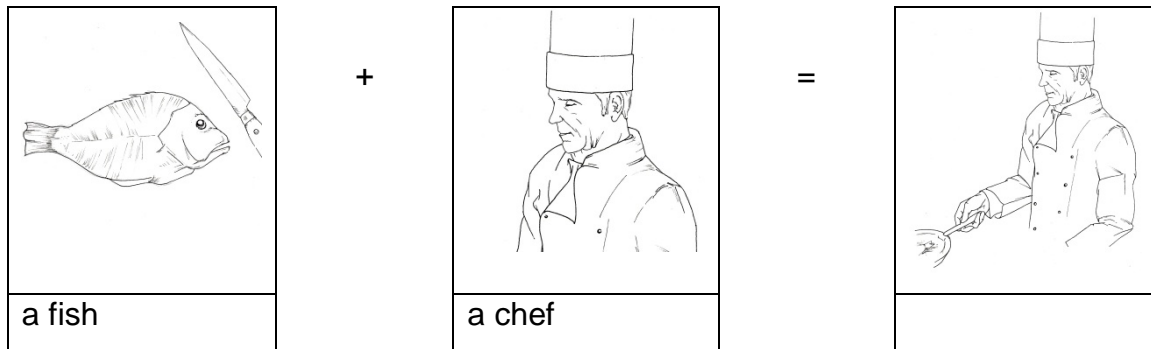
| | | |
|---|---|---|
|  a fish | +  a chef | =  |

Right now, a chef is working in a kitchen.  A customer has ordered fish.  The chef has put the fish into a hot pan.  The chef is turning up the heat.  The fish _____ (cook/chef).  The chef is looking at the delicious fish.

Right now, a chef is working in a kitchen.  A customer has ordered fish.  The chef has put the fish into a hot pan.  The chef is turning up the heat.  The fish is being cooked by the chef.  The chef is looking at the delicious fish.

18.  The game is being downloaded by the girl.
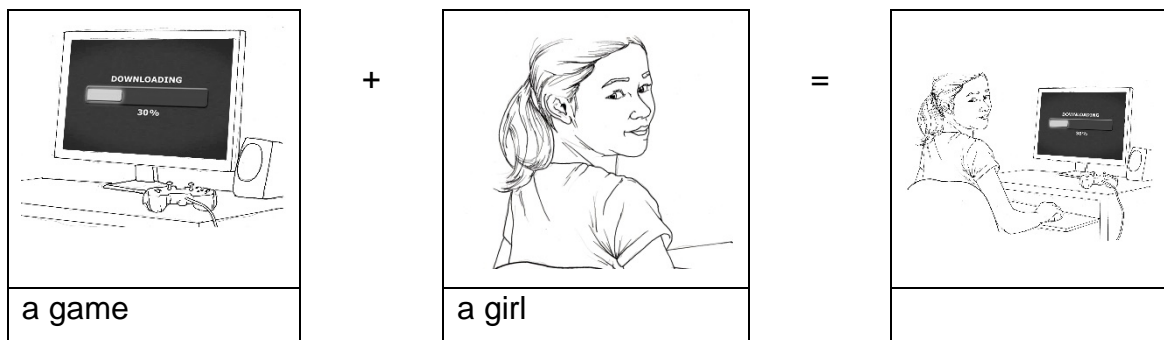
| | | |
|---|---|---|
|  a game | +  a girl | =  |

Right now, a girl wants to play a game on her computer.  She does not have the game yet.  The girl has found the game on the Internet.  The girl is putting the game onto her computer.  The game _____ _____ (download/girl).  The girl is smiling.

Right now, a girl wants to play a game on her computer.  She does not have the game yet.  The girl has found the game on the Internet.  The girl is putting the game onto her computer.  The game is being downloaded by the girl.  The girl is smiling.

19.  The puzzle is being solved by the student.
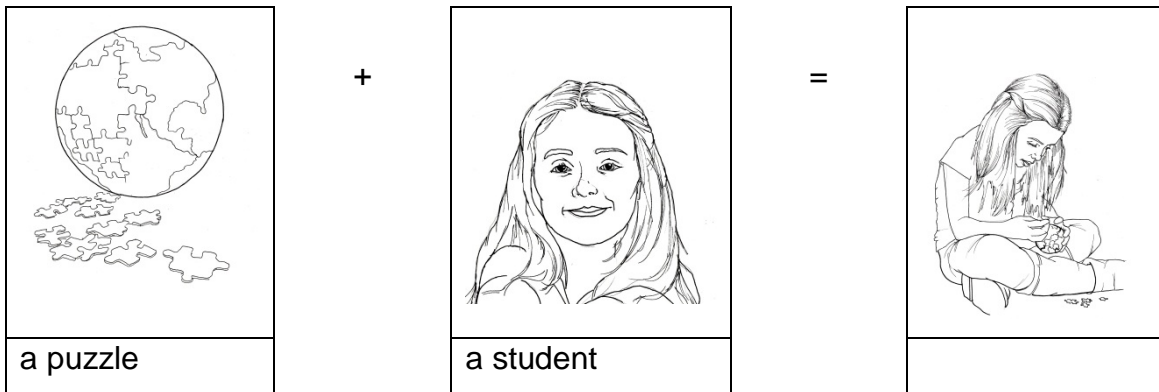
| a puzzle | + | a student | = | |
|----------|---|-----------|---|---|

Right now, a student is in a classroom.  The student has been given a puzzle by her teacher.  The student is thinking about the answer to the puzzle.  The puzzle _____
(solve/student).  The student is concentrating.

Right now, a student is in a classroom.  The student has been given a puzzle by her teacher.  The student is thinking about the answer to the puzzle.  The puzzle is being solved by the student.  The student is concentrating.

20. The woman is being arrested by a policeman.
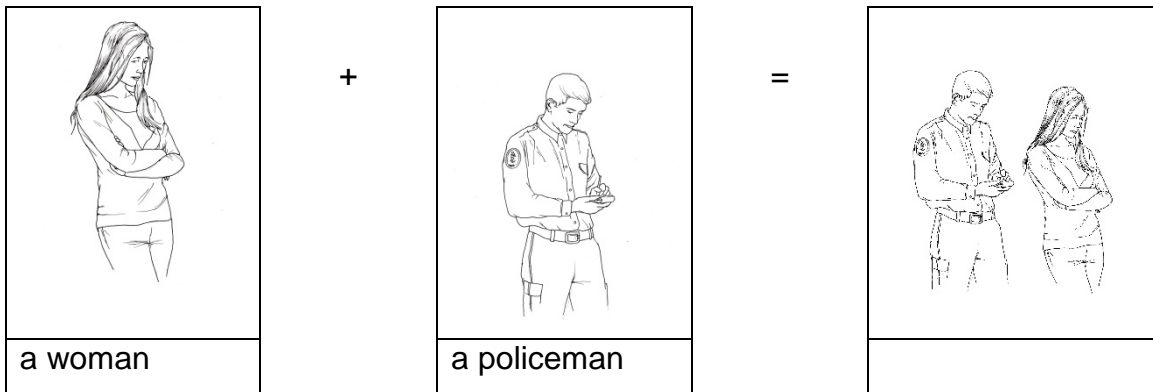


| a woman | a policeman | |
|---|---|---|

Right now, a policeman is talking to a woman.  The policeman has caught the woman stealing a dress.  The woman is telling the policeman that she did not steal.  The policeman is taking the woman to the police station.  The woman _____ (arrest/policeman). The woman is crying.

Right now, a policeman is talking to a woman.  The policeman has caught the woman stealing a dress.  The woman is telling the policeman that she did not steal.  The policeman is taking the woman to the police station.  The woman is being arrested by a policeman.  The woman is crying.

21. The car is being washed by the worker.
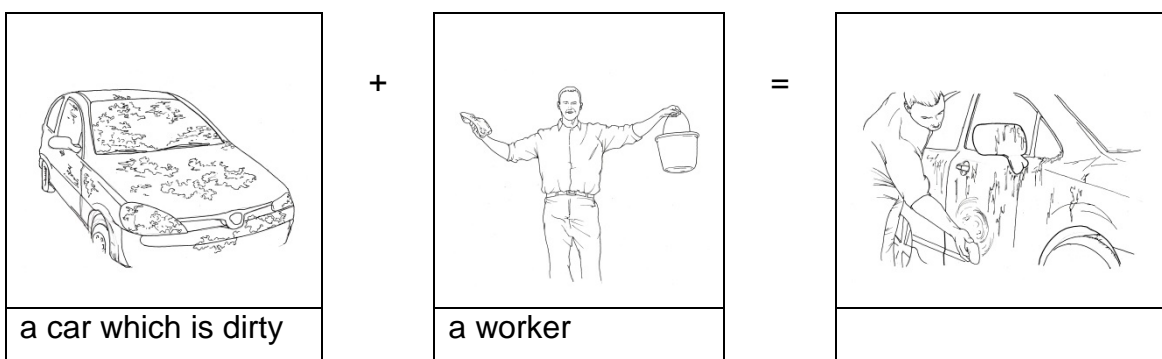


| a car which is dirty | a worker | |
|---|---|---|

Right now, a worker is cleaning a car.  The car is very dirty.  The worker is putting water on to the car.  The car _____ _____(wash/worker).  The owner of the car is watching the worker carefully.

Right now, a worker is cleaning a car.  The car is very dirty.  The worker is putting water on to the car.  The car is being cleaned by the worker.  The owner of the car is watching the worker carefully.

22.  The woman is being attacked by the lion.
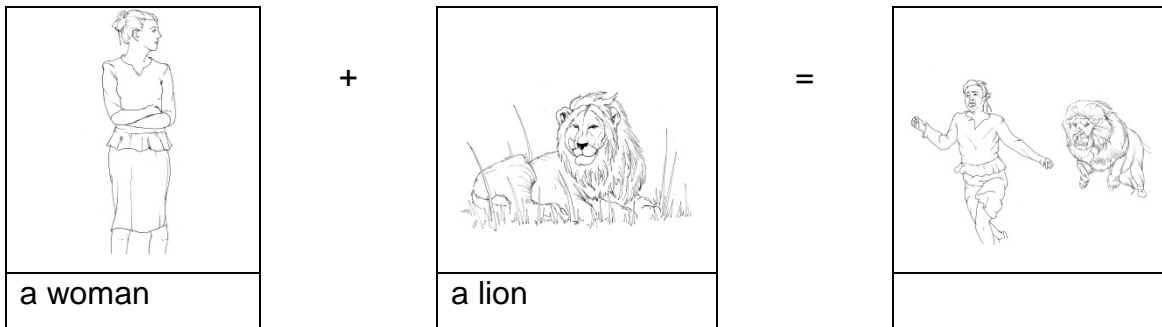
| a woman | + | a lion | = | |

Right now, a woman is on holiday in Africa.  Her guide has found many lions for her to photograph.  However, she is screaming.  She is screaming very loudly.  A lion is biting her.  The woman _____ _____(attack/lion).  The other tourists are running away.

Right now, a woman is on holiday in Africa.  Her guide has found many lions for her to photograph.  However, she is screaming.  She is screaming very loudly.  A lion is biting her.  The woman is being attacked by the lion.  The other tourists are running away.

23. The answer is being explained by the teacher.
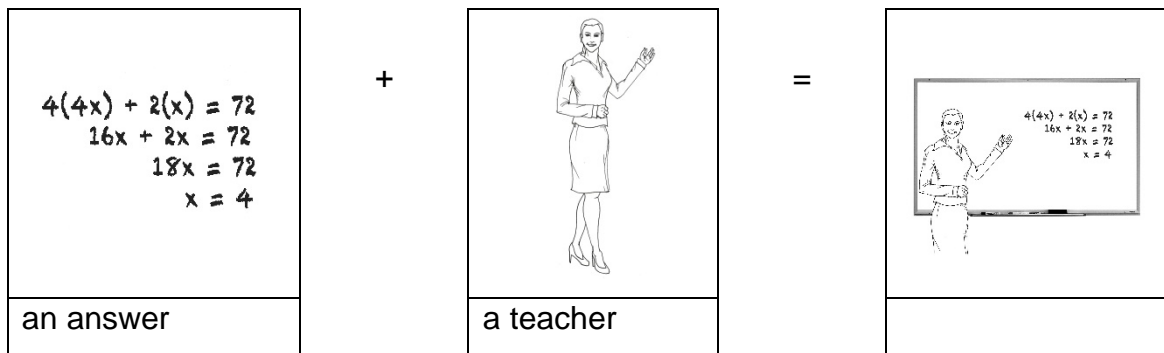
| | | | | |
|---|---|---|---|---|
| $4(4x) + 2(x) = 72$<br>$16x + 2x = 72$<br>$18x = 72$<br>$x = 4$ | + | | = | |
| an answer | | a teacher | | |

Right now, many students are listening to their teacher.  The teacher is giving the students the answer to a test.  Some students got the answer wrong.  The teacher is telling these students why their answer is wrong.  The answer _____(explain/teacher). The students are listening carefully.

Right now, many students are listening to their teacher.  The teacher is giving the students the answer to a test.  Some students got the answer wrong.  The teacher is telling these students why their answer is wrong.  The answer is being explained by the teacher.  The students are listening carefully.

24. The exam is being created by the teacher.
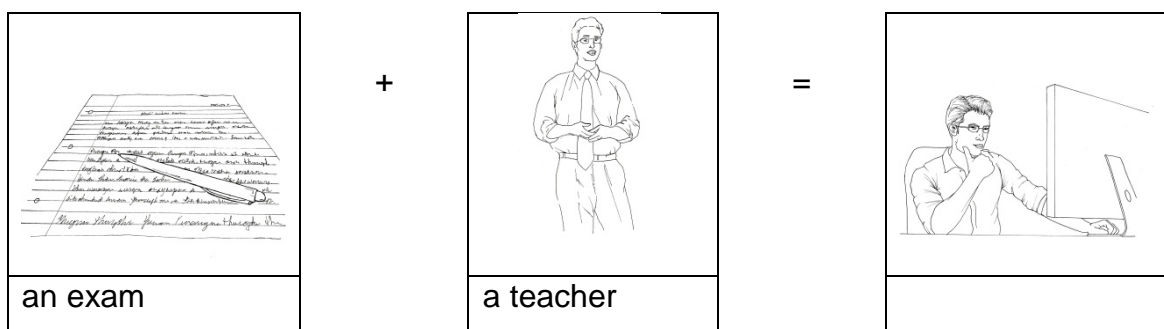
| | | | | |
|---|---|---|---|---|
| | + | | = | |
| an exam | | a teacher | | |

Right now, a teacher is working in his office.  The teacher wants to know how much his students have learned.  He is thinking of questions for the final exam. He is entering the questions into his computer.  The exam _____ _____ (create/teacher).  The teacher is thinking about the course.

Right now, a teacher is working in his office.  The teacher wants to know how much his students have learned.  He is thinking of questions for the final exam.  He is entering the questions into his computer.  The exam is being created by the teacher.  The teacher is thinking about the course.

25. The website is being designed by the developer.
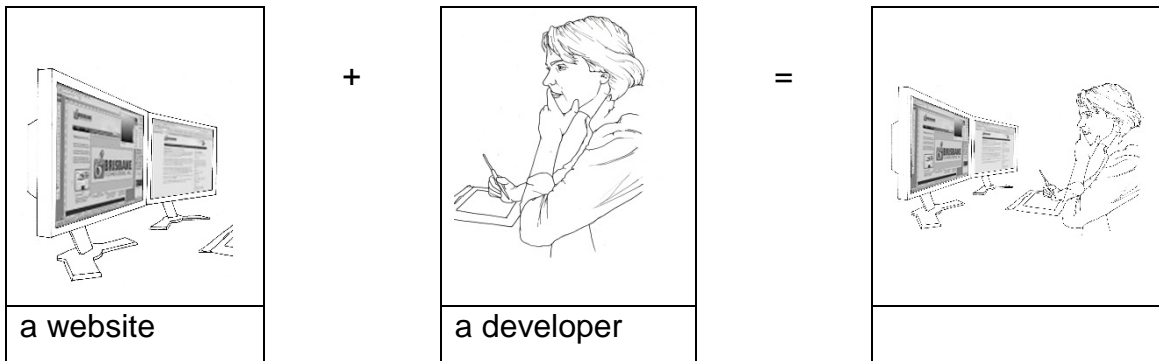
| a website | + | a developer | = | |
|---|---|---|---|---|

Right now, a developer is working in her office.  She has to create a website for a company.  She is carefully choosing the colors of the website.  She is carefully choosing the pictures for the website.  The website _____ _____(design/developer).  The developer is thinking carefully.

Right now, a developer is working in her office.  She has to create a website for a company.  She is carefully choosing the colors of the website.  She is carefully choosing the pictures for the website.  The website is being designed by the developer.  The developer is thinking carefully.

26. The document is being signed by the boss.
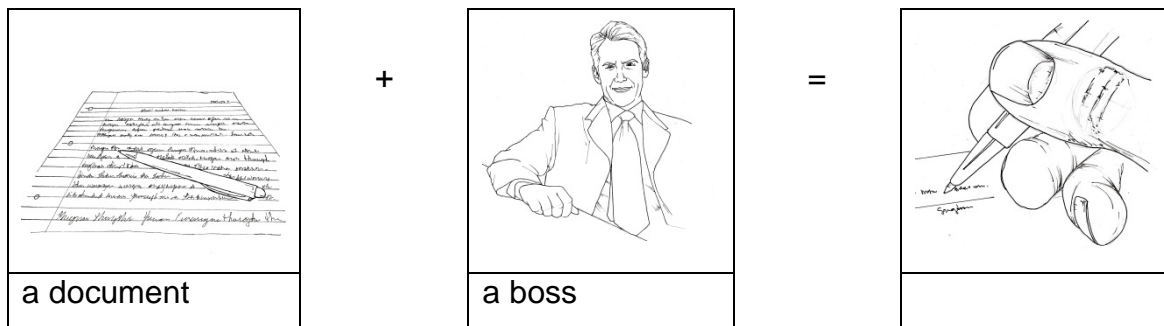
| | | | | | |
|---|---|---|---|---|---|
| a document | + | a boss | = | | |

Right now, a boss is sitting in his office.  The boss has agreed to sell his company.  He is writing his name on a very important document.  The document _____ (sign/boss). The boss is thinking about what he will buy with his money.

Right now, a boss is sitting in his office.  The boss has agreed to sell his company.  He is writing his name on a very important document.  The document is being signed by the boss.  The boss is thinking about what he will buy with his money.

*Appendix N: Final guided learning task for the structure of the simple past passive*

**Discovery Learning**

*Part 1*

*Example Sentences*

>    Sentence 1:  The student took the exam.

>    Sentence 2:  The exam was taken by the student.


1a)    In sentence 1, who took the exam?
_____

1b)    In sentence 2, who took the exam?
_____

1c)    Is the meaning of the sentences different?  Yes/No
        If yes, then how?
_____

Circle the correct word

2a)    Sentence 1 is in the *past/present/future*.  How do you know?
_____

2b)    Sentence 2 is in the *past/present/future*.  How do you know?
_____

Fill in the missing number

3a)    How many words are in sentence 1?
_____

3b)    How many words are in sentence 2?
_____

3c)    Which words are different?
_____

Circle the correct word

4a)    Sentence 1 is in the *active/passive* voice.
        How do you know?
_____

4b)    Sentence 2 is in the *active/passive* voice.

How do you know?

_____


The structure of sentence 1 is


The student         took           the exam

↓             ↓            ↓

subject      past tense verb       object
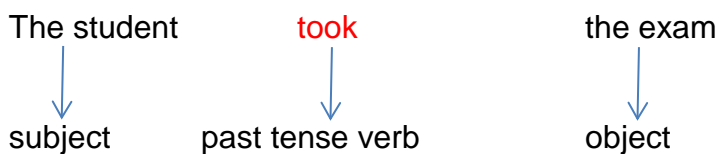

Use the words in the box to make the structure of sentence 2

| subject |
| :---: |
| object |
| past participle |
| be verb |
| by |


5a)    The exam       was       taken      by        the student

↓         ↓         ↓         ↓         ↓


Complete the following sentence.  Use the words in the box to help you.

| past participle |
| :---: |
| be verb |

5b)    The verb phrase of the simple past passive is made using a

_____ followed by the _____ of the main verb.

*Part 2*

Please change the following sentences to the active voice

*Example*

       *Passive:*       The game was played by the girl
       *Active:*       The girl played the game.

1a)    *Passive:*       The email was deleted by the worker.
       *Active:*       The worker

_____

1b)    *Passive:*       The student was tested by the teacher.
       *Active:*

_____

1c)    *Passive:*       The letters were delivered by the worker.
       *Active:*

_____

Please change the following sentences to the passive voice

*Example*

       *Active:*       The girl played the game.
       *Passive:*      The game was played by the girl

2a)    *Active:*       The scientist researched the idea.
       *Passive:*      The idea

_____

2b)    *Active:*       The football player scored the goal.
       *Passive:*

_____

2c)    *Active:*       The police officer investigated the crimes.
       *Passive:*

_____

*Appendix O: Final guided learning task for the structure of the present continuous passive*

**Discovery Learning**

*Part 1*

*Example Sentences*

Sentence 1:  The student is taking the exam.

Sentence 2:  The exam is being taken by the student.

1a)    In sentence 1, who is taking the exam?

_____

1b)    In sentence 2, who is taking the exam?

_____

1c)    Is the meaning of the sentences different?  Yes/No
       If yes, then how?

_____

Circle the correct word

2a)    Sentence 1 is in the *past/present/future*.  How do you know?

_____

2b)    Sentence 2 is in the *past/present/future*.  How do you know?

_____

Fill in the missing number

3a)    How many words are in sentence 1?

_____

3b)    How many words are in sentence 2?

_____

3c)    Which words are different?

_____

Circle the correct word

4a)    Sentence 1 is in the *active/passive* voice.
       How do you know?

_____

4b)    Sentence 2 is in the *active/passive* voice.

How do you know?

_____

The structure of sentence 1 is

| The student | is | taking | the exam |
| ↓ | ↓ | ↓ | ↓ |
| subject | be verb | main verb | object |

Use the words in the box to make the structure of sentence 2

```
subject
object
being
past participle
be verb
by
```

5a) The exam    is    being    taken    by    the student
    ↓    ↓    ↓    ↓    ↓    ↓

Complete the following sentence.  Use the words in the box to help you.

```
being
past participle
be verb
```

5b)    The verb phrase of the present continuous passive is made using a
       _____ followed by _____ which is then
       followed by the _____ of the main verb.

## Part 2

Please change the following sentences to the active voice

*Example*

       *Passive:*       The game is being played by the girl
       *Active:*       The girl is playing the game.

1a)    *Passive:*       The email is being deleted by the worker.
       *Active:*       The worker
_____

1b)    *Passive:*       The student is being tested by the teacher.
       *Active:*
_____

1c)    *Passive:*       The letters are being delivered by the worker.
       *Active:*
_____

Please change the following sentences to the passive voice

*Example*

       *Active:*       The girl is playing the game.
       *Passive:*       The game is being played by the girl

2a)    *Active:*       The scientist is researching the idea.
       *Passive:*       The idea
_____

2b)    *Active:*       The football player is scoring the goal.
       *Passive:*
_____

2c)    *Active:*       The police officer is investigating the crimes.
       *Passive:*
_____

*Appendix P: Piloted text-editing tasks for the structure of the simple past passive*

Task 1

*Text-editing paragraph*

Leonardo da Vinci designs one of the first flying machines.  However, the first real plane was build by the Wright brothers in 1903.  In 1919, letters was flown by airplanes across the Atlantic for the first time.  Airline services was developed fast.  In 1925, the first hot meals for passengers provide by a French airline.  In 1937, an American airline employ the air hostess.

*Original paragraph*

Leonardo da Vinci designed one of the first flying machines.  However, the first real plane was built by the Wright brothers in 1903.  In 1919, letters were flown by airplanes across the Atlantic for the first time.  Airline services developed fast.  In 1925, the first hot meals for passengers were provided by a French airline.  In 1937, an American airline employed the air hostess.

Task 2

*Text-editing paragraph*

In the 1980s, the number of rhinos in the world was reduce by people from 10,000 to 400.  Many rhinos was killed by hunters, but many also dies in zoos.  Zoos was were not able to save the rhino.  The best method of conservation is to leave the rhinos in their natural habitat.  By 1999, there be more than 13,000 rhinos again living in the wild.  These rhinos save from disappearing by local communities and government agencies.

*Original paragraph*

In the 1980s, the number of rhinos in the world was reduced by people from 10,000 to 400.  Many rhinos were killed by hunters, but many also died in zoos.  Zoos were not able to save the rhino.  The best method of conservation is to leave the rhinos in their natural habitat.  By 1999, there were more than 13,000 rhinos again living in the wild.  These rhinos were saved from disappearing by local communities and government agencies.

Task 3

*Text-editing paragraph*

Oil was use by people thousands of years ago.  In ancient times, it were burned by people in oil lamps for light at night.  Also, people covers boats with oil to keep water out and the Chinese was used oil as a surface for roads.  About 100 years ago, far more oil need by people as modern transport industry developed.  Luckily, people find large amounts of oil in many parts of the world, including the Middle East and the USA.

*Original paragraph*

Oil was used by people thousands of years ago.  In ancient times, it was burned by people in oil lamps for light at night.  Also, people covered boats with oil to keep water out and the Chinese used oil as a surface for roads.  About 100 years ago, far more oil was needed by people as modern transport industry developed.  Luckily, people found large amounts of oil in many parts of the world, including the Middle East and the USA.

*Appendix Q: Piloted text-editing tasks for the structure of the present continuous passive*

Task 1

*Text-editing paragraph*

Right now, Ahmed is sit on an airplane.  The airplane are being flown by a pilot.  The plane will arrive in London in 4 hours.  Ahmed looking out of the window.  The clouds look beautiful.  Ahmed is spoken to by the air hostess.  She ask him if he wants tea or coffee.  A paper cup hold by the air hostess as she speaks.

*Original paragraph*

Right now, Ahmed is sitting on an airplane.  The airplane is being flown by a pilot.  The plane will arrive in London in 4 hours.  Ahmed is looking out of the window.  The clouds look beautiful.  Ahmed is being spoken to by the air hostess.  She is asking him if he wants tea or coffee.  A paper cup is being held by the air hostess as she speaks.

Task 2

*Text-editing paragraph*

Right now, Maha is at the zoo.  The weather is very nice and the sun is shine brightly.  Maha observing a zoo keeper feed two rhinos.  The rhinos is being fed fresh grass by the zoo keeper.  The grass is chewed by the rhinos.  Maha watch by one rhino as it slowly chews the grass.  Maha press her hands onto the glass of the enclosure.

*Original paragraph*

Right now, Maha is at the zoo.  The weather is very nice and the sun is shining brightly.  Maha is observing a zoo keeper feed two rhinos.  The rhinos are being fed fresh grass by the zoo keeper.  The grass is being chewed by the rhinos.

Maha is being watched by one rhino as it slowly chews the grass. Maha is pressing her hands onto the glass of the enclosure.

Task 3

*Text-editing paragraph*

Maryam is a student. Right now, she is sit in class. It is an English class. She are being taught new vocabulary words by the teacher. The teacher explaining the words very carefully. The teacher is listened to by Maryam. It is hot in the classroom. Another student stand next to the window. The window open by the student.

*Original paragraph*

Maryam is a student. Right now, she is sitting in class. It is an English class. She is being taught new vocabulary words by the teacher. The teacher is explaining the words very carefully. The teacher is being listened to by Maryam. It is hot in the classroom. Another student is standing next to the window. The window is being opened by the student.

*Appendix R: Metadata for piloted text-editing tasks for the structure of the simple past passive*

| Task Number | Verbs | | | | No. of Words | No. of Sentences | Flesch-Kincaid Scale | BNC-COCA 1-12k | Words Excluded from BNC-COCA 1-12k | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Active | | Passive | | | | | | Pictures | No Pictures |
| | Original Text | As Presented in Task | Original Text | As Presented in Task | | | | | | |
| 1 (rhinos) | died | dies | was reduced | was reduce | 77 | 6 | 72.5 | third | rhino habitat | zoo |
| | were | was were | were killed | was kill | | | | | | |
| | were | Be | were saved | save | | | | | | |
| 2 (airplanes) | designed | Designs | was built | was build | 64 | 6 | 74.4 | third | | Leonardo da Vinci Wright |
| | developed | was | were | was flown | | | | | | |

| | | developed | flown | | | | | | | Atlantic French American |
|---|---|---|---|---|---|---|---|---|---|---|
| | employed | Employ | provided | provide | | | | | | |
| 3* (oil) | covered | covers | was used | was use | 80 | 5 | 75.3 | third | | Chinese USA |
| | used | was used | was burned | were burned | | | | | | |
| | found | Find | was needed | need | | | | | | |

*Was used for the simple past passive dictogloss task

*Appendix S: Metadata for piloted text-editing tasks for the structure of the present continuous passive*

| Task Number | Verbs | | | | No. of Words | No. of Sentences | Flesch-Kincaid Scale | BNC-COCA 1-12k | Words Excluded from BNC-COCA 1-12k | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Active | | Passive | | | | | | | |
| | Original Text | As Presented in Task | Original Text | As Presented in Task | | | | | Pictures | No Pictures |
| 1 (rhino) | is shining | is shine | are being fed | is being fed | 70 | 7 | 84.3 | third | rhino enclosure | zoo Maha |
| | is observing | observing | is being chewed | is chewed | | | | | | |
| | is pressing | press | is being watched | watch | | | | | | |
| 2* (airplanes) | is sitting | is sit | is being flown | are being flown | 68 | 8 | 88.7 | third | Ahmed | airplane London |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | is looking | looking | is being spoken to | is spoken to | | | | | | |
| | is asking | ask | is being held | hold | | | | | | |
| 3 (oil) | is sitting | is sit | is being taught | are being taught | 64 | 9 | 75.4 | first | | vocabulary |
| | is explaining | explaining | is being listened to | is listened to | | | | | | |
| | is standing | stand | is being opened | open | | | | | | |

*Was used for the present continuous passive dictogloss task

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*Appendix T: Dictogloss task for the structure of the simple past passive*

Oil was used by people thousands of years ago.  In ancient times, it was burned by people in oil lamps for light at night.  Also, people covered boats with oil to keep water out and the Chinese used oil as a surface for roads.  About a hundred years ago, far more oil was needed as a modern transport industry developed.  Luckily, people found large amounts of oil in many parts of the world, including the Middle East and North America.

*Appendix U: Dictogloss task for the structure of the present continuous passive*

Right now, Ahmed is sitting on an airplane.  The airplane is being flown by a pilot.  The plane will arrive in London in 4 hours.  Ahmed is looking out of the window.  The clouds look beautiful.  Ahmed is being spoken to by the air hostess.  She is asking him if he wants tea or coffee.  A paper cup is being held by the air hostess as she speaks.

*Appendix V: Certificate of ethics approval from Qatar University*

Qatar University Institutional Review Board
**QU-IRB**

June 30, 2015

Mr. James Scotland
Foundation Program
Qatar University
Tel.: 4403-5371
Email: scotland@qu.edu.qa

Dear Mr. James Scotland,

**Sub.:** **Research Ethics Review Exemption**
**Ref.:** **Project titled, "Moving towards self-regulation in the zone of proximal development: An exploration of the relationship between co-construction of linguistic knowledge within a learner's ZPD and longer-term individual and mediated performance of a complex grammatical structure"**

We would like to inform you that your application along with the supporting documents provided for the above proposal, is reviewed and having met all the requirements, has been exempted from the full ethics review.

Please note that any changes/modification or additions to the original submitted protocol should be reported to the committee to seek approval prior to continuation.

Your Research Ethics Approval No. is: **QU-IRB 475-E/15**
Kindly refer to this number in all your future correspondence pertaining to this project.

Best wishes,

Institutional Review Board
( IRB )
Office Of Academic Research

Dr. Khalid Al-Ali
Chairperson, QU-IRB

Qatar University-Institutional Review Board (QU-IRB), P.O. Box 2713 Doha, Qatar
Tel +974 4403-5307  (GMT +3hrs) email: QU-IRB@qu.edu.qa

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MSc, PhD, EdD & DEdPsych theses.

UNIVERSITY OF
E\<ETER

**Graduate School of Education**

## Certificate of ethical research approval

### MSc, PhD, EdD & DEdPsych theses

To activate this certificate you need to first sign it yourself, and then have it signed by your supervisor and finally by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: http://www.bera.ac.uk/publications and view the School's Policy online.

**READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER** (the form will expand to contain the text you enter). **DO NOT COMPLETE BY HAND**

**Your name:** James Scotland

**Your student no:** 610028728

**Return address for this certificate:** 17 Hudson Close, Old Hall, Warrington, Cheshire, WA5 9PY

**Degree/Programme of Study:** EdD Tesol (Dubai)

**Project Supervisor(s):** Dr. Philip Durrant

**Your email address:** js530@exeter.ac.uk

**Tel:** +974 3363 9672

**I hereby certify that I will abide by the details given overleaf and that I undertake in my thesis to respect the dignity and privacy of those participating in this research.**

**I confirm that if my research should change radically, I will complete a further form.**

**Signed:.................J Scotland.............................date:......15/06/2015.....................**

Chair of the School's Ethics Committee
updated: March 2013

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# Certificate of ethical research approval

**TITLE OF YOUR PROJECT:**

Moving towards self-regulation in the zone of proximal development: An exploration of the relationship between co-construction of linguistic knowledge within a learner's ZPD and longer-term linguistic and mediated performance of a complex grammatical structure

### 1. Brief description of your research project:

Qatar's entire education system has been recently subjected to a process of deep structural reform with the aim of aligning Qatar's national curriculum to the needs of its labor market. Teacher-centered pedagogies which have their roots in traditional Islamic education have been supplanted by modern learner-centered pedagogies which have their roots in Western education. This reform has radically changed how the English language is formally taught in Qatar. English language lessons which are based upon learner-centered pedagogies are now common place within the Qatari education system. However, it has not been empirically shown that teaching English through learner-centered pedagogy is more effective for students in a Qatari context than traditional teacher-centered pedagogy. Although there are many aspects of learner-centered pedagogy, this study will focus on the relationship between working collaboratively and linguistic development.

Vygotskyian sociocultural theory will be employed in order to investigate whether learners who are situated within a Qatari context learn a complex grammatical structure more effectively through working collaboratively or through working individually. Vygotskian psycholinguistics is well suited to studying the linguistic knowledge which is created through peer collaboration because its underlying premise is that higher cognitive development (including language learning) originates in social interaction.

One aspect of collaborative activity which may promote language development is the co-construction of linguistic knowledge. The dialogic interaction produced when co-construction takes place may offer a window into understanding how learners develop linguistically. When students co-construct new grammatical knowledge (either initial or restructured) the verbalization which takes place and the knowledge created is a source of language learning. This is because during this type of interaction learners may overtly use language as a psychological cognitive tool in order to regulate and mediate each other's linguistic performance.

By investigating whether students who are situated within a Qatari context learn a grammatical structure more effectively through collaboration or through working individually, this study can provide valuable practical knowledge on the type pedagogy which is best suited to teaching English in a Qatari context. This knowledge will be of interest to educational policy makers within the Qatari government as well as local and regional language teachers. In addition to contributing practical knowledge which can be applied to a Qatari context, this study will also generate valuable theoretical knowledge about second language acquisition.

Two methodological weaknesses exist within the current research which has investigated the efficacy of learning grammar collaboratively. Firstly, the data collection tools employed by previous studies have lacked sensitivity. All previous studies have only measured linguistic performance; they have

neglected to pay attention to the gains that the learners may have made towards self-regulating their performance (mediated performance). This is problematic because participants' subtle movements towards being able to self-regulate a linguistic feature may have gone undetected. As no study has thoroughly explored the relationship between the co-construction of grammatical knowledge and the internalization of that knowledge using both data on linguistic and mediated performance, it remains to accurately be seen to what extent co-constructing linguistic knowledge enables learners to develop linguistically. Secondly, it is not clear how durable the previously reported linguistic gains are. Most of the studies which have investigated the efficacy of learning grammar collaboratively took place over extremely short time-frame. As this study will take place over 14 weeks, it is hoped that it will provide insightful longitudinal information regarding the relationship between peer co-constructed linguistic knowledge and subsequent independent L2 performance.

This longitudinal study will employ Vygotskian sociocultural theory to explore the relationship between the co-construction of linguistic knowledge and learners' longer-term movements towards self-regulation of an L2 syntactic structure. In order to allow for a detailed developmental analysis, one specific complex syntactic structure will be exclusively focused on. Additionally, the learning outcomes and the interpsychological learning processes involved will be investigated in tandem by collecting both qualitative and quantitative data. A thorough examination of the relationship between the using language as an interpsychological cognitive tool and the resulting longer-term effects on both linguistic and mediated performance is an important step in understanding how second language acquisition is situated within socially embedded dialectical processes. Thus, this knowledge will also be of international interest to second language acquisition researchers.

**2. Give details of the participants in this research (giving ages of any children and/or young people involved):**

No vulnerable groups will be targeted. All research participants will be adult students who are enrolled at the University of Qatar. All the students will be undergraduate students. The students will be native Arabic speakers and of pre-intermediate level.

The participants will be recruited from intermediate classes of English as a Foreign Language (ENGL250) from Qatar University.

They will be recruited by James Scotland who is this study's researcher. The researcher (James Scotland) will not be the class teacher of any of the participants. The participants will be recruited from the classes of the researcher's colleagues.

**Give details (with special reference to any children or those with special needs) regarding the ethical issues of:**

**3. informed consent: Where children in schools are involved this includes both headteachers and parents). Copy(ies) of your consent form(s) you will be using must accompany this document.** a blank consent form can be downloaded from the GSE student access on-line documents: **Each consent form MUST be personalised with your contact details.**

All participants will be informed about the aims and purposes of the study. A native Arabic speaker will meet with the participants in a whole class setting in order to explain the purpose of this study. This meeting will provide the potential participants with an opportunity to ask questions about the study. The researcher will be present during this meeting.

Participation in the study will be voluntary. The study will be integrated into the students' regular English curriculum, but only the data from participants who give their informed consent to participate will be included in the research. The participants' informed consent will be sought prior to the start of data collection. Participants will be asked to sign two written consent forms (please find attached). Each consent form will contain information about the study. The first signed consent form will be required for general participation in the study. This includes participating in the pre-test, immediate post-test, the delayed post-test, the three treatment sessions, the learning history questionnaire, and the exit questionnaire. The second signed consent form will be required in order to be audio recorded during each of the three treatment sessions. As the participants are intermediate learners of English, the consent forms will be in English only. If some students are unsure about participating, then they will be allowed to take the consent forms home and reflect.

All students will be offered an opportunity to ask further questions about the study in a face-to-face meeting with James Scotland before they decide whether or not to consent to take part.

## 4. anonymity and confidentiality

All data will honour assurances of confidentiality and anonymity. Participant confidentiality (named identity) will be maintained and remain with the researcher.

All students will be given pseudonyms. Through the use of these pseudonym identifiers, all participants will be anonymised for data analysis and any release/dissemination outside the study.

In order to identify which participants have agreed to be audio recorded, the researcher will keep a name list with first names linked to the pseudonym identifiers. This sheet will remain locked away with the researcher and will be password-protected. After the project is over, this sheet will be destroyed. In this way, all data can only be referenced by pseudonym identifiers.

If participants agree to be audio recorded, then their recording will be transcribed and translated into English by a professional translator. The subsequent translation will be viewed by the translator, the researcher, and the researcher's supervisor.

## 5. Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:

The study will take place over a 14 week period.

Dynamic assessment and the genetic method will be combined resulting in a mixed methods approach. This approach will involve the collection of both quantitative and qualitative data. No sensitive data under the definition of the Data Protection Act 1998 will be collected as part of the elicitation instruments.

Dynamic assessment will be employed to collect quantitative data relating to participants linguistic and medicated performance of a specific syntactic structure. All participants will complete a pre-test, an immediate post-test, and a delayed post-test. In order to complete this test, each participant will be removed from their class. Each test will take less than 5 minutes and involve sentence level writing of a predetermined grammatical structure. In line with dynamic assessment, if students write the sentence incorrectly, then they will be given real time feedback and another opportunity to write the sentence. Participants will have three opportunities to write the sentence correctly. The feedback

given to the student will become increasingly explicit. These tests will produce quantitative data. This data will be analysed using both descriptive and inferential statistics.

The genetic method will be employed to collect qualitative data relating to the extent that participants co-construct linguistic knowledge. Participants in both the collaborative (Experimental Group 1) and individual (Experimental Group 2) groups will complete three treatment sessions. Participants in the control group (Experimental Group 3) will not complete any of the treatment sessions. Each treatment session will last around 30 minutes and involve completing an activity in class which is designed to raise learners' awareness of the targeted grammatical structure. Participants who volunteer will be audio recorded during all three treatment sessions. In line with the genetic method, each audio recording will be transcribed and analysed by being broken down into language-related episodes (LREs). LREs can provide a detailed (micro-genetic) analysis of how language learning occurs in dialogue. This analysis should allow direct observation of the participants' linguistic knowledge as it is co-constructed as well as the resulting transformations which may occur within participants' performance of the target language.

Finally, the participants will complete a learning history questionnaire at the start of the study and an exit questionnaire once they have taken the delayed post-test.

6. **Give details of any other ethical issues which may arise from this project - e.g. secure storage of videos/recorded interviews/photos/completed questionnaires, or**

All data will be kept securely.

All data collected (test scores, scanned questionnaires, and mp3 audio files) will be stored in a specially created Dropbox account, thus ensuring that data is not stored on a computer which is owned by the institution in which the study takes place. Only the researcher will have access to the Dropbox account. All data will be anonymised through the use of pseudonyms at the point of collection.

Analogue data will be stored in a locked cabinet in one of researcher's office at the University of Qatar.

After two years all data pertaining to this study will be destroyed.

7. **special arrangements made for participants with special needs etc.**

N/A

8. **Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):**

The research has no potential risk.

The study will be integrated into students' regular class instruction. Participants will be asked to perform second language writing tasks similar to those which they would normally carry out as part of their English language course.

The targeted grammatical structure will be taken from the course syllabus. Because the control group will not complete the treatment sessions, they will not receive any intentional input on the target structure. In order to address this ethical issue, the control group will receive input on the targeted

structure which meets the specifications of the syllabus after they have completed the delayed post-test. Thus, the control group will not be adversely affected by participating in this study.

In order to carry out the dynamic assessment, the participants will be removed from their classroom for a short time (less than 5 minutes). Due to the short duration, this will have minimal impact on the participants of the study. Additionally, the dynamic assessment task is also a learning task. Therefore, by completing the dynamic assessment a participant should also increase their knowledge of the passive structure.

Some students may feel uncomfortable at the prospect of being audio recorded. Consequently, the consent form for the study has been separated into two in order to allow students to participate in the study without being audio recorded during the treatment sessions.

No deception is involved in the study. All participants who choose to be audio recorded will have the opportunity to view their transcripts. Participants will not be given the opportunity to edit their transcripts.

This study has no commercial interests. This study is funded by the researcher. The results of this study will be used for an EdD, several journal articles, and several conference presentations. The results will be disseminated through international second language acquisition journals and presentations at international second language acquisition conferences.

The researcher's safety is not at risk. The researcher will not be alone with a participant in any capacity for the duration of the study.

---

*This form should now be printed out, signed by you on the first page and sent to your supervisor to sign. Your supervisor will forward this document to the School's **Research Support Office** for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.*

*N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor*

---

**This project has been approved for the period:**     15 June 2015     **until:**   31 June 2016

**By** (above mentioned supervisor's signature):  ...                         date:.........22/06/2015.......................

*N.B. To Supervisor:  Please ensure that ethical issues are addressed annually in your report and if any changes in the research occur a further form is completed.*

**GSE unique approval reference:**.................. D/14/15/53....................................

**Signed:**.........                          ....................................date:......23/06/2015.......................
Chair of the School's Ethics Committee

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Chair of the School's Ethics Committee
updated: March 2013

## CONSENT FORM 1 – GENERAL PARTICIPATION

As well as being your teacher, I am studying for a Doctorate of Education with Exeter University. I am interested in second language learning and teaching. I would like you to participate in my research.

### Title of Research Project

Moving towards self-regulation in the zone of proximal development: An exploration of the relationship between co-construction of linguistic knowledge within a learner's ZPD and longer-term linguistic and mediated performance of a complex grammatical structure

### Details of Project

I would like to invite you to participate in a research study that examines the relationship between working collaboratively in class and learning grammar. There will be three groups. You will be placed into one group. You will not know which group you have been placed into.

If you decide to participate, then you may complete the following:

- three grammar tests which will involve writing sentences
- six grammar activities
- a questionnaire on how you learned English in the past
- a questionnaire on your thoughts about the study

The answers to the grammar activities will also be analyzed.

There is no commercial interest in this research. The results of the study may be used for journal articles and/or conference presentations. You can ask for your data not to be used in this study at any time.

You may leave the study at any time. If you choose to leave, then all data collected from you will be destroyed.

I would be very grateful if you would agree to take part!

**Contact Details**

For further information about the research or your interview data, please contact:

James Scotland

The Foundation Department

Qatar University

Tel: 00 974 44035371

Email: scotland@qu.edu.qa

**Confidentiality**

Your data will only be used for this study.  Only I will keep your data.  If you ask for it, then you will be given a copy of all of your data.

Your data will be destroyed after two years.

**Consent**

|  |  | YES | NO |
|---|---|---|---|
| 1. | I have had explained to me the purposes of the project and what will be required of me. | □ | □ |
| 2. | All my questions about the study have been answered. | □ | □ |
| 3. | I understand that it is my choice to take part in this study and I can leave the study at any time. | □ | □ |
| 4. | I understand the contents of this Consent Form. | □ | □ |

I agree to take part in this study.

.......................………………...…….. ……………………………

(Signature of participant )    (Date)

......................…………………..…….

(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher

**CONSENT FORM 2 – BEING AUDIO RECORDED**

As well as being your teacher, I am studying for a Doctorate of Education with Exeter University. I am interested in second language learning and teaching. I would like you to participate in my research.

**Title of Research Project**

Moving towards self-regulation in the zone of proximal development: An exploration of the relationship between co-construction of linguistic knowledge within a learner's ZPD and longer-term linguistic and mediated performance of a complex grammatical structure

**Details of Project**

I would like to invite you to participate in a research study that examines the relationship between working collaboratively in class and learning grammar. There will be three groups. You will be placed into one group. You will not know which group you have been placed into.

If you decide to participate, then you will complete the following:

- six grammar activities

You will complete each grammar activity together with two of your class members. I would like to audio record you during each of the grammar activities. This audio recording will be typed out in English and how you talk about grammar will be examined.

There is no commercial interest in this research. The results of the study may be used for journal articles and/or conference presentations. You can ask for your data not to be used in this study at any time.

I will share the overall results of the study with you.

You may leave the study at any time.  If you choose to leave, then all data collected from you will be destroyed.

I would be very grateful if you would agree to take part!

**Contact Details**

For further information about the research or your interview data, please contact:

James Scotland

The Foundation Department

Qatar University

Tel: 00 974 44035371

Email: scotland@qu.edu.qa

**Confidentiality**

You will be asked to choose a 'fake' name for the study.

Your data will only be used for this study.  Only I will keep your data.  Only I will have access to your data.  If you ask for it, then you will be given a copy of all of your data.

Your data will be destroyed after two years.

**Consent**

|   |   | YES | NO |
|---|---|---|---|
| 5. | I have had explained to me the purposes of the project and what will be required of me. | □ | □ |
| 6. | All my questions about the study have been answered. | □ | □ |
| 7. | I understand that it is my choice to take part in this study and I can leave the study at any time. | □ | □ |
| 8. | I understand the contents of this Consent Form. | □ | □ |

I agree to take part in this study.

..........................…………………….…….                      ……………………………

(Signature of participant )                                    (Date)


..........................……………….…….
(Printed name of participant)


One copy of this form will be kept by the participant; a second copy will be kept by the researcher

*Appendix Z: Administration procedures for each treatment task*

*Guided learning tasks*

- The instructions for the guided learning tasks are contained within the activities themselves.
- The participants were given around 20 minutes to complete each guided learning task.
- The teacher provided feedback in a whole class setting.

*Text-editing tasks*

- The teacher introduced and explained a text-editing task to the participants.
- The participants were given around 12 minutes to complete each text-editing task and then check their corrections against the original text.
- The teacher provided feedback in a whole class setting.

*Dictogloss tasks*

- The teacher introduced and explained each stage of the dictogloss task to the participants.
- The teacher played each audio recording thrice.  The students took notes the second and third times.
- The participants were given around 10 minutes to recreate the text and check their reconstruction against the original text.
- The teacher provided feedback in a whole class setting.

*Appendix AA: Transcription conventions*

| | | |
|---|---|---|
| [Inaudible] | = | unclear speech |
| … | = | a sequence of dots shows a brief pause |
| **Bold and italics** | = | bold and italics are employed when giving an Arabic word e.g. **Ba'den** |
| {English Translation} | = | brackets enclose the English translation of a previously given Arabic word e.g. **Ba'den** {Then} |
| ? | = | rising intonation at the end of an utterance indicate that a question was asked |

All names have been replaced with pseudonyms.

*Guided learning*

00:00 Researcher: Thanks

00:03 Participant 17: **el tasjeel** {the recording} **tab'an ento 'arfeen lesh** {of course you know why} **ehna ya'ny nesa'd ba'd wel tasjeel mawjood** {we help each other while recording**} bgheet tetkalam engleezi wala arabi 'ala rahatkom** {if you want to speak in English or Arabic, it's your choice}

00:14 Participant 16: **besm ellah** {in the name of God, we start}

00:15 Participant 11: **el heen yegool** {it says here} sentence 1 who is taking the exam?

00:22 Participant 17: Student taking the exam

00:23 Participant 11: Who is taking the exam? **Ba'd marra thaniya** {once again}

00:27 Participant 17: Student taking the exam

00:28 Participant 16: Student

00:29 Participant 11: **Nektebha. Nektebha hena**. {let's write it. let's write it here}.

00:31 Participant 17: **Eh. Nekteb** {yes. Write this here}

00:37 Participant 11: The students**.** Huh? **Nafs el shai hena** {same here} student.

00:41 Participant 17: Student **walla** {or} students?

00:44 Participant 11: Student.

00:45 Participant 17: Student

00:48 Participant 16: Student **ba'd** {indeed}

00:49 Participant 11: **We hena student ba'd** {as well} **sah** {right?}. If the meaning of the sentence is different **ma'naha mokhtalef el kelmetten** {its meaning different, the two words}

01:00 Participant 17:  **Nshoof** {lets see}

01:03 Participant 16: It's like **hathy** {this}.

01:04 Participant 11: The student is taking the exam. **Wel soal el thany** {and the second question} the exam is being taken by the student.

01:10 Participant 16: Neither

01:11 Participant 17: *Hay el jommla 'shan elly heya hena*. {this sentence because of this}

01:13 Participant 11: *Helw* {nice}. *El jomla feeha shai mokhtalef? Beygolek el meaning different walla laa*? {the sentence has something different?} Yes or no*? hatrod hna* no {you will answer no} .

01:27 Participant 17: No.

01:31 Participant 11: Sentence one, in past/present/future. How do you know? *El jomla el ola* {sentence one} the student is taking the exam. *Hal heya fel mady walla el hader walla el mostaqbal* {is it in the past or the present or the future}? *Men nahyety ana* {from my side}

01:46 Participant 17: *La hader tab'an* {no, it's of course present}

01:47 Participant 11: *Lesh*? {why}?

01:48 Participant 17: Taking.

01:49 Participant 11: *Beldabt ketha* {exactly}

01:51 Participant 11: *Went sht tegool*? {and you, what do you say?}

01:52 Participant 16: Past? *Walla* {or} *mo* {not} past

01:55 Participant 17: Taking. Taking

01:56 Participant 16: Present. Huh?

02:00 Participant 11: *Helw* {nice}. *El jomla el thaneya* {sentence two} the exam is being taken by the student.

02:07 Participant 16: Being *walla* {or}?

02:12 Participant 17: Present huh?

02:17 Participant 11: *Zen* {good} fill in the missing number. How many words are in sentence one. *Kam kelma*? *Kama kelma* {how many words, how many words}?

02:27 Participant 17: Four, five, six

02:32 Participant 16: Taken thee. Taken *mahy mady* {isn't taken in the past?}

02:34 Participant 11: Huh?

02:35 Participant 16: Taken

02:38 Participant 11: Taking. *La* {no}. ing.

02:39 Participant 16: *La*. {no} Taken. Taken.

02:40 Participant 17:  *Eah* {yes} *Kelma wahda*. Taking.

02:42 Participant 16: La *taht. taht. taht*. {No the one below. Below. Below}

02:45 Participant 17: *Taken kelma wahda* {one word}.

02:47 Participant 16: *Sah.sah. sah*. {Right, right, right}

02:48 Participant 11: *La*. {no}. *yegool*. {It says} The exam is being.

02:55 Participant 17: *Homa kam? Kam? Ne'edohom sah? Itnayn, talata, arba'a, khamsa, sitta, seba'a, thamanya* {How many are they? How many? We will count them? Two, three, four, five, six, seven, eight}

03:00 Participant 11: *Thamanya* {eight}

03:05 Participant 11: *Dageega. Halheen ali gal taken*. *Hey shoof* {One minute. Just now Ali said "taken." Here, see}.

03:11 Participant 16: *Taken mady sah*? {"Taken" is past right}? *El emtehan okheth* {the exam was taken}

03:13 Participant 11: Take. Taken. Taken *el tasreef el thaleth*. *Taken el tasreef el thaleth* {Taken is the third conjugation, taken is the third conjugation}.

03:18 Participant 17: *Eh. Zen. She el moshkela*. {Yes. Right. What is the problem?}

03:21 Participant 11: *Ya'ny mady sah?* {right, it's past, right?}

03:23 Participant 17: *Enty gasdek hathey ya'ny*? {Do you mean this?} '*ala hathy el gomla el thaneya*? {for sentence two} Future *ya'ny teby* {it's a future you mean?}

03:26 Participant 11: *La. La*. *Momken yekoon past*. {No, no. It could be past}… *kaleh kaleh kaleh*. { wait.wait.wait } which word are different? *Wesh el kalemat el mokhtalefa* {which words are different?} *wesh el kalemat elly mokhtalefa* {which words are different}?

03:40 Participant 16: '*Andek elly how* {you have} by

03:42 Participant 11: *Esh feha*? {what about it?}

03:43 Participant 16: Hey *mawgooda sah*? {Here it is, right?} Taken, taking.

03:50 Participant 17: *Atwaka' hathol bas*? *Sah*? {I think that's it} *Hathy*? *She esmaha*? {This one? What its name?} Being.

03:56 Participant 11: *Eywa* {yes}

03:57 Participant 16: *Sah* {right}

03:57 Participant 17: *Wa* {and} by.

03:58 Participant 16: *Wa* {and} taking *we* {and} taken.

04:00 Participant 11: Taking *wa* {and}

04:01 Participant 17: Taken *nafs* {same} el sentence.

04:02 Participant 11: *Yegoolo esh el kalemat* {which are the words}

04:04 Participant 16: *Elly etghayaret?* {that changed?}

04:06 Participant 11: *elly mekhtalefa* {that are different}

04:07 Participant 17: *Aktob*, {I will write} being, taken, by. *Sah* ? {right?}

04:11 Participant 11: *A'taked* {to make sure} take

04:13 Participant 16: *Ektebha kolaha* {write all of it}. *Eh* {yes} take.

04:28 Participant 11: the correct word. Sentences one, sentence one is in the, is in the active/passive voice? *Esh ma'ana passive voice* {what does passive voice mean?}

04:42 Participant 17: *Haza* active *we* passive {it's active and passive} [inaudible]

04:51 Participant 11: *Hazek el marra nafs el shai* {this time it's the same thing}

04:53 Participant 17: *Dageega wenha* {one minute, where is it?}

04:59 Participant 11: *Haza haza* {this one this one}

05:00 Participant 16: *Ektebha halatol* {write it right away}

05:03 Participant 11: *Ehna . La etla' yemeen* … {we are. no go to the right?} ah *yetargemonah* {they translate it}. *Helw* {nice} *Sho* {what is} passive voice?

05:11 Participant 17: *Sout*? {Voice}

05:14 Participant 16: *Nashet* {active} sout. *sah*? {Right} *el sout el nashet* {the active voice}

05:20 Participant 17:  *La la la* {no no no} *ma zabtat* {that's not it}

05:28 Participant 11: *Ektebha. Ekteb* {write It. write}

05:37 Participant 17: *Haba sary sah*? {there is still a while right?}

05:39 Participant 11: *La  ba'd Raweh raweh* {no, go home, go home}

05:41 Participant 17: *La abl* voice *sout* ? {no before that,  voice means sout?

05:00 Participant 11: Ok. *lakamel. Hady el jomla kolaha* {let me finish. This is the whole sentence}

05:44 Participant 17: *La la la bas hathe* {no no no just this} *el active wel passive wesh ma'anaha?* {What is the meaning of active and passive?}

05:48 Participant 11:  *Kol el* {all this}

05:49 Participant 17:  *Taweeha*? {it contains it}?

05:50 Participant 11: *el kol* … {all of it} *La 'alashan* {no, because}

05:54 Participant 17: *Khalas hathy kolaha targama* {that's all. It's all translation}

05:04 Participant 11: *hatha* le active *we* {and} passive

06:05 Participant 17:  El voice *el sout* {voice}

06:08 Participant 11:  Huh?

06:09 Participant 17: Voice **sout** {voice}

06:10 Participant 16: **El sout el nashet walla el sout el ma'rouf**? {The active voice or the definite voice}

06:12 Participant 11: **Bas ana beyeh akamelah**. {But I have to finish it} **sawerha** {take photo of it}. So, active we voice. **Hay** {it's a voice} a voice. **Bas raweh** {that's all, go home}. **Majhool** {passive}.

06:25 Participant 17: **Nashet we majhool sah**? {Active and passive right?}

06:36 Participant 11: How do you know?

06:37 Participant 17: Sentence one. **Nashet walla majhool**? {Active or passive?}

06:53 Participant 17: **Majhool atwaqa'** {passive, I think} **el ola** { the first one} **laen** {because} the student **el taleb** {the student} ,taken **menho taleb**? {Which student?}

07:00 Participant 16: **Yakhod el emtehan** {took the exam}

07:02 Participant 17: **Sah**? {right}

07:02 Participant 16: **La the student shaklaha ma'roof ya'by** {no, the student is known} **law gal** {if it said} a student. **sah majhool** {right passive}.

07:11 Participant 17: **Haze** {this is}

07:12 Participant 11: **A'taked** { I think} **kola** {all of them} active

07:14 Participant 17: **Metaked**? {sure?}

07:34 Participant 17: **Ekteb esh esmah**? {write what its name? }

07:35 Participant 16: **El awel a'taqed elly howa** {the first one I think, which is} active. **El thany** {the second one} **majhool** {passive}

07:42 Participant 17: **Hot** active {put active} **active elly how nashet walla majhool**? {The active means active or passive?}

07:48 Participant 16: Active **nashet** {active} activity

07:53 Participant 11: **Majhool** {passive}

07:55 Participant 17: **Nashet we majhool sah**? {active and passive, right?}

08:04 Participant 16: **Majhool shou ma'na**?{ what is the meaning of "passive"?}

08:06 Participant 17: Huh?

08:07 Participant 16: **Shno awel kalema** {what's the first word?}

08:08 Participant 17: **Hathe?** Sentence. **El jomla** {sentence} **el jomla el ola hiya** {sentence one is} active **walla** {or} passive?

08:17 Participant 16: **El sout** {the voice}

08:21 Participant 11: *Hathy tara laha qawa'ed akeed ehna ma'arafnaha* {it must have rules, of course, which we frankly don't know} *laken nakteb ay kelma 'ady 'ashan tamshy bas* {but we'll write any word to move things along} *we howa ysaleh lna* {and he will edit for us when he arrives}

08:29 Participant 11: *La* {no} active.

08:32 Participant 16: *El thaneya 'aks. Hayetla' aks* {Two is the opposite. It will be the opposite}.

08:36 Participant 17: '*Ady* {normal}

08:38 Participant 11: *Halheen active nashat* {now it is active}. The structure of sentence one. The student subject. Is be verb. Taking main verb *ya'ny esh* main verb? {what does main verb mean?} *ya'ny fe'l raeesy*. {Meaning it's a main verb}. The exam object. Use the word in the box to make the structure of sentence two. The exam *hatakhod hena* {it will take here} subject. *Helw* {ok?} is *elly how* {which is} be verb el being, *shoof hatha* {see this is} object. The student object,

09:34 Participant 17: *Tara te'kes* {it will be the opposite}

09:37 Participant 11: By. By

09:40 Participant 17: *Atwaqa' hathe object we hathy subject* {I think this is object and this is subject}

09:47 Participant 11: *La* {no}

09:48 Participant 17: *Motaked?* {sure?}

09:49 Participant 11: *Eh* {yes}

09:50 Participant 17: Ok

09:53 Participant 11: Subject object being be be be verb by. *Yegool* {it says} Complete the following sentence using the word in the box to help you. The verb phrase of the present continue passive is made using a …*a'taqed* {I think} be be followed by being which is then followed by the

10:26 Participant 17: By be verb *walla* {or} being?

10:29 Participant 11: Be verb

10:34 Participant 16: *Eah*. {yes}. *Fel gam'a* {at university}. *Eah* {yes}. *Ma adry* { I don't know}. *Yalla bye* {goodbye}.

11:09 Participant 11: *Yegool el jomla el fe'leya* {it says the verbal sentence} *el jomla el fe'leya men al modare' al mostamer* {the verbal sentence is in the present continuous} passive. *Al jomla el fe'leya tastakhdem majhool* {the verbal sentence uses the passive}. *Asal majhool is tasreef el thaleth walla*

being {passive is the third conjugation or is being?} it followed by be be. The be verb. Which then followed by be verb.

12:02 Participant 16: **Aghlab sah**? {probably right}

12:10 Participant 11: **Yegol** {it says} please change the following sentences to the active voice. The game is being played by the girl. The girl is playing the game. The email is being deleted by the worker. The worker is. **A'taked** {I think} **helw helw helw helw** {nice nice nice nice} is playing. **La** {no} is deleting.

12:50 Participant 17: Deleting **walla** {or} deleted?

12:51 Participant 11: Deleting.

12:53 Participant 17: Ok.

12:56 Participant 11: The email. **Helw** {nice} The student is being tested by the teacher. **Bengool esh**? {what do we say?} The teacher.

13:09 Participant 16: Is.

13:13 Participant 11: The teacher.

13:15 Participant 16: Is stating.

13:17 Participant 11: Testing.

13:18 Participant 17: Was**. Lesh matsee**r was testing? {Why can't it be was testing?}

13:19 Participant 11: Huh?

13:21 Participant 17: **Matseer** was testing {can't it be was testing?}

13:24 Participant 11: **La. Lanaha hal heen** {no because it's now}

13:25 Participant 16: **Modere' heya** {it's present}

13:26 Participant 17: Ok.

13:28 Participant 11: Testing.

13:29 Participant 17: The student.

13:31 Participant 11: Testing **esh**? {Testing what?} Testing, **yakhtaberon eh?** {what are they testing?} Testing the. The letter are being delivered by. **Engool esh** {what do we say?} the worker. [inaudible] The worker is delivering the letters. **Helw** {nice} please change the following sentences to the passive voice.

14:17 Participant 17: **El 'aks** {the opposite}

14:20 Participant 16: **lesh 'aks?** {why opposite}?

14:21 Participant 11: **Huh?** The girl is playing

14:23 Participant 17: **Nohot el** {put the being} being

14:26 Participant 11: The idea

14:27 Participant 17: Is. Past **tab'an** {of course}

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14:31 Participant 11:  Being.

14:33 Participant 17:  Being ***nohot***  {we put} past

14:34 Participant 11: ***La, mo*** {no not} past

14:36 Participant 17: ***Elly heya*** {which is} ***ing***. Past.

14:38 Participant 11: We she researched? ***El tasreef el thaleth hag researched, wesh tha?*** {The third conjugation of researched is what?}

14:44 Participant 16:  ***Past haga bas*** {past only}.

14:46 Participant 11: Research. ***El tasreef el talet haga wesh***? {What is its third conjugation?}

14:56 Participant 16: Researching?

14:59 Participant 17: Researched?

15:09 Participant 16: By ***hatetah*** {I put it}

15:11 Participant 11: Ok ***wala yehemak*** {no problem}

15:17 Participant 11: ***Yegolesh hena*** {it says here} the goal

15:18 Participant 16: The goal is. The goal ***ekteb*** {write} is

15:27 Participant 11: ***Aywa*** {yes}

15:30 Participant 16: Being played ***walla*** {or} played ***walla*** {or}? By the football player.

15:48 Participant 11: The police officer is investigating the crimes. ***Mengoul esh*** {what do we say?} The crime is ***sah***? {right}

16:05 Participant 16: humm

16:06 Participant 11: Being investigated, ***sah***? {right?}

16:16 Participant 16: Yes

16:16 Participant 11: Investigated by the police officer. ***Sah*** {right}?

16:27 Participant 16: ***Sah*** {right}

16:32 Participant 17: ***Khalas*** {are we finished?}

16:35 Participant 11: ***Active? Eshlon active?*** {How is it active}? Passive voice. ***Eshlon? Eshlon 'arafna enaha active hatha?*** {how did we know it's active?} ***ektobha*** {write it} passive. The idea is being. ***Keif 'arafna anaha***? {How did we know that it is}?

16:58 Participant 16: Present. ***Sah***?

17:03 Participant 11: ***Sho? Akteb*** {write}.

17:13 Participant 11: Present?

17:14 Participant 11: ***La. La. Sah***? {no, no, right?}

17:17 Participant 16: Sentence

17:18 Participant 11: *Aw* {or} because. Use *esh*? {what?}

17:31 Participant 16: Present *walla*? {or}

17:32 Participant 11: No

17:37 Participant 16: Because

17:49 Participant 11: *Sah?* {right?} *Wesh gal el qaaeda* {what does the rule say?} [inaudible] The word in the box to make the

18:11 Participant 17: *Khalas khalasna* {are we finished?}

18:18 Participant 11: [inaudible] *Beygolek the verb el jomla el esmeya* {it says the nominal sentence} of the present continue passive. Present continue passive is made using a. Followed by. *tatba' bewaseta walla tatba'*? {Followed using or following?}

18:41 Participant 17: *Tatba' be* {followed by}

18:42 Participant 11: Followed by, *esh ma'nat* {followed by?} *fahamt eshlon*? {Did you understand how?} *bas* {that's all} *shoof weno* {see where he is}

18:57 Researcher: Finished?

18:58 Participant 16: Finished

00:02 Participant 12: *Ikraa* {Read}

00:09 Participant 11: Right now, Maha is at the zoo. The weather is very nice, and the sun is shine brightly. Maha observing zoo keeper feed two rhinos. The rhinos is being fed fresh grass by the zoo keeper. The grass is chewed by the rhinos, Maha watch by one rhino as it slowly chews the grass. Maha press her hands onto the glass of the enclosure.

00:50 Participant 12: *Hay bl madi wala bil…?* {is this in the past or in the…?}

00:52 Participant 11: Right now, right now. Maha is at the zoo. "*At*" *walla* *'"in"?* {Is it 'at' or 'in'?} Maha…

01:06 Participant 12: In the zoo. In the zoo.

01:14 Participant 11: [Inaudible] The weather is very nice and the sun is shine brightly. *Kella sah yemkin* {I think everything is correct}. Maha observing the zoo keeper. Maha observe…oh, *talat ghaltat feeh mistakes* {oh, three mistakes, there are mistakes}.

01:52 Participant 12: *Set akhtaa* {6 mistakes}

01:53 Participant 11: Ah, OK. Three mistakes are in the active voice and three mistakes are in the passive voice. Maha is at the zoo. *Hay* "active voice" {this is in the active voice}. *Hay wahed* {this is one}. One active voice. The weather is very nice and the sun is shine brightly. Maha observing a zoo keeper.

02:32 Participant 12: *Hon el jaw ok* {here it means that the weather is ok}. The weather is very nice. *Wa alshames sat'a* {the sun is shining brightly}.

02:39 Participant 11: *Sah* {correct} shine brightly.

02:48 Participant 12: [inaudible] *hon fi khataa* {there is a mistake here}

02:55 Participant 11: *Zat al-khataa kellon* [inaudible] {all the mistakes are the same?}

02:57 Participant 12: Maha observing a zoo keeper feed two rhinos.

03:03 Participant 11: "Feed" *shou"* feed"? {What does "feed" mean?}

03:04 Participant 12: *Tot'im* {feeds}

03:08 Participant 11: *Yemken hadi fi* fed, food, feed, feed. *Medri* {Maybe it is fed, food, feed, feed. I wonder}. Haydi fed shi matrah {is there fed somewhere?} *ba'ed "*feed."

03:20 Participant 12: *Haza fed* [inaudible] {This is "fed"…}

03:22 Participant 11: Fed, feed.

03:24 Participant 12: *Eza "*feed,"*hay "*feed" {If feed is an option, then this should be feed}.

03:25 Participant 11: Feed? The weather is very nice [inaudible]

03:40 Participant 12: *Hay bil madi lesh? Khataa* {Why did you put it in the past? It's incorrect}. *Sah. Manna bil hader ha, mish bil madi* {It is in the present not in the past}. The grass is…

03:50 Participant 11: [Inaudible]

03:54 Participant 12: *Waini* "watch/watching"? {where is watch/watching?}

04:00 Participant 11: Maha watch, Maha watch by one rhino as it slowly. *Yemken* {maybe} *"*watched", "watched it by." *Hot hedi* {Put this}.

04:13 Participant 12: *Hedi?* {this one?} Ed? Right now, *Shou hedi?* {What is this?}

04:21 Participant 11: Maha watched by. Watched. One rhino. Maha press her hands onto the glass…

04:32 Participant 12: Why, sir, onto?

04:36 Participant 11: Into?

04:39 Participant 12: *Shou ya'ne* "onto"? {What does "onto" mean?}

04:41 Participant 11: The tree. Press. [Inaudible]

04:55 Participant 12: On the hand, *sah?* {Correct?} On the glass*, sah?* {Correct?} *Am hay khataa?* {Correct? Or is wrong?}

05:18 Participant 11: [Inaudible] Right now, Maha is at the zoo.

05:38 Participant 12: *Hadi "*as it slowly*" khataa, sah?* {"As it slowly" is incorrect, right?} Maha watching by one…

05:50 Participant 11: *Shou* {What?} By the rhinos.

06:06 Participant 12: *Hay Kaman khataa?* {This is also wrong?}

06:07 Participant 11: Maha is at the zoo. The weather is very nice and the sun is shine brightly. Maha observing a zoo keeper feed two rhinos.

06:24 Participant 12: *Esh ya'ne* 'observing'? {What does observing mean?}

06:25 Participant 11: *Hay ghalat* {This one is wrong}.

06:27 Participant 12: *Esh me'na* "observing"? {What does "observing" mean?}

06:28 Participant 11: *Yemtas* {to absorb}

06:30 Participant 12: *Ya'ne shou, yemtas shou?* {What does it mean? Absorb what?}

06:32 Participant 11: *Laa ya'ne mathalan ha t'eda, mahak?* {For example, you count this,

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right?} **Hay al-jomla kela ghalat** {the entire sentence is incorrect}.

06:43 Participant 12: [Inaudible] **Shu ysir ya'ne**? {How should it be?}

06:46 Participant 11: Maha **thot** {you put} **Hot bas hena khat, hena khataa** {Put a line here, this is incorrect}. **Hay el jomla kella ghalat** {the entire sentence is incorrect}

07:04 Participant 12: **Hay arba' akhtaa, wa hay khams akhtaa, wa hay seta**. {This is the fourth mistake, and this is the fifth, and the sixth}. **Ma feeh khataa** {There is no mistake}

07:09 Participant 11: **Aktar shi khamsa** {five is the maximum}. Maha press her hands onto the glass. **Hay aljomal kela ghalat** {these sentences are all incorrect}. These sentences…

07:29 Participant 12: **Hathy** "by the rhino" **wala** "by rhino" **'ala toul**? {Is it always "by the rhino" or simply "by rhino"?}

07:32 Participant 11: By the rhino, **sah** {Correct}

07:33 Participant 11: The grass is chewed by… three mistakes. Oh, okay. [inaudible] **ha nsawi** {we will do it like this} is, the grass is being chewed by the rhinos.

08:04 Participant 11: Maha watch, Maha is being watched, Maha is being watched by the [inaudible].

08:21 Participant 11: Maha is being observing **aw** {or} Maha observed… **Akid ma feeh…**{surely there's not} [inaudible]

08:35 Participant 12: **Khalast?** {You're done?} **Ba'ed?** {There is more?}

08:45 Participant 11: **Hanshuf** [inaudible] {let's see}. "Are being fed." **Nadif** "being"? {We add "being?}. **Halaa koloh sah, masalan la hon** {now the entire sentence is correct till here}: is shining.

08:57 Participant 12: **Hadi is hon sah?** {Is it correct to put is here?}, watched, watch. **Shini sah?** Press {which one is correct? Press}.

09:03 Participant 11: **Wen?** {Where?} is being watched, **metel ma hattayta abel** {like we used it before}

09:06 Participant 12: **Ayya wehde?** {Which one?}

09:07 Participant 11: **Hadi** {this one}, Maha watch, is being watched.

09:12 Participant 12: OK.

09:13 Participant 11: **'Adalta hin** {you modified it here?} The grass is chewed, is being chewed, is observing, Maha is observing, Maha is pressing.

09:31 Participant 12: **Hadi?** {this one?}

09:37 Participant 11: Maha is pressing

09:44 Participant 12: Press?

09:45 Participant 11: Mm-hmm. Is shining, sun is shining brightly.

09:51 Participant 12: *Wena* "shining"? {Where is "shining"?} [inaudible] *wein jay* {where is it?}

09:55 Participant 11: Add is, OK, is shining.

10:02 Participant 12: *Ba'ed, ba'ed feeh shi?* {there's more?}

10:05 Participant 11: Maha is, is observing.

10:09 Participant 12: *Hadi?* {this?}

10:10 Participant 11: Mm-hmm.

10:14 Participant 12: *Khalas?* {done?}

10:15 Participant 11: Mm-hmm.

10:17 Participant 12: Ok.

*Dictogloss*

00:04 Participant 19: Right now…

00:07 Participant 11: **Fahemteha enta?** {Did you understand it?} Right now

00:10 Participant 19: Right now, Ahmed is sitting on the airplane.

00:22 Participant 11: **Kif byeketbo** "sitting"? {How do you spell "sitting"?}

00:24 Participant 19: Sitting, SETTING.

00:27 Participant 11: E **wala** I? {E or I?}

00:28 Participant 19: E.

00:29 Participant 11: Ok.

00:30 Participant 19: Sitting. **Sah?** {Correct?} **Laen lama ykoun fi –ing lazem thott double T** {Because when there is –ing, you have to put a double T}.

00:38 Participant 19: On the airplane.

00:39 Participant 11: Sitting…

00:41 Participant 11: In? On?

00:41 Participant 19: On the airplane. [inaudible] On the airplane. Full stop. New sentence.

00:52 Participant 11: Plane. Ok.

00:53 Participant 19: The airplane is being flew…

01:04 Participant 11: Being flew…

01:07 Participant 19: By a pilot.

01:14 Participant 11: New sentence?

01:15 Participant 19: Full stop. New sentence. The plane will arrive, the plane… **la la la, mu "were"** {No, no, no, not "were"}. The plane was arrived.

01:26 Participant 11: **La'** will. {No, it will}.

01:27 Participant 19: Will arrive?

01:30 Participant 11: The plane will arrive…

01:32 Participant 19: The plane will arrive in London in four hours.

01:42 Participant 19: **arba' sa'at 'ashan tousal** {Four hours for it to arrive}.

01:43 Participant 11: London… in four hours?

01:46 Participant 19: In four hours.

01:49 Participant 11: Ok. Full stop.

01:53 Participant 19: Hamad…

01:54 Participant 11: Hamad…

01:55 Participant 19: Is looking…

02:00 Participant 11: Is looking…

02:01 Participant 19: Out of the window.

02:04 Both: Out of the window.

02:09 Participant 19: The clouds…

02:11 Participant 11: Full stop, huh?

02:12 Participant 19: Full stop, new sentence.

02:13 Both: The cloud

02:15 Participant 19: Looks beautiful. "Look" *enta kateb* "look" {You write "look"}.

02:19 Participant 11: *Eh* {Yes}.

02:21 Participant 19: Look beautiful.

02:23 Participant 11: "Looks" *walla* "look"? {"Looks" or "look"?}

02:26 Participant 19: Look beautiful.

02:27 Participant 11: *Shou ya'ne* "beautiful?" {What does "beautiful" mean?}

02:29 Participant 19: Beau…

02:30 Participant 11: *Enta sah kateb hina?* {Did you write it here correctly?}

02:32 Participant 19: *Ana kenet baktebha bas ana kan 'ala toul Hamad* {I would have written it, but I wrote Hamad right away}.

02:38 Participant 11: Beautiful.

02:40 Participant 19: Hamad is…

02:41 Participant 11: Full stop?

02:42 Participant 19: *Eh* {Yes}. Full stop.

02:43 Participant 11: Hamad is…

02:44 Participant 19: Hamad is being spoking…

02:49 Participant 11: Is being…

02:50 Participant 19: Spoken.

02:53 Participant 11: Being.

02:54 Participant 19: B-E

02:55 Participant 11: *Hatha fi el madi* {It's in the past}. Is being…

02:58 Participant 19: Is being spoking

03:02 Participant 11: "spoking" *walla* {or} "spoken"?

03:04 Participant 19: *Esh el me'na anahou kan yatakalm ma'* {Here it means that he was talking to…} airplane is being airguest…

03:09 Participant 11: Is being spoke…

03:11 Participant 19: **Esma sah?** "Air guest" **El moudifa**? {This is how it's called? "Air guest" is the airhostess?}

03:14 Participant 11: Airhost?

03:15 Participant 19: Air guest **el moudifa** {Air guest is the airhost}.

03:16 Participant 11: **Ma adri** {I don't know}, airhost **walla** {or} air guest?

03:18 Participant 19: Airhost **hiyi** airhost {It's airhost}. Hamad is being spoking…

03:23 Participant 11: Spoking…

03:25 Participant 19: To the airhost. Full stop. New sentence.

03:33 Participant 11: Then?

03:35 Participant 19: She is asking him.

03:38 Participant 11: She is asking him.

03:42 Participant 19: Him if he want…

03:49 Participant 11: If he wants…

03:50 Participant 19: If he…

03:51 Participant 11: **Eh** {Yes}, if he want, if he want …

03:52 Participant 19: **La bas kateb gher shi** {no but something else was written}. She asking him is you want. She asking him is you want. **Ya'ni … koloh** {It means… all of it}.

04:02 Participant 11: She asking him is?

04:04 Participant 19: Is you want, **ana kont kateb** {I have written} "if he want tea or coffee".

04:10 Participant 11: **Rah ektebha el zay?** {How should I write it?}.

04:11 Participant 19: **Khalas ktob el tnen, fi hal erja' saterha** {Write both, and in case go back and underline it}.

04:15 Participant 11: Is… **a'taked 'enna** "if" {I think we should use "if"}.

04:19 Participant 19: **Khalas hat** "if" {Alright, put "if'}. If he want…

04:23 Participant 11: Tea or coffee.

04:24 Participant 19: Tea or coffee.

04:30 Participant 11: Coffee. **Hay sah kateba ana?** {Did I write it correctly?}

04:32 Participant 19: **Nasit hon** "paper" {You forgot here "paper"}

04:34 Participant 11: A paper cup…

04:35 Participant 19: A paper… **eh** {yes} cup.

04:37 Participant 11: **Shno katabet hna?** {What did you write here?}

04:38 Participant 19: ***Kenet baktobha, lesh hayed el kelma ma dakhalet?*** {I was writing it, why wasn't this word inserted?} A paper cup is being… ***Esh hay?*** {What's this?}

04:53 Participant 11: Held.

04:54 Participant 19: Is being held by the airhostess.

05:01 Participant 11: **Tsk** {No}. By the air, by the air?

05:05 Participant 19: A paper cup is being held by the air hostess

05:16 Participant 11: ***Hina ghalat?*** {There's a mistake here?}

05:17 Participant 19: ***La, la, tamam*** {No, no, it's ok}

05:18 Participant 11: As

05:19 Participant 19: As she speaks. Right now… ***ha nsaleh?*** {We will correct?} ***inta tikraa ana saleh*** {You read, I'll correct}.

05:39 Participant 11: Right now, Ahmed…

05:41 Participant 19: Hamed.

05:42 Participant 11: Hamed, Ahmed. ***Byemshe*** {It's ok}. Ahmed is sitting ***aw*** {or} is seating. I. ***Da el*** {This is} E I. On an airplane.

06:00 Participant 19: On an…

06:03 Participant 11: The airplane is being flown. O, F L O. Flown by a pilot. Ok?

06:17 Participant 19: Ok.

06:19 Participant 11: The plane will arrive in London in four hours. Ahmed, Ahmed is looking out…

06:32 Participant 19: Ok.

06:33 Participant 11: Ok? Of the window. The clouds look beautiful. Ahmed is being, Ahmed is being spoken, ***eh*** {yes}, spoken to…

06:58 Participant 19: To…By the air hostess.

07:01 Participant 11: To by the air hostess.

07:07 Participant 11: [inaudible] H O S.

07:10 Participant 19: Ok.

07:11 Participant 11: T E S S. She is asking him if he wants, he wants tea or coffee. Double E. A paper cup is being held by the airhostess. Double S. E double S. As she speaks.

07:43 Participant 19: Ok.

**Discovery Learning**

*Part 1*

*Example Sentences*

Participants 11, 16, and 17

Sentence 1: The student is taking the exam.

Sentence 2: The exam is being taken by the student.

1a) In sentence 1, who is taking the exam? _Student's_

1b) In sentence 2, who is taking the exam? _Student_

1c) Is the meaning of the sentences different? Yes/(No)
If yes, then how? _____

Circle the correct word

2a) Sentence 1 is in the *past/present/future*. How do you know? _taking_

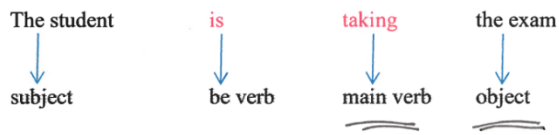2b) Sentence 2 is in the *past/present/future*. How do you know? _being_

Fill in the missing number

3a) How many words are in sentence 1? _5 six words._

3b) How many words are in sentence 2? _eight words._

3c) Which words are different? _talking and beingtaken by._

Circle the correct word

4a) Sentence 1 is in the (active)/passive voice.
How do you know? _active because is present~~because is present~~ present vab_

4b) Sentence 2 is in the active/(passive) voice.
How do you know? _passive voicebecause theyuse being and P.P. then by._

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The structure of sentence 1 is

| The student | is | taking | the exam |
|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ |
| subject | be verb | main verb | object |

Use the words in the box to make the structure of sentence 2

```
subject      ⌒
object       ⌒
being        ⌒
past participle ⌒
be verb      ⌒
by           ⌒
```

5a)

| The exam | is | being | taken | by | the student |
|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| subject | be verb | being | P.P. | by | object |

Complete the following sentence. Use the words in the box to help you.

```
being
past participle
be verb
```

5b)   The verb phrase of the present continuous passive is made using a _be verb_
followed by _PP being_ which is then followed by the _be verb_ of  *(P.P)*
the main verb.

*Part 2*

Please change the following sentences to the active voice

*Example*

| | *Passive:* | The game is being played by the girl |
| | *Active:* | The girl is playing the game. |

1a) *Passive:* The email is being deleted by the worker.
    *Active:* The worker is ~~p~~deleting the email.

1b) *Passive:* The student is being tested by the teacher.
    *Active:* The teacher is testing the students.

1c) *Passive:* The letters are being delivered by the worker.
    *Active:* The worker is delivering the letters.

Please change the following sentences to the passive voice

*Example*

| | *Active:* | The girl is playing the game. |
| | *Passive:* | The game is being played by the girl |

2a) *Active:* The scientist is researching the idea.
    *Passive:* The idea is being researched by the scientist.

2b) *Active:* The football player is scoring the goal.
    *Passive:* the ~~ig~~goal is being played by the football

2c) *Active:* The police officer is investigating the crimes.
    *Passive:* The crimes is being investigatied by the police officer.

Directions: Please read the following text. As you read, please underline and correct any mistakes that you find.

Hint – There are six mistakes. Three mistakes are in the active voice and three mistakes are in the passive voice.

*Task 1*
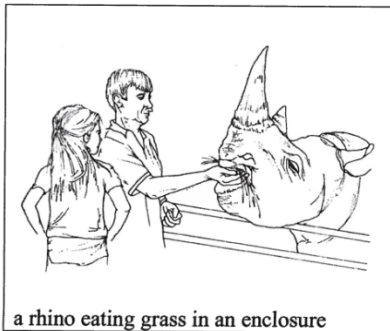


a rhino eating grass in an enclosure

Right now, Maha is at the zoo. The weather is very nice and the sun is shine brightly. Maha observing a zoo keeper feed two rhinos. The rhinos is being fed fresh grass by the zoo keeper. The grass is chewed by the rhinos. Maha watch by one rhino as it slowly chews the grass. Maha press her hands onto the glass of the enclosure.

*Participant 11's notes*

right now ahmad is setting in an air plane
& The air Plane is being flew by a Pilot
The Plane will arrive In london in four hours
hamad is looking out of the window.
The Clouds look beautiful hamad
is

She's asking him if he wants tea
or coffe
a Paper cup is by the air
as she speaks

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Right now Hamad is sitting on the air plane. The air Plane is being flewn by a Pilot. The Plane will arrive in London in four hours. Hamad is looking out of the window. The clouds look beautiful. Hamad is being spoken to by the air hostess. She's asking him if he wants tea or coffee. A Paper cup is being held by the air hostess as she speaks.