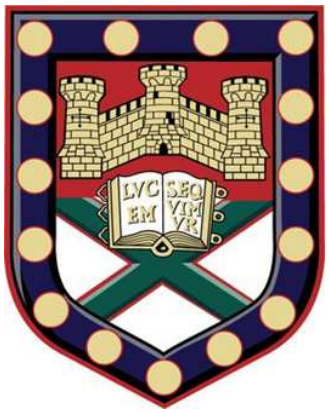
HEALTH AND WELL-BEING OF YOUNG DINGHY SAILORS



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Sport and Health Sciences

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

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Abstract

Dinghy sailing, although frequently researched at elite and developmental levels, lacked research focused on the foundation levels in children. This thesis employed qualitative and quantitative methods to investigate the impact of dinghy sailing on children during a taster session, a beginner sailing course and those who were participating regularly on a weekly basis. While individualising each study to focus upon specific aspects, mental and physical wellbeing were common themes across all three studies.

In Study 1, participants (n=66; boys n= 35 and girls n= 31) aged between 8-13 years (10.5 ±0.6 y) completed the Daily Reconstruction Method for Children (DRM-C) and Before and After Feeling and Thoughts (BAFT) questionnaire. Key findings consisted of a general increase in both happiness and enjoyment from pre-to post- taster session. Sex comparisons found boys utilised sport more to assist in mental wellbeing even though girls expressed greater changes in emotion during taster session.

In Study 2 children (n=52) aged 10.3 (±2.7) y attended a RYA Stage 1 (n= 43), and/or Stage 2 (n= 27) course and participated in the DRM-C and BAFT questionnaire, as well as wearing wrist worn accelerometers and heart rate monitors. Overall, results in the morning sessions showed a decrease in emotions compared to afternoon sessions. In particular, the first afternoon (session 2) of both stage 1 and 2 recorded significant increases in happiness for both boys and girls. Physically, participants accrued 44% of their moderate to vigorous physical activity (MVPA) recommended guideline during their stage 1 and/ or 2 course. Overall, increased levels of physical activity were found for boys compared to girls.

In Study 3, youth sailors (n=12) with a mean age 11 ± 1.54 y, who sailed regularly (at least once a week) were interviewed to investigate a range of topics related to their journey in participation of dinghy sailing. Findings reported multiple positive areas present from starting to sail to regular participation including environment exposure, improved mental wellbeing,

improved physical wellbeing, developed social skills, developed life skills, learnt sailing specific skills and assisted in school/ career ideas. The current study also found some negative areas including restraints in time and social factors, expenses, risk of injury/ hazards, and limitations in sailing performance to other areas of life. In relation to the recent document of Sport England for sports to establish evidence of benefits of sports participation, this study provides evidence to support the promotion of dinghy sailing for young people in physical wellbeing, mental wellbeing, individual and social development.

Keywords: Sport, physical activity, enjoyment, happiness, children, adolescents

Key Terms

Dinghy Sailing: The activity of sailing small sail boats with a single mast.

Exercise: Physical activity that is planned, structured and repetitive for the purpose of conditioning the body, consists of cardiovascular, strength, resistance and flexibility training,

Extrinsic Motivation: Behaviour that is driven by external rewards or incentives such as trophies, money or praise.

Health: A state of physical, mental and social well-being with the absence of disease or infirmity.

Intrinsic Motivation: Behaviour that is driven by internal rewards such as satisfactory from completing a task.

Moderate-to-Vigorous Physical Activity: Activity >3.0 METS, that will raise your heart rate, make you breathe faster and harder and feel warmer. Subjects may be able to talk or say no more than a few words.

Physical Activity: Any bodily movement completed by the skeletal muscles that require energy expenditure.

Participation: An act of taking part in an activity.

Recreation: Activity completed for enjoyment opposed to compulsory

Sport: An activity involving physical exertion and skill for an individual or team to compete against each other.

Acknowledgements

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Chapter 1

Introduction

There are more literature sources on competitive sailing compared to the health benefits sailing can provide for young people. Previous studies on sailing have focused on elite dinghy sailing (Cunningham and Hale, 2007; Bojsen-Møller *et al.,* 2015) or Tall Ship sailing (Allison *et al.,* 2007; White *et al.,* 2016), rather than the benefits of the green and blue environment (Shanahan *et al.,* 2016).

In addition, a plethora of studies exists on the benefits of generalised physical activity upon physical and mental wellbeing (Department of Health, Physical Activity, Health Improvement and Protection 2011; Biddle *et al.,* 2004). These studies have investigated competence and enjoyment in physical activity (Cairney *et al.,* 2012; Boreham and Riddoch, 2001), motivations for physical activity participation (Gavin *et al.,* 2014) and psychosocial changes to adolescents due to physical activity participation (Debate *et al.,* 2009).

The proposed project will focus on evaluating past research and expanding the literature from within the water sports industry, using existing sailing related studies, as well as collating new information, to support future the aims of Sport England. These aims are physical wellbeing, mental wellbeing, individual development, social wellbeing and economic development (Sport England, 2015; Sport England, 2016) in relation to increased sports participation. Previous researchers have suggested sailing as a way to promote increased participation as Spurway *et al.* (2007) states “there is surely no other sport [like sailing] that embodies such diversity” (p.1073), and therefore an inquiry into what sailing can truly offer, both physiologically and psychologically, to its participants is warranted.

Physical Activity for Children

It is widely acknowledged that the recommended health guidelines for children are a minimum of 60 minutes of moderate to high intensity activity every day, which should also include activities to improve flexibility and bone strength (Tremblay, 2016; Janssen and Leblanc, 2010). Furthermore, Biddle *et al*. (2004) addressed that a lack of physical activity participation results in an increased rate of obesity, displaying the association between physical activity and obesity. When an individual's physical activity rate decreases, there is a concomitant increase in body weight and vice versa (Pietiläinen *et al.,* 2008). Globally, 42 million children were classified as obese in 2013, and it has been suggested that by 2025 an increase to 70 million children is likely unless action is taken (World Health Organisation, 2016). Physical inactivity costs the UK an estimated £7.4 billion each year (Sport England, 2015). Many initiatives have now been formed in a bid to combat childhood obesity through awareness, knowledge and access to physical activity such as Change for Life (Change4Life, 2018).

Recently, the focus has not been solely on childhood obesity but is also now focusing more on the impact of children's mental wellbeing and the services to support the increasing number of reports of mental ill health among young people (Young Minds, 2018). In a GL Assessment report (2018) that investigated children's wellbeing and attitudes to self and schools, the data of 862,724 children aged 7-14 years in 2,285 schools was analysed. Results found that 1 in 20 children (5%) reported extremely poor attitudes to learning and possessed very low self-regard. Such findings place an emphasis on low mental wellbeing factors, such as the level of self-esteem present in populations of children. Therefore, a combination of inactive lifestyles and decreasing rates of mental wellbeing in children provides the need for an increase in opportunities for young people. These opportunities should aim to engage children in physical activity or sport as a means to increase movement and improve mental wellbeing.

The outcome of physical activity initiatives appears to have increased physical activity rates in both girls (+4%) and boys (+2%) from 2012-2015 (National Statistics, 2017). Although there have been slight increases in participation, further progress in improving physical activity rates is still required. Tremblay (2016) provides advice on lifestyle for children, which considers moderate to vigorous physical activity, light physical activity, sleep and sedentary behaviour (Figure 1.0). The correct balance of these four areas can contribute to children leading healthy lifestyles. In order to promote physical activity many initiatives encourage children to try new activities (Slujis et al, 2007), which is a potential role that sailing could fulfil Although the amount of physical activity contributed to daily physical activity guidelines during dinghy sailing for children is still unclear, it is reasonable to assume that physical demands, as well as mental effort is required. Most sailing studies have focused only on elite sailors in association with muscle thickness, strength and endurance (Cunningham and Hale, 2007; Bojsen-Møller *et al.,* 2015). However, to date, no study has explored the amount of physical activity or intensity (e.g., low, moderate or vigorous) that is completed when young people sail.

In order to change a young person's physical activity, interventions through schools, families and communities need to be implemented. Sailing could, again, foster these approaches, specifically, interventions 'with multi-level and environmental interventions holding greatest promise' (Biddle *et al.,* 2004: p.696). However, Solomon *et al.* (2014) critiqued physical activity community interventions, suggesting evidence that contradicts the effective use of interventions in physical activity. Boreham and Riddoch (2001) noted behavioural carry over, including communication including teamwork and suggesting that an active child is more likely to continue into adulthood being active (Boreham and Riddoch, 2001; Froberg and Anderson, 2005). The behavioural carry over theory underlines the need to target youth specifically to

encourage a healthy physical lifestyle that can then reduce the chances of adopting sedentary lifestyles in adulthood.

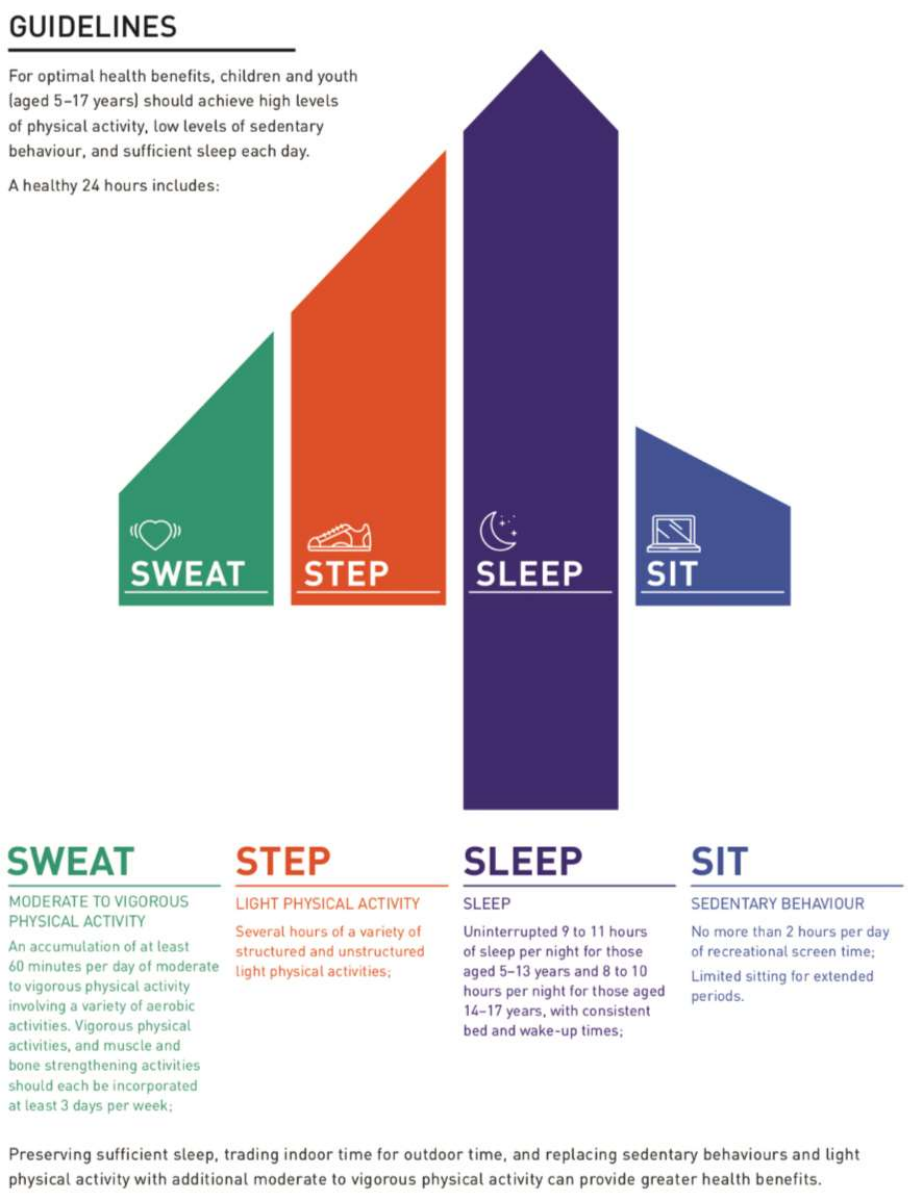


Figure 1.0 Diagram from Tremblay (2016) detailing their advised healthy 24 hours for children.

Benefits of Physical Activity for Children

Recently the benefits of physical activity for participants are being recorded as more than just physical e.g., greater bone density, reduced risks of cardiovascular and respiratory diseases, decreased likelihood of obesity, increased life expectancy, improved physical capabilities, they are also inclusive of psychological and social benefits (Boreham and Riddoch, 2001; Boyle, 2014; Blair and LaMonte 2005, Beets and Pitetti, 2005; Reiner *et al.,* 2013; Sothern *et al.,* 1999; Telford *et al.,* 2013; Debate *et al.,* 2009; Biddle *et al.,* 2004). Psychological benefits include, but are not limited to, improving self-worth and self-concept (Lui *et al.,* 2015), lower risk of depression (Kremer *et al*., 2014) and positive influence on academic achievement (Donnelly *et al.,* 2016). Perceived social benefit also includes continued motivation for exercise participation (Nielsen *et al.,* 2014).

In addition, benefits present in physical activity such as social skills and opportunities may also enhance the mental wellbeing benefits to prevent loneliness and boredom (Penedo and Dahn, 2005). Finally, sport and physical activity participation were found to develop an individual's skills and experience, as well as providing opportunities to expand mastery of life skills. These skills consist of communication, teamwork, leadership, problem-solving and respect (Thompson Coon *et al.,* 2011; Paluska and Schwenk, 2000; Scully *et al.,* 1998), all of which are relevant to dinghy sailing.

Promotors and Barriers of Physical Activity

Green (2005) identified three areas around optimizing sporting programmes: recruitment, retention and reducing barriers. Recruitment of participants in any sport, is the foremost important part as it is the commencement of interaction between activity and participant. According to Green, the recruitment stage often involves influence from significant others

which, in the case of children, is a crucial element. The role of significant others is often family members or friends. In collaboration with significant others, opportunities to engage in local-foundation level activities is important for entrance into the sport and continues into retention.

The retention of participants in the sport is reliant on three main factors: motivation, socialisation and commitment (Green 2005). Motivation may require non-autonomous sessions prevent boredom and maintain interest and excitement for participation. The sessions should be challenging but achievable in order for motivation to continually increase or stabilise at an optimal level. Socialisation may involve encouraging children to become interactive with pre-existing friends particularly for novice participants as this can lower nervousness and offers familiarity in new environments. As the participant engages with the sport, they may also find new friendships and relationships forming with individuals of common interests. Finally, commitment from both the participant and the instructor is needed to determine participation frequency and duration.

As with any new activity the participation frequency and duration that one may uptake can differ greatly. Temporal participation may result in a lack of perceived benefits due to the minimal exposure to the type and intensity of exercise, physical activity or sport. (Malm, et al. 2019). Although participating in activities sporadically can offer an insight into the sport, the key for physiological or mental adaptions such as improved cardiovascular fitness and increased self-confidence will require longitudinal commitment (Wankel and Berger, 2018). The frequency and duration of participation can also be influenced by a number of factors which is more evidence as to why participation varies from one person to another.

Fuemmeler and colleagues (2011) found that primary school children's physical activity was positively correlated to parent's physical activity. Furthermore, if both parents displayed high levels of MVPA, their children showed increased levels of MVPA. However, the correlation was lower for secondary school aged children, which supports the drop-off/drop-out age notion (Sallis, 2000). Parents may also have an influence on what type of physical activity or sport their children are involved in (Gustafson and Rhodes, 2006). In contrast, parents or family may pose as a barrier to physical activity participation due to work restrictions and the need for transport to and from the location.

Where and when barriers are most apparent and influential upon participants and can be valuable information to decrease its impact (Biddle, et al 2005). For example, if a barrier to attending a sailing session was the timing of the session, which was too close to the finishing time of school, some may not be able to make it. Therefore, acting on this information to push the timing half an hour later could result in higher participation rates and reduce time barriers to attending. In conjunction, Mind, a mental health charity, has found that those with low confidence, low self-esteem and body consciousness presented significant barriers towards physical activity especially for those with mental health problems. In addition, women were found to be hindered by these barriers more so than men (Sport England, 2015). Meanwhile, Sporting Future (Sport England, 2015) reported that the employer has a large impact on the ability to build physical activity around the working lifestyle. Supporting this active lifestyle could involve facilitating an on-site gym, showers or bicycle storage to encourage the desired active behaviour by limiting the barriers of accessibility for employees. Other aspects of a working environment could involve organising a charity event such as Bart's Bash, a global sailing event, Tough Mudder or Colour Run. This can not only improve the activeness of individual's lifestyle but can serve as a team bonding exercise and improve morale in the

working environment. These actions may then lead to less absenteeism and a reduction in sickness pay days, which is currently estimated at 137.3 million working days in the UK in 2016 (Office for National Statistics, 2017).

Once finding an equilibrium in promotors and barriers in sports participation, to ensure retention focus can be retargeted onto the broader spectrum of overall wellbeing and development in sport.

Sport England Strategy

The Sport England Strategy has recently been adapted with new objectives in the 2016 report to 'redefine what success looks like in sport' (Sport England, 2015, Page 10). Previously the aims of Sport England had been orientated around participation rates and aspiring for medals within sporting competitions such as the Olympics and Paralympics. The new outcomes are now concentrated on five key areas:

1. Physical Wellbeing
2. Mental Wellbeing
3. Individual Development
4. Social and Community Development
5. Economic Development

Physical Wellbeing

Findings such as greater bone density, reduced risks of cardiovascular and respiratory diseases, less likelihood of obesity, increased life expectancy, improved physical capabilities and improved psychological capacity due to participation in physical activity have been identified (Boreham and Riddoch, 2001; Boyle, 2014; Blair and LaMonte 2005, Beets and Pitetti, 2005, Reiner *et al.,* 2013; Sothern *et al.,* 1999; Telford *et al.,* 2013; Debate *et al.,* 2009; Biddle *et al.,*

2004). One of the main discrepancies is whether sailing meets the same demands as generalised sport as it clearly is not similar in its visible movement compared to football per se. Although, Bojsen-Møller *et al*. (2007) found that sailing amounts to high endurance levels and does utilise the aerobic energy system, no research to date has directly compared a sailor to another athlete from a different discipline, and only suggestive statements have been found such as sailors possessing a greater core strength however possibly lower aerobic capacities.

Mental Wellbeing

Mental wellbeing frequently appears in the news spotlight, with cases of mental illnesses rising in association with the decreasing age of patients. Physical activity, exercise and sport are undeniably activities that many use as stress and anxiety relief and has been found to improve confidence and self-esteem in many population groups (Allender *et al.,* 2006; Feltz, 2007; Eime *et al.,* 2013). The depth of research produced to date, in conjunction with the volume and significance of studies to be reported in the near future, are expected to contribute to policy change, as specified mental health becomes a strong indicator for generalised wellbeing. Several published reports endorse positive, but not significant relationships between physical activity and cognitive outcomes, with aerobic exercise showing as the most beneficial association (Fedewa and Ahn, 2011; Sibley and Etiner, 2003).

Mutz and Muller (2016) conducted a study to assess the mental wellbeing benefits from outdoor adventure. In Study 1, participants from a German Upper School engaged in the research through a 'Challenge project' and presented an increase in life satisfaction and mindfulness. In Study 2, participants, who were enrolled onto a BA Sports course at University, scored higher in life satisfaction, happiness, mindfulness and self-efficacy, and lower in perceived stress after the outdoor challenge compared to the control cohort. It was later

proposed in this study that the results could have had a greater significant impact on an audience from a less privileged background and stated for future research to consider this population group.

A more relevant sail training study had participants have attend a 7-10-day voyage which improved general wellbeing, mental wellbeing or rehabilitation. Allison *et al.,* (2010) noted that social dimensions were improved such as making new friends, working as a team and expressing an understanding of other people's point of view. No related studies have been performed on different vessels other than tall ships and there is a lack of investigation into the use of dinghy sailing that has led to a gap in research.

Social and Community Development

Individuals who participate in sport or physical activity often maintain attendance due to social aspects. Such settings provide social opportunities that can develop into a feeling of 'society' were aspects frequently mentioned in the report by Cotterill and Brown (2018). Many sailing environments such as clubs, centres and sessions are orientated around participants who were naturally encouraged to meet new friends and people with similar personalities and interests. Evans (2015) defined the role of friends as:

> 'Friends provide support and companionship during bad times and can prevent loneliness. Friends can also increase a sense of belonging and purpose and may improve self-confidence and self-worth.' (Page 8)

Therefore, involving friends in a surrounding that could be perceived as risk taking, could result in decreased nervousness and increased confidence.

Likewise with sport identity, whereby an individual may identify themselves with the sport (Rees *et al.,* 2015) and adopt norm behaviour (Bruner *et al.,* 2016), many sailors also adopt

such identities. Rees (2007) also suggests that social support is an important factor for social identity. Rees argued that the conditions, which are influenced by different types of social support, may impact on the outcomes. Even more so, sailors may also further classify themselves as particular types of sailors (e.g., yachtsman, dinghy etc.) or may classify further to identify as a specific class such as '49er' - a specialised double-handed performance dinghy - or 'optimist sailor' – a youth performance pathway dinghy often referred to as a 'bathtub'.

Self-Development

Studies have shown a wide range of benefits sport can have on self-development, including educational and attainment behaviours. Donnelly and colleagues (2016) articulated that physical activity itself may not be improving educational results, but the adaption to English and other core subjects to encourage interaction and proactive lessons behold a greater benefit to grades. Additionally, Sharma-Brymer and Bland (2016) found positive impacts in pupils whose traditional compulsory lessons were encouraged to be conducted in the outdoors or natural environment. This can be as simple as counting lessons using pebbles in the playground. To summarise, incorporating more active measures into what are usually sedentary tasks can result in a new form of active learning. There are also suggestions that sport can have particular benefits for those who are not in employment education or training (NEETS) such as providing experience in profession or gaining transferable key skills as reported in a recent study (Sport England, 2015).

Economic Development

The economic value of sport in previous strategies has been evaluated separately to the benefits sports can deliver. However, within the new Sport England Strategy a collaborative approach will be administered. The role of sport has provided 400,000 full-time or equivalent jobs in the

UK, which is 2.3% of all jobs (Sport England, 2010). Sport also offers diverse roles from the experiences and opportunities it can offer. Many people who associate themselves with sport can do so in ways more than simply participating. Volunteering is a growing trend, especially in the sporting realm. For example, hosting the London 2012 Olympics provided a large population of the UK to become directly and indirectly involved with various types of sport. The implementation of Game makers and the sheer size and logistics of such a large and established sporting event meant that many people could and did get involved – resulting in an economic value of £2.7bn for volunteering in 2011-2012 (Sport England, 2013).

Funding

The distribution of Sport England funding will now include a justification of which of the 5 key areas an organisation is contributing to. The greater input and evidence the organisation can provide, the greater the chance of receiving the funding being applied for, along with the ability to engage participants from all sections of society. There is particular focus on women and girls, disabled people, older populations, and those with a lower economic status, as these populations have been found to possess lower participation rates (Sport England, 2015). Therefore, by increasing their inclusivity, sport would be able to provide the benefits it encompasses in the five highlighted key points above to a greater proportion of the population.

Other Sports

The revised strategy has focused on getting inactive people physically active by a variety of means, not necessarily into mainstream and traditional sports. Greater consideration is now being taken for initiatives involving dance, walking, and cycling to increase engagement (Sport England, 2015, p.27). A notable example of these populations being targeted is the 'This Girl Can' campaign, which has already helped contribute to an increase of 250,000 women aged 14

to 40 years whose behaviour and attitude towards physical activity have altered to result in them living more active lifestyles (Sport England, 2016a).

Swimming was highlighted as an important skill for children to accomplish. The new strategy outlines a commitment to ensure that every child leaves primary school able to swim 25 m (Sport England, 2015, page 33). Although swimming a distance is not the only measurement of confidence and competence in the water, currently 45% of 7–11-year-olds cannot swim the stated distance (Amateur Swimming Association, 2014). Swimming and water confidence may have an impact on the experience a child has during a sailing session, given the natural green or blue environment the sport takes place in, as the absence of confidence can portray a less positive opportunity compared to those who are more confident in their environment.

Green and Blue Environment

There has been a recent growth in research conducted around the benefits of certain environments that can impact upon individuals. Two types of environments have been titled as 'green space' and 'blue space'. Definitions of both spaces vary between users, but for the purpose of this study, green space will be defined as areas that can be both natural and man-made, usually consisting of green plantation such as grass, trees and foliage. Common examples of green spaces are woods, forests, fields, parks (within grass environments) and paths through non-urbanised areas. The 'green space' is an outdoor environment where the participant attends for physical activities or sporting sessions, social contacts and relaxation (van den Berg *et al*., 2015). Studies have investigated the association between the 'green space' and mental wellbeing and vitality (van den Berg *et al.,* 2016), as well as physical activity and accessibility (Ekkel and de Vries, 2017).

The outdoor environment need not be exclusively limited to sports. Shanahan *et al.* (2016) explored the associations between duration, frequency and intensity of exposure to the natural environment and health. Results found that those who made long visits to the green environment had lower rates of depression and high blood pressure. In addition, those who visited more frequently had greater social cohesion, with a positive relationship reported between physical activity and both duration and frequency of green space visits. As stated in Shanahan and colleagues (2016) research, they advocated that visits to the green spaces of 30 minutes or more during the week-long course could reduce depression and high blood pressure by 5 and 9% respectively. The Sporting Future document (Sport England, 2015) highlighted a re-enforced drive to promote walking, dancing and cycling, two of which can be easily completed in the green environment. These can all also be a means of collating minutes towards the total daily physical activity guidelines.

Research has addressed the benefits for children to experience outside classroom learning (Sharma-Brymer and Bland, 2016), specifically green environment opportunities, which have shown to aid in physical activity engagement but also mental wellbeing improvements (Thompson Coon *et al.,* 2011). Therefore, proponents of blue environment research are pressing for future studies to focus upon the potential benefits for children and young people.

The blue space, for this study is defined as natural, and sometimes man-made, environments consisting of visible surface water (spring or salt) features (Gascon *et al.,* 2015). This can include environments such as coastal sites, lakes, reservoirs, and rivers (Nutsford *et al.,* 2016). More refined information is needed to identify if the green and blue environment offer the benefits of physical activity separately or synergistically. However, suggestions have been made that both green and blue spaces provide therapeutic escapes for many individuals,

particularly amongst the elderly (Finlay *et al.,* 2015). These spaces can be utilised as preventative to many illnesses or diseases including mental illnesses such as dementia, although no significant evidence has been found due to only qualitative data being collated. Currently there is a research gap focusing upon the benefits to young people and future findings will add original data to investigate the effect of the environment for youth and sport.

Sailing is a sport that requires specific environments to deliver the activity, such as safe waters and adequate weather conditions. As a consequence, the access to and opportunities to participate in the sport are arguably lower than others sports like football. In turn, conditions of the sea and weather can also have an influence on the participants' perception and ability to participate and also affect their retention within the sport. Undoubtedly, the more positive the experience, the more likelihood of returning.

The most relevant research to date are studies concerning voyages, whereby participants have engaged for recovery or personal development. White *et al.* (2016) conducted a study which interviewed 12 voyagers with ages ranging from 26 to 61 years. All of whom were recovering from drug and alcohol addiction. The interviews were pre- and post-voyage. Results found that the experience promoted self-insight, new life plans and social skill development. The conditions initiated teamwork, bonding and care between the voyagers who were unknown to one another before the voyage. The experience also found development of new competencies and an increased self-confidence. Although it is hard to determine the true cause of these developments a voyage surrounds the individual in the blue environment, whilst being constricted to the ship. Allison *et al.* (2007) completed a similar study but with a youth population aged ~14-21 years old. Results were similar, concluding that the main benefits involve increased confidence, improved teamwork and new technical skill development.

Again, to determine precisely what causes these changes is difficult to conclusively determine, nevertheless, it is clear that these experiences provide benefits to a wide age-range of participants.

The Sport of Dinghy Sailing

Participation in water sports varies across a range of activities and environments. In 2017, an adult population of 49, 051 were surveyed to provide an idea of the participation in water sports (Arkenford, 2017). Overall participation, including all types of water sports activities ranging from cliff climbing, surfing, power boating and recreational sea fishing, showed 25.2% of the population engaged in such activities. When refined to focus upon boating activities exclusively, only 6.5% of the adult population participated. In terms of youth participation, there is no data yet to support participation rates. Therefore, although this data cannot give direct details on the current age category of 8-12 years for the studies used in this thesis, the data that has been sourced is the most up to date.

Dinghy sailing is one of many water sports activities. As shown in Table 4.2 dinghy sailing would be related to a 'small sailboat'. Small boat racing shows a participation rate of 0.4%, while small sailboat activities presents 0.9% participation. This results in small sailboat racing accumulating just under half the amount of small boat activities. The nature of the remaining 0.5% of small boat sailing participation is unknown and suggests that there is at least one alternative motive behind small sailboat utility. In contrast, canoeing has greatest percentage of participation within boating activities. This sport has recently seen a 42% increase in participation over the last ten years with no clear indication as to why. It could be suggested that canoeing facilities have improved greatly with constructions of canoe slaloms and rapids

making it more accessible for participants. In addition, like with many sports, the hosting of 2012 Olympics could have increased interest in the sport.

Table 1.0 Water sport participation sourced from Water Sports Survey (Arkenford, 2017) reproduced with permission.

	%	000s
Any watersports activity	30.6%	16,318
Any boating activity	7.4%	3,955
Small sailboat racing	0.4%	205
Small sailboat activities	0.9%	499
Yacht racing	0.3%	155
Yacht cruising	0.8%	445
Power boating	0.7%	364
Motor boating	1.3%	681
Canal boating	0.7%	352
Canoeing	3.5%	1,856
Rowing	0.8%	404
Windsurfing	0.3%	185
Water skiing	0.5%	289
Using personal watercraft	0.4%	230
Surf/Body/Paddle Boarding	2.8%	1,501
Surfboarding	1.2%	651
Bodyboarding	1.3%	681
Paddleboarding	1.1%	576
Kitesurfing	0.1%	74
Angling (Any)	2.4%	1,259
Freshwater angling	1.1%	560
Sea angling	1.7%	902
Sea angling from a kayak	0.3%	134
Sea angling from a rental boat	0.6%	302
Sea angling from a charter boat	0.4%	200
Sea angling from the shore	1.1%	561
Recreational sea fishing	0.5%	242
Cliff climbing	1.1%	565
Coastal walking	14.3%	7,608
Leisure time beach	16.9%	8,991
Outdoor swimming	10.4%	5,557
Leisure subaqua diving	0.8%	412
Coasteering	0.4%	210
Adult Population (000's)	53,258	53,258
Sample size	12,730	12,730

When analysing only sail-based craft (small sailboat racing, small sailboat activities, yacht racing, yacht cruising, and windsurfing), small sailboat activities consist of the greatest participation rates. In contrast, yacht racing and windsurfing consist of the lowest participation rates (0.3%). The cause of this is unknown, however it could be due to access to yachts for racing. For windsurfing it could be argued that a different skill set is required. The sport can harness greater speeds and thus induce greater thrill, but also an increased sense of risk taking.

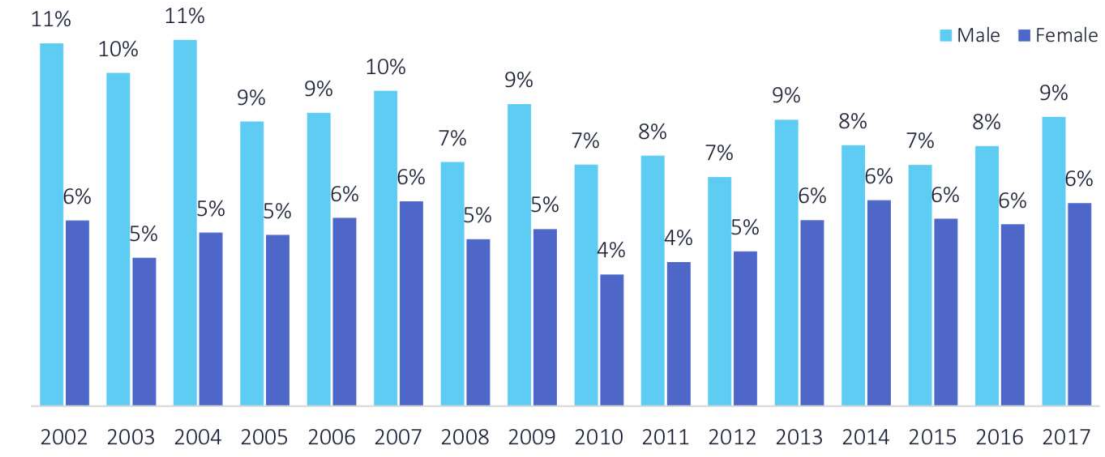


Figure 1.1 Gender participation in any boating activity from the water sports survey (Arkenford, 2017), reproduced with permission.

In accordance with many other sports, males have consistently had greater rates of participation than females (Rowlands *et al.,* 2008; Costa *et al.,* 2017). It is positive to review that as of 2010 female participation has either remained consistent or increased. The year 2002 showed greatest rates of participation for both males (11%) and females (6%). In contrast, in 2010 the participation from both males (7%) and females (4%) at its lowest. There is no rationale for these fluctuations, however it is positive to report a gradual increase in participation rates in the most recent years.

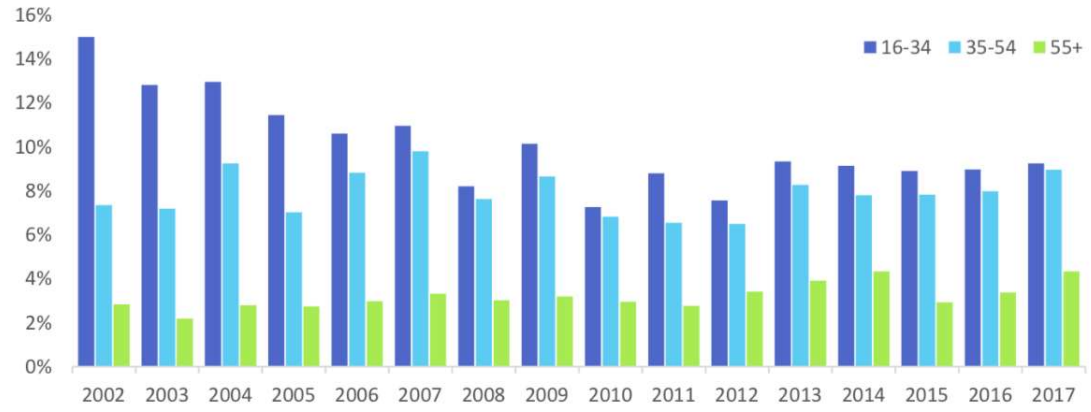


Figure 1.2 Age participation in any boating activity from the water sports survey (Arkenford, 2017), reproduced with permission.

Over the last 15 years the data shows that the 16-34 years category is the greatest age population participating in boating activities. Previously between 2002 and 2012, the 16–34-year-old age group displayed the most fluctuation of any age group, however in the last 4 years the rates have stayed relatively consistent. Additionally, the 55+ age category has increased, with 2014 and 2017 clearly resulting in greater participation. However, without further details the cause for this change is unknown.

A common barrier to sports participation is the location of participation. The most popular regions in the UK for participation are the Southeast (20%) and the Southwest (18%). In comparison the least popular regions are Northern Ireland (3%) and the West Midlands (3%). The wealth of each region should be considered within participation rates as the Southeast, London and Southwest are some of the most affluent regions in the UK (Barclays Wealth, 2011). Therefore, with sailing's stereotypical middle-class participation, people from the southern regions are more likely to participate than those from northern regions. The difference in average air and water temperature could also be a factor in participation as the south of the country generally hosts a warmer climate.

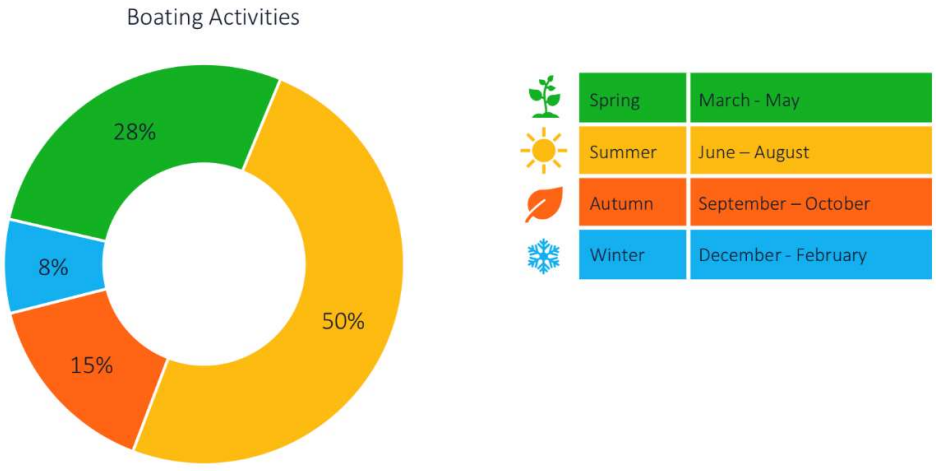


Figure 1.3 Percentage of boating activities completed during the different seasons sourced from the water sports survey (Arkenford, 2017), reproduced with permission.

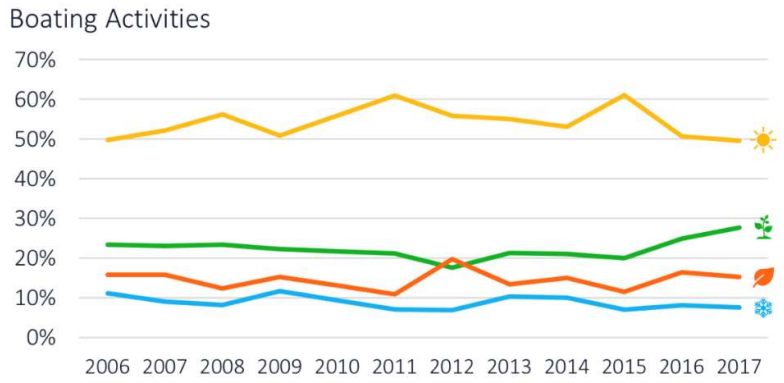


Figure 1.4 Participation rates in boating activities across the seasons from 2006 -2017 sourced from the water sports survey (Arkenford, 2017), reproduced with permission.

Sailing is a seasonal sport and is mostly completed during the warmer months of the year. This is clear with boating activities showing 50% of participation during summer (June to August). There was a spike in participation during autumn 2012. This would suggest a possible influence from the Olympics during summer 2012 that inspired people to try out the sport.

Figure 1.5 Source of vessel for boating activities sourced from the water sports survey. (Arkenford, 2017), reproduced with permission.

How people source their boat can be an indication of their motives in participation. Small sailboat racing and yacht racing shows the greatest responses in personal ownership of the

vessel. This may be justified as they are both racing domains and the vessels must meet specific requirements. In addition, the sailor may wish to 'get to know' their vessel and therefore ownership is the best option for potential racing success. Rowing/ Sculling and canoeing showed the greatest responses for participants to use club, training or corporate owned vessels.

The overall most popular option was using family or friends' vessels. In water sports and dinghy sailing, family and friends support, or facilitation can be a key entrance into the sport. The companionship eliminates the costs relating to ownership or using a club, while the individual experiences support and learns with those they have a pre-existing relationship.

Dinghy Sailing and Young People

The most related piece of research related to dinghy sailing and young people was a pilot study conducted by researchers at the University of Winchester (Cotterill and Brown, 2018). The aim of the study was to explore the perceived benefits of regular dinghy sailing for young people aged 9-13 years. The sample consisted of multiple groups linked the facilitation of sailing sessions; young people (n= 11), teachers (n= 5), instructors (n= 5), parents (n= 8) and sailing organisation representatives (n= 9). The study completed 1:1 interview with participants (n=38) to highlight common themes. The results were summarised in five key areas of benefits: enhancing personal feelings of confidence and competence, developing key personal and interpersonal skills (e.g., problem solving), resilience and leadership, development of sailing specific skills, enhancing (or maintains) physical fitness, and enhancing (or maintaining) good general mental health.

To the best of the author's knowledge, this study is the only study that was completed in exploring the benefits of dinghy sailing for young people. The use of qualitative methods

enabled the researchers to gain perceptions of the participants, however no studies to date have confirmed nor expanded these initial findings. Considerations for future research should incorporate quantitative methods in conjunction with further investigations. In addition, the sample study of n=38 makes generalisation to the wider population difficult, therefore a larger sample size would be advantageous. In this study, the report concluded with four recommendations for future research. These were as follows:

1. Dinghy sailing as a way to enhance general mental health and well-being.
2. Dinghy sailing as a way to enhance fitness and general physical health.
3. Dinghy sailing as a way to develop key life skills.
4. Dinghy sailing and its effect on Behaviour change.

Purpose of the Thesis

The proposed research will investigate how much of the activity during sailing can be classified and how physical activity can contribute to the recommended guidelines for children stated previously. This will not only yield a greater insight into what comprises the sport of sailing in from a physiological approach but will offer valid data to support health and wellbeing claims in dinghy sailing for young people when promoting the sport to people who have not yet experienced it.

In consideration of the findings of the pilot study by Cotterill and Brown (2018), it is proposed that this study will provide data to assess the objectives of Sport England. Due to the time restriction for the proposed study, some factors such as developing key life skills and verifying behaviour change will not be addressed. As a result, mental health and wellbeing and physical activity in sailing will be the primary foci.

The existing literature within dinghy sailing focuses upon elite performance and therefore there is sparse research on the benefits that sailing may provide for novice participants. In addition, the most common study design within the literature either focuses upon longitudinal voyages and the impact of the experience or analysing and assessing the long-term participation in high performance sailing. As a consequence, there is a gap for research using novice youth sailors focusing upon the acute impact of sailing participation.

Furthermore, the existing research has been based upon mostly physiological components for elite sailors or rehabilitation opportunities. This study will be the first to combine physiological and psychological measurements within the research design. Therefore, the current research will be divided into three studies. The overarching aims of the study are to provide an insight into the benefits of dinghy sailing for young people who participate in a single taster session, a beginner 1-, 2-, or 5-day course and longer-term participation in children aged 8-13 years.

Research Questions

The overall aim of the study is to determine the physical and mental benefits of sailing for young people. While each study will explore a different primary aim, all secondary aims will investigate how these factors align to the new objectives of Sport England document.

Aim of Study 1:

Primary Aim: To assess the pre- and post- thoughts and feelings towards a sailing taster session.

Aim of Study 2a:

Primary Aim: To assess the pre- and post-thoughts and feelings towards a beginner dinghy sailing course.

Aims of Study 2b:

Primary Aims: To measure the level of physical activity intensity during a 5-day youth sailing course.

To assess the mental wellbeing of participants on a day-to-day basis during a 5-day youth sailing course.

Aims of Study 3:

Primary Aims: To identify the promoters and barriers of retention amongst regular youth dinghy sailors.

To explore a relationship between entrance pathway into sailing and present- and/or long- term ambition in sailing.

Chapter 2 - Study 1

Introduction

The sparse amount of dinghy sailing research targeting children who are established in regular participation or racing provides the research gap for exploration into the participation of children and the sport of sailing. As shown from the review of the literature, there are a wide variety of benefits in sports participation for young people, however, the contribution of sailing to the overall well-being of youngsters is unknown. The aim of this study is to address several research questions regarding perception, impact and environmental influences, so as to ascertain the first wellbeing research in dinghy sailing for children. Specifically, the following questions will be addressed:

Research Questions

1a. Is there a difference in feelings and thought perceptions towards sailing and other daily activities?

1b. Is there a difference in feelings and thought perceptions towards sailing and other daily activities between boys and girls?

2a. Is there a difference in happiness and enjoyment pre- and post- a sailing taster session?

2b. Is there a difference in happiness and enjoyment pre- and post- sailing taster sessions between boys and girls?

3. What is the association between happiness and enjoyment and the environment when completing a sailing taster session?

Methodology

Participants

Participants (n=66) were aged between 8-13 years (10.5 ±0.6 y), with a total of boys (n= 35) and girls (n= 31). The sample size was determined using convenience, purposive sampling and sourced from one sailing centre on the southwest coast, who operate in coastal waters. In order to be accepted onto the study the participants had to be attending a 'Sail for £5' programme, which was later rebranded during the season to 'Discover Sailing Session'. These sessions are introductory and half day sessions, which allow school children to experience sailing at a minimal cost of £5 per child. The aims of the session were to introduce dinghy sailing to young people and to facilitate a pathway for them to continue within the sport.

Procedures

This study had ethical approval from the University of Exeter Institutional Ethics Committee. Anonymity of participants' data was taken into account and therefore, all participants were represented by an individual code number. Parental consent (Appendix I) and participant assent (Appendix II) was gained prior to the research commencing.

Environmental conditions were recorded from Wind Guru (WindGuru, 2018), an online location-based weather report, the morning of each session. The site was able to provide wind speed, wind direction, and temperature (ºC).

Working in conjunction with the sailing centre, the parental consent forms and information sheets were sent and returned via local school contacts. Those attendees to the centre accompanied with parental consent were then randomly selected to participate. At this time, the research was further explained to the participants, to ensure they had all received the information. If the participant agreed, the participant assent was completed including a verbal description of the study and the regulations. Emphasis was placed on voluntary participation

and the ability to stop taking part at any time without the need for any justification to reassure the participants.

The selected participants were given a briefing on how to answer the questionnaire on the iPad by the researcher and several opportunities to ask any questions they may have had. As shown in the schematic (Figure 2.0), participants began with the Day Reconstruction Method for Children (DRM-C) (Jenkins *et al.,* 2015), followed by the pre-session Before and After Feelings and Thoughts (BAFT) (Jenkins *et al*., 2015), and then returned to the main group to get changed into the sailing clothing and equipment. They continued the usual 'Discover Sailing Session' as normal which consists of an introduction into learning how to control, steer and co-sail a dinghy. The land drills provide an opportunity for participants to experience the controls while the instructor can manually manipulate the dinghy as a simulation. The water-based sessions consist of repeating skills in a follow my leader fashion or around a course. The post-session BAFT procedure was implemented when participants had landed ashore, and for the majority, before getting changed back into everyday clothes. In addition, any specific conditions during the session such as wind strength, temperature or the type of vessels used was recorded during testing. This procedure was to account for external variables, which might influence the primary outcome variables, while providing greater detail into the environmental conditions that could affect feelings and thoughts during the session.

Figure 2.0 Schematic of Sailing Taster Session with Questionnaire Administration

Measures

The Day Reconstruction Method for Children (DRM-C) (Jenkins *et al.,* 2015) was used to assess participants' thoughts and feelings towards specific activities. Presented using Qualtrics software (Qualtrics ^{XM} Platform, Oregon, USA) on an iPad, participants were shown how to answer the questions and scales (0-10), as described in the procedures section. The origin of the DRM-C stems from the Day Reconstruction Method (DRM), (Kahneman *et al.,* 2004; White and Dolan, 2009). In Jenkins and colleagues' study, the method was adapted and used with children to form the DRM-C. In this particular study the method was used to analyse activities during a sports club set up. The DRM and DRM-C methods have advantages over other possible protocols as they rely on recalling past experiences rather than interrupting a current activity the participants are engaged with, such as the Experience Sampling Method (ESM). The DRM-C protocol was chosen to ensure that the participants attend the sailing discover session with minimal interruption from research requirements, particularly the water-based part of the sailing session.

For this study the DRM-C begins with a home page (see Figure 2.1). This page has the outline of the task and the first question of clarifying age. The page follows onto an activities page displaying 12 common activities, including: eating breakfast, going to school; being at school; eating dinner; doing homework; watching television; playing video games; spending time at the beach; spending time outside; spending time with family; spending time with friends; and sailing. The participants were asked that if they had been sailing before, that they select that activity prior to any other selection. Due to the restrictions in the set-up of the programme, participants were advised to select activities working their way down the list. When selecting each activity, one at a time, the participant was asked to fill out scales (0-10). Measured from 'Not at all (0)' to 'A lot (10)' participants were asked to rate the scale in accordance with which

number best related to them. For each activity selected, there were three feeling scales (Figure 2.2) and 3 three thought scales (Figure 2.3) about the last time they completed the selected activity. The feelings scale consists of sad to happy, relaxed to nervous, and bored to excited. The thought scales had statements; 'I'm good at this activity', 'I'm enjoying this activity' and 'I'm glad I did this activity'.

The process to complete the questionnaire was as follows;

1. Each participant was asked to look at the list of activities and select one at a time.

2. After selecting one activity, the participant was asked three questions about how they feel towards the activity and three questions about how they think towards the activity.

3. The programme would return to the 'homepage' for the participant to select another activity.

4. Participants would repeat this until they had selected up to five activities.

5. Once up to five activities had been completed the participant selected 'finished' which terminated the DRMC questionnaire.

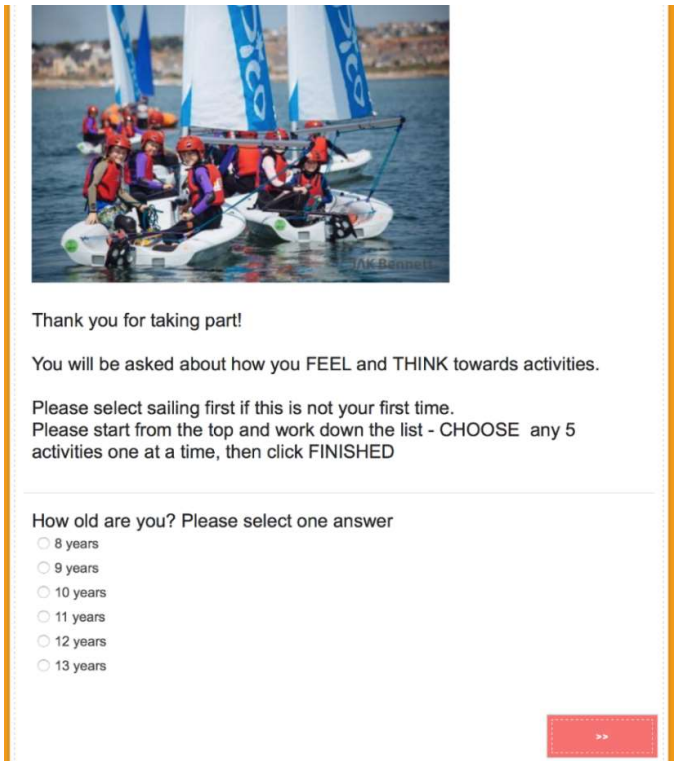


Figure 2.1 Home page slide from DRM-C protocol

The Before and After Feelings and Thoughts (BAFT) (Jenkins *et al*., 2015), was used to measure the pre- and post-perceptions of the session by the participants. The BAFT extracts two items from each scale of the DRM-C. In this case, the happy-sad feeling, and the 'I'm enjoying this activity' thought statement was converted and posed as questions, for example, 'how much do you think you will enjoy this activity?' and 'how much have you enjoyed this activity?'. The BAFT scale of 0-10 was presented in a similar format to the DRM-C to remain consistent throughout both questionnaires (See Figure 2.2 and 2.3). In addition, three extra questions were posed with open text boxes or multiple choice for answers (Figure 2.3).

1. What was your favourite part?
2. What was your worst part?
3. Would you like to go sailing again?

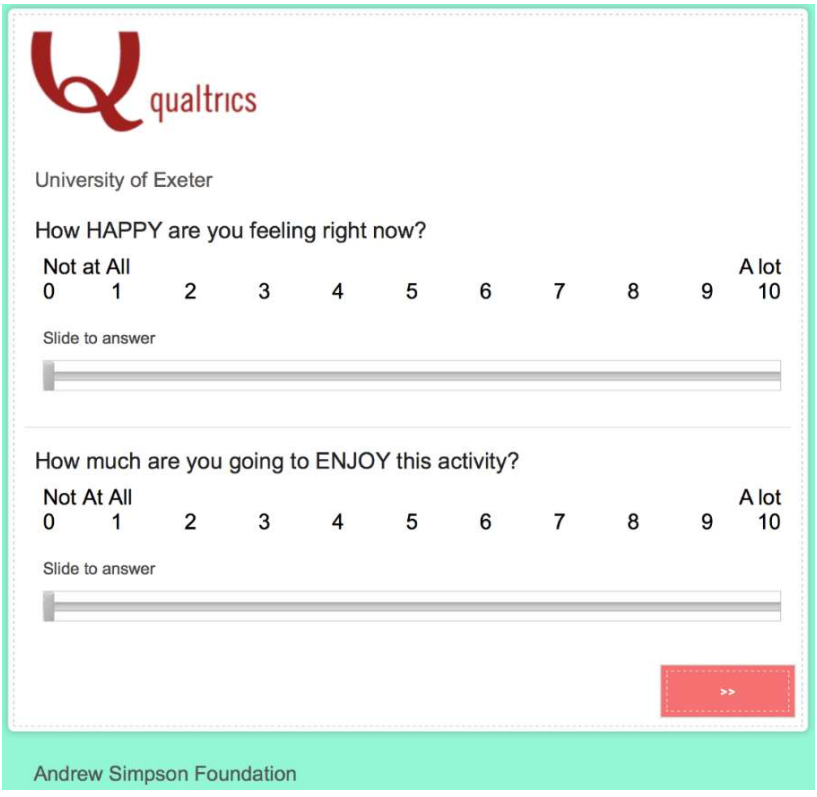


Figure 2.2 BAFT Pre- Activity Questions

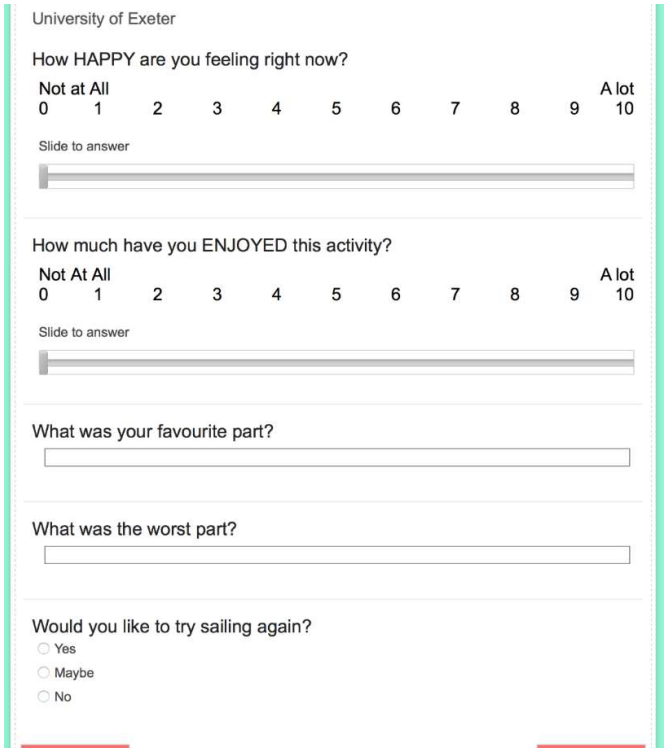


Figure 2.3 BAFT Post- Activity Questions

Statistical Analysis

Unless stated otherwise, all values are presented as means and standard deviation (SD). Statistical analysis identified any differences between perceptions of sailing compared to other everyday activities, the impact of sailing through pre- and post- assessments, and environmental influences of responses. This was conducted by calculating the means of relevant factors and conducting t-tests, one-way ANOVAs, or two-way ANOVAs through Statistics Package for the Social Sciences (SPSS version 24). An alpha level of 0.05 was accepted as the level of significance.

The open responses within BAFT (Questions: 'What was your favourite part?' and 'What was your worst part?') will be analysed through data coding. This entails categorising the responses into common groups to form categories and develop into themes (Saldana, 2015). The process

will follow that outlined by Braun and Clarke (2006) which can be found in more detail in Chapter 5 Study 3 Page 103. Qualtrics software was used to complete this task and the results were produced and represented for each category. Some answers would relate to more than one theme with only a single case discarded due to participant input error. Appendix (XII) provides the theme classification including titles and descriptions for acceptance. As the use of the DRM-C was one of the primary outcomes, the sample size was calculated based on prior work of White and Dolan (2009) using an effect size of 0.3, power at 80% and an alpha level of 0.05, which estimated a sample size of 65.

Results

Reliability analysis was conducted to provide feedback on the measures utilised. Using Cronbach alpha and condensing down the data into two columns, the feeling scale was 0.83 and the thoughts scale was 0.86. This shows good reliability of the two factors and shows that children responded consistently. This also suggests that participants were coherent in understanding and responding.

DRM-C Analysis

Table 4.1 Mean (SD) representation of the emotions and thoughts towards the activities in the DRM-C questionnaire

Characteristic	Activity Title	N	Sailing	Activity	P Value
Sad/ Happy	Watch TV	9	7.4 (2.7)	9.8 (0.7)	0.032*
Nervous/ Relaxed	Eating Breakfast	8	4.3 (4.1) †	9.6 (0.7) †	0.009*
	Spend time with Friends	15	3.3 (3.2)	1.1 (1.4)	0.021*
Good at Activity	Eating Breakfast	8	6.1 (3.4)	9.3 (1.8)	0.009*
	Eating Dinner	7	6.7 (3.3)	9.1 (1.6)	0.021*
	Watch TV	10	6.0 (2.4)	9.5 (1.6)	0.001**
	Play Video Games	8	7.4 (2.0)	9.8 (0.7)	0.014*
	Spend time at the Beach	10	6.9 (2.5)	9.2 (1.2)	0.028*
	Spend time with Friends	15	6.1(2.5)	9.3 (1.6)	0.001**
Enjoy Activity	Watch TV	10	6.4 (3.0)	9.5 (1.1)	0.015*
	Spend time with Friends	15	6.5 (3.6)	9.3 (1.8)	0.009*
Glad to do Activity	Eating Breakfast	8	6.0 (4.1)	9.5 (1.4)	0.024*
	Watch TV	10	6.5 (3.0)	10.0 (0.0)	0.005*
	Spend time at the Beach	10	5.8 (3.9)	9.6 (1.3)	0.019*
	Spend time with Friends	15	6.9 (3.0)	9.3 (1.4)	0.016*

(* significant difference between sailing and activity = P<0.05; ** significant difference between sailing and activity = P<0.001)
(† Number responses were reversed in this example)

Table 4.1 shows the differences between perception of sailing in relative to specific feelings and thoughts, compared to other activities included in the DRM-C. 'Watching TV' and 'Spend time at the Beach' within 'Good at Activity' when compared with sailing were significantly higher (P<0.001). All but one (Relaxed/Nervous – Spending time with friends) of the remaining comparisons displayed in Table 4.1 were significantly higher (P<0.05) when compared with sailing in respective characteristics.

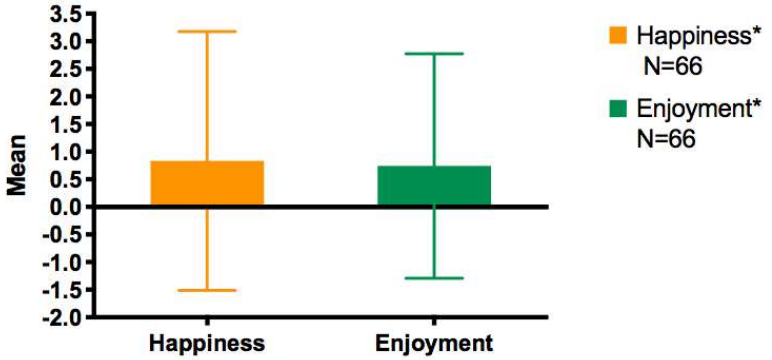
Table 4.2 Mean (SD) representation of boys and girls' emotions towards the activities within the DRMC questionnaire

Characteristic	Activity Title	N	Boys	Girls	P Value
Relaxed/ Nervous	Playing Video Games	M=17, F = 5	3.0 (3.7)	0.6 (0.6)	**0.019***
Enjoy Activity	Sailing	M=14, F=12	8.9 (1.7)	5.9 (3.2)*	**0.006***
Glad to do Activity	Sailing	M=14, F=12	8.2 (2.8)	5.7 (3.4)*	**0.048***

(* significant difference between boys and girls = P<0.05)

Table 4.2 distinguishes the responses from boys and girls when answering the DRM-C. The only significant difference from a 'feeling' characteristic was in relation to playing video games (P=0.019), showing that boys feel significantly more nervous than girls when playing video games. In addition, two significant differences (P<0.05) between boys and girls were found between sailing factors. Enjoyment and gladness showed that boys recorded significantly higher values than girls, P=0.006 and P= 0.048 respectively.

BAFT Analysis



***Significant difference between pre- and post-responses = P<0.05)**

Figure 2.4 Mean Change Scores, Pre- and post- BAFT, of the Sailing Taster Session

Figure 2.4 displays the pre- and post-change value of happiness and enjoyment. A significant increase was found in both happiness (0.83 ±2.3) and enjoyment (0.74 ±2.0) (P= 0.005 and P= 0.004 respectively).

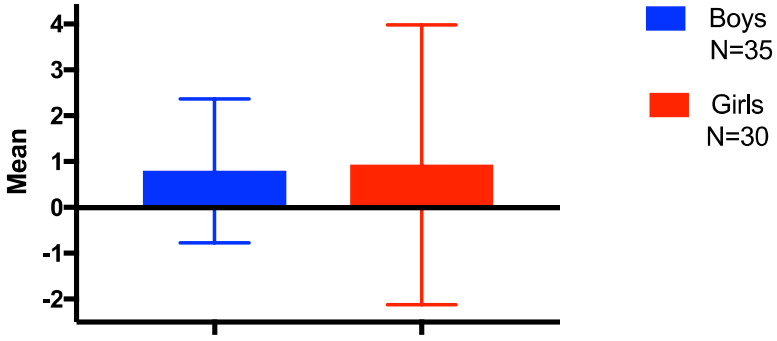
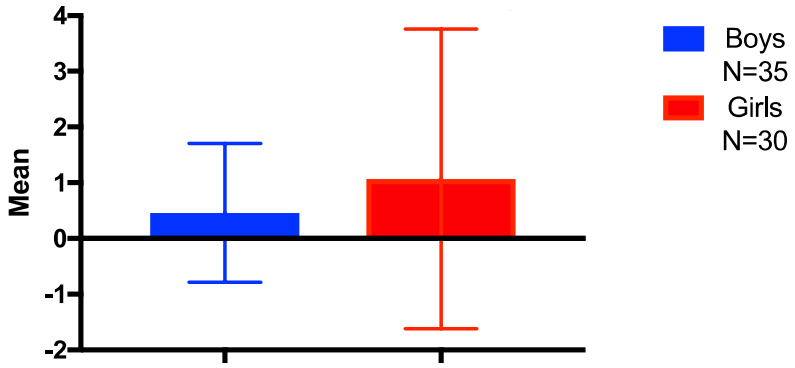


Figure 2.1 Mean Difference in Pre- vs Post Happiness between Boys and Girls

Analysis of the pre and post happiness scores (Figure 2.1) found that both boys and girls happiness increased 0.80 ±1.6 and 0.93 ±3.1 respectively. Pre- and post- scores were significantly lower for boys than girls (P=0.005).



(*significant difference between boys and girls in pre-and post-responses P<0.05)

Figure 2.6 Mean Difference in Pre- vs Post Enjoyment between Boys and Girls

Figure 2.6 shows the differences in pre and post scores in enjoyment for boys (0.5 ±1.2) and girls (1.1 ± 2.7). Both genders showed a significant increase in enjoyment (P= 0.037 and 0.02 respectively). However, neither happiness nor enjoyment changes showed a significant difference between genders.

BAFT and Environmental Conditions Analysis

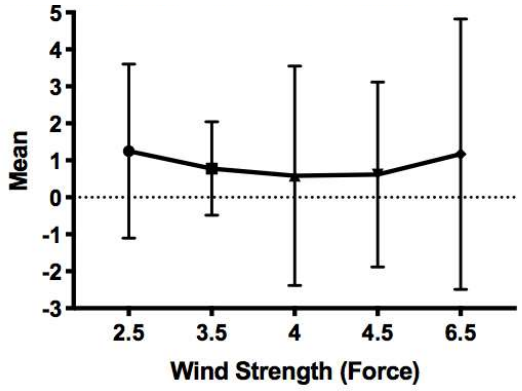


Figure 2.7 The Association between differences in Pre- to Post- Scores for Happiness and Wind Strength (Force) in the Sailing Taster Session.

The happiness differences in pre- and post-scores maintains a similar mean value showing that wind strength does not have a significant effect on the participants' happiness. The correlation between happiness and wind strength was r=0.03.

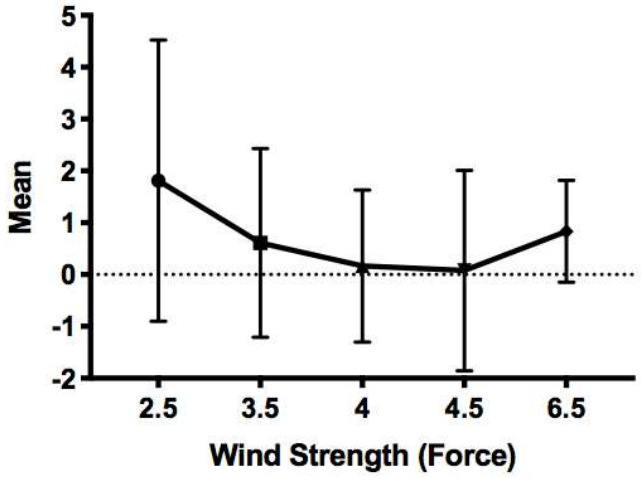


Figure 2.8 The Association between differences in Pre- to Post- Scores for Enjoyment and Wind Strength (Force) in the Sailing Taster Session.

The pre- and post-enjoyment of the sailing taster session displays an optimal increase in enjoyment at a force of 2.5. The Figure 2.8 represents a linear relationship between enjoyment and wind strength r=0.03.

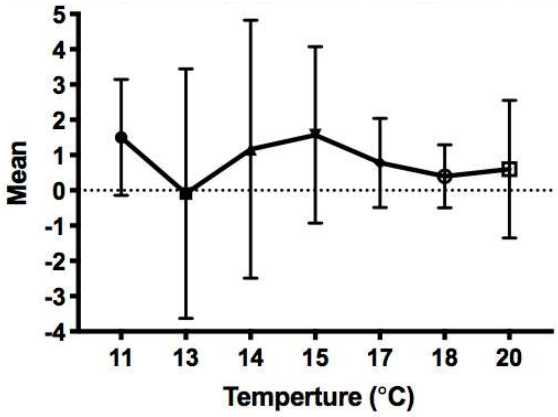


Figure 2.9 The Association between differences in Pre- to Post- Scores for Happiness and Temperature (ºC) in the Sailing Taster Session.

Figure 2.9 shows the association between temperature increase and responses in the pre-and post-happiness with the overall correlation r=0.03 (P=0.78). The greatest difference was found at 15°C (±1.57°). No discernible relationship can be distinguished between temperature and

happiness.

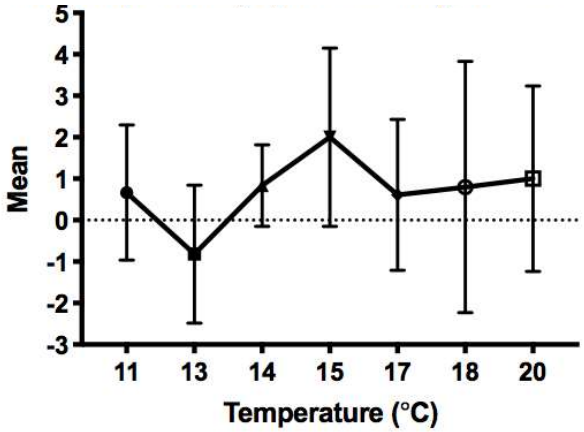


Figure 2.10 The Association between differences in Pre- to Post- Scores for Enjoyment and Temperature (ºC) in the Sailing Taster Session.

Figure 2.10 displays the greatest difference between pre- and post-scores at15°C (±2), and the only negative mean difference (-0.8) at 1°C.

Most and Least Appealing Factors of the Sailing Session Responses

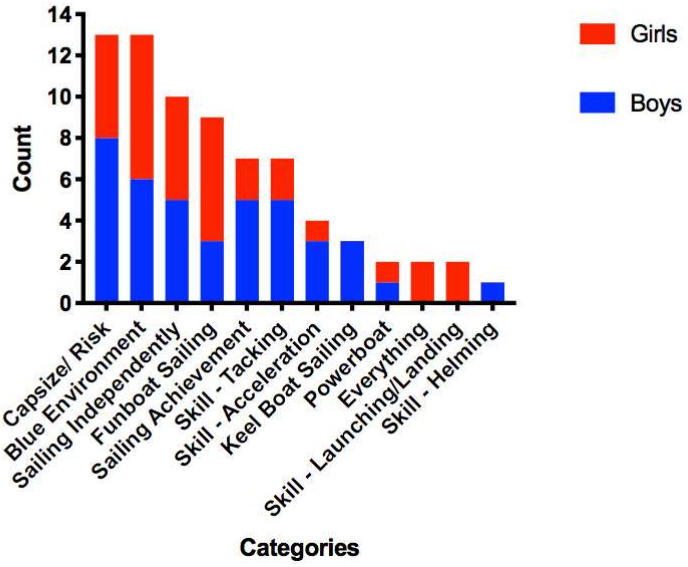


Figure 2.11 Boys and Girls Responses to Most Appealing Factors of the Sailing Taster Session

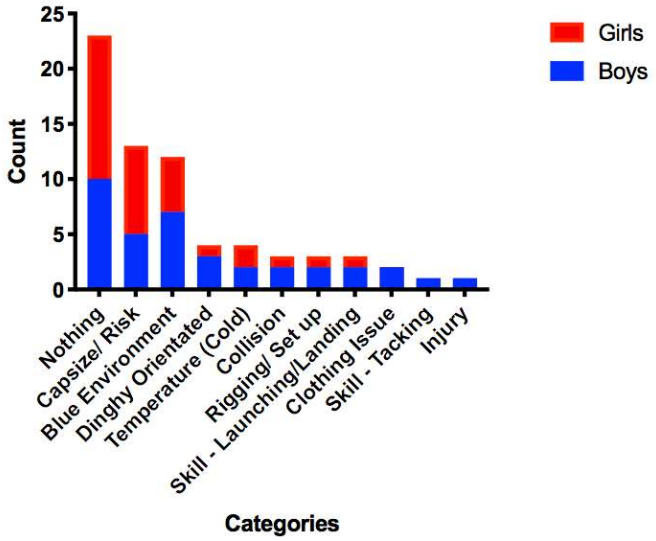


Figure 2.12 Boys and Girls Responses to Least Appealing Factors of the Sailing Taster Session

From Figures 2.11 and 2.12, it can be observed that 'blue environment' and 'capsize/ risk' are both highly rated positives and negatives of the sessions.

Discussion

Introduction

This study explored the initial effect of sailing on participants by targeting an introductory sailing session. The current study has three main areas of focus: 1). Perception of sailing relative to other activities; 2). Impact of a single sailing session through pre and post assessments and 3). Environmental influences upon participation such as wind strength and air temperature.

Overall, the findings showed that participants involved in a sailing session have preconceptions of the activity, which will be discussed in greater depth in the following discussion. In addition, the impact of the single sailing session did have a positive effect on happiness and enjoyment of the participants. Finally, the environmental influences such as wind and temperature appear to have had minimal effect on participant's happiness and enjoyment scores.

Perceptions of Sailing

The application of the DRM-C (Jenkins *et al.,* 2015) asked the participants to compare how they felt and thought towards sailing relative to a variety of other activities such as being at school, playing video games and spending time with family. This method enables an insight into what emotions were expressed regarding sailing participation, their confidence in their ability to perform necessary skills and actions and the value that participants placed on sailing compared to other daily and regular activities.

Sad/ Happy Characteristic

When observing the feeling characteristics (see Table 4.1), in terms of happiness, watching TV scored significantly higher ($p=0.032$) than sailing. Although direct comparison is not possible

due to differences in terms of 'happiness' and 'wellbeing', the concept of happiness could be considered a factor of wellbeing. Considering this factor, the observations in the current study contradict the work of Holder *et al.,* (2009). Holder and colleagues investigated the relationship between active and passive leisure time and children's wellbeing. In this case watching TV would be classed as a passive leisure time, whereas sailing would be an active leisure time activity. Results found that active leisure time, was moderately and positively correlated with wellbeing ($r=0.39$, $P<0.05$). Whereas passive leisure time such as watching TV was found to be weakly and negatively ($r=-0.11$, $P<0.05$) associated with children's wellbeing. A factor to consider for the discrepancy could be the experience in active leisure time. Unfortunately, Holder and colleagues did not specify the experience or ability level of the active leisure time. Furthermore, the participants in the current study are attending an introductory session so would possess minimal or no previous experience. Therefore, in conclusion previous experience may influence pre-perception results related to happiness.

The difference in happiness levels for leisure activities and schoolwork was also noted in research by Csikszentmihalyi and Hunter (2003). Their results found that schoolwork was scored below average for happiness while social, active and passive leisure was scored above average in happiness. Following a similar observation, doing homework scored lowest overall and less than sailing in terms of happiness (see Table 4.1). Thus, the current study supports the Csikszentmihalyi and Hunter's findings of greater happiness in leisure activities compared to school orientated activities.

Relaxed/ Nervous Characteristic

Sailing can provide an unpredictable and risk-taking surrounding, which causes an increase in nervousness (Millard *et al.,* 2001) and a reasonable justification for the contrast found between

the spending time with friends and sailing. Another feeling characteristic found that spending time with friends scored significantly lower (P=0.021) than sailing when participants were asked to identify their rating of relaxed to nervousness. Greater depth is needed to determine the true cause of increased nervousness, in particular whether environmental and social circumstances directly influence the outcome.

Good at Activity

Thoughts about sailing and other activities highlighted several areas where participants scored significantly lower for sailing when compared to the selected activity (as shown in Table 4.1). Firstly, a factor to consider for this is the sample pre-requisites. As stated in the methodology, participants were attending a 'discover sailing session' because they are being introduced to dinghy sailing for the first time. Taking this into consideration, like with any new learnt skill, e.g., learning to read (McGeown *et al.,* 2015), confidence grows with experience. Thus, confidence and being 'good' at sailing would not be expected for a beginner.

Additional significant differences compared to sailing were activities such as watching TV and playing video games, both of which are categorised as sedentary activities. A report from Townsend *et al.,*(2015) found that as much as 60% of boys and 57% of girls aged 8-10 years recorded between 2-4 hours of sedentary activity on weekdays. In comparison with sailing, it could be assumed that children have more frequent and easier access to sedentary activities, e.g., watching TV and playing video games. Therefore, as sailing depicts a new activity along with essentials skills to learn, participants are likely to record a lower confidence level in the DRM-C compared to the passive and sedentary activities that they have regular access to and experience.

An interesting finding was the factor being 'Good' at 'Spending time at the beach'. Due to the sample population being sourced from the Southwest Coast of England, arguably participants have beaches in closer proximities and easier access compared to if the population was sourced from city centres i.e., London. In conjunction with Maguire *et al.* (2011), the use of local beaches was visited more frequently throughout the year and by smaller populations of residents, whereas 'non-local' beaches were visited less frequently, however by a greater volume of population and only during the warmer season. In addition, Edwards *et al.* (2014) suggest that proximity to parks and beaches was associated with frequency of use and was positively associated with achieving recommended physical activity guidelines. Although, in the current study, achieving physical activity recommendations was not pre-assessed, the frequency and ease of access to the beach locations would give a reasonable justification for the ratings of being 'Good' at 'Spending time at the beach' from the sample population. Therefore, considering demographics of the sample population and the affect this could have had on the results, a follow up study using a greater range of demographics is advised.

Enjoy Activity

The current study found that both watching TV and spending time with friends was rated significantly higher in enjoyment than sailing (P=0.015 and P=0.009, respectively). A study by Allender and colleagues (2006) identified motivations and barriers to enjoyment in physical activity. The motivations noted were the ability to experiment within the activity, the opportunity for unusual activities, parental support and a safe environment, whereas barriers included competitive sports and highly structured activities. Arguably, sailing can be linked with the barriers found by Allender and colleagues as the activity can develop into a competitive sport and the introductory session follows a timeline (Figure 2.0, page 34), creating structure within the session. In addition, the perceived safety of the environment could

influence the enjoyment. As sailing is often completed outside of the participant's comfort zone, especially when compared to watching TV and spending time with friends, it can lead to lowered perceived safety, thus, a lowered enjoyment rating.

Glad to do Activity

Gladness, for the purpose of this study, is defined as the feeling of elation and joy (Bagozzi, 1991). These feelings place value on the activity in question. From the DRM-C questionnaire, four areas of significance between sailing and activities were found. These were Eating Breakfast, Watching TV, Spending time at the beach, and Spending time with friends.

The results show discrepancies for gratitude themes as suggested by Owens and Patterson (2013). In their study 'Activities' and 'People' were recorded as two main gratitude themes. The physical activities reported greater frequency than sedentary activities, such as watching TV, and therefore, differs in outcome with the current findings. Watching TV was significantly greater in gladness scores than sailing (P=0.005). A frequency gratitude theme was presented, and the presence of friends co-attending displayed a greater frequency than other significant members such as family (Owens and Patterson, 2013). Similarly, the current findings also showed an increased mean score for gladness/ gratitude for spending time with friends (9.4 ±1.1) compared to family (9.0 ± 1.2).

When comparing sailing to spending time with friends, there was a significant difference (P=0.016) and gladness to spend time with friends was greater. This significant finding contrasts the results from Owen and Patterson (2013) whereby friends possessed a lower frequency than physical activity.

Lastly, Eating Breakfast for this comparison will be classified as 'Basic Needs' from Owen and Patterson's study. Again, a discrepancy in results show that in the current study participants express greater gladness to eat breakfast than to go sailing. Owen and Patterson find that basic needs present the lowest frequency within their results compared to any other theme. Therefore, this suggests that participants do not consciously express vast emotion when completing standard everyday actions such as eating breakfast.

In conclusion the perception of sailing was given a mixed predisposition from participants in relation to previous findings. Analysis within the current study implies that sailing has emotional and psychological links with confidence; the ability to acquire the skills for sailing and be 'good at the activity'. All of the activities that have been highlighted in Table 4.1 possess a significant difference with sailing are present in the characteristic of self-esteem or confidence present within 'Good at Activity'. Some activities are also significant in other characteristics such as happiness, nervousness, enjoyment and gladness. As a result, it may be suggested that confidence is an over-arching characteristic that would influence emotions and thoughts. For example, emotions and thoughts that are processed during an activity e.g., sailing, may also be a pivotal focus point for engaging and retaining participants within the activity.

Gender Differences

There has been a range of research with the focus of differences of boys and girls' attributes such as coping mechanisms (Frydenberg and Lewis, 1993), enjoyment levels in physical activity and sport (Cairney, *et al.* 2012), sport motivations (Koivula, 1999), and sport participation experiences (Slater and Tiggemann, 2011). Thus, investigating the differences in gender responses to the perception of sailing participation it would be expected to align with gender differences already proposed. The current study found that boys and girls showed

significant differences on three accounts: playing video games feeling relaxed to nervous, sailing enjoyment and sailing gladness. On all accounts boys scored significantly higher than girls (P=0.019, P=0.006, and P=0.048 respectively). This gender perception is supported by Eccles *et al.* (1993), where they assessed the self- and task-perception of children aged 7-10 years. Eccles' results found that boys had more positive competence beliefs and values than girls for sports activities.

The activity of playing video games found that boys were significantly more nervous than girls when participating. According to findings by Lenhart and colleagues (2008), when asked about the duration of play 'yesterday', boys participate in playing video games for more hours than girls. The involvement and engagement into the activity could offer justification for the scorings provided by boys and girls in the current study. However, arguably the more involved the participants, the more nervous they become as they express a greater connection with the game itself.

Enjoyment of physical activity has shown a difference in reactions between boys and girls, with girl's enjoyment of physical activity declared significantly lower than boys. Schneider and Cooper (2011), found that girls with low level enjoyment at baseline or pre-intervention may benefit most from the physical activity and its effect on enjoyment and well-being. It is apparent in many research studies there is a decline in girls' participation in physical activity and sport whilst their male counterparts remained consistent (Cairney *et al.,* 2012). This evidence supports a case for focus on girl's participation in physical activity and sport with many initiatives already active and successful, for example This Girl Can Campaign to reduce the barriers for girls and women to participate.

The current study found that boys recorded significantly higher in terms of how glad they were to go sailing when compared to girls (P=0.048). The utilisation of physical activity or sport differs for genders. Frydenberg and Lewis (1993) investigated coping mechanisms and found that boys will utilise physical activity to maintain well-being whereas girls may use more social and tension reduction strategies. This links the current findings and provides justification on the difference between boys and girls, due to boys adopting physical activity or sport in a bid to overcome stress or tension. This results in boys feeling relieved and glad that is facilitated through sport. The differentiation between boys and girls links to the confidence differences for genders in relation to sport. Therefore, boys who display gladness to participate in sport and utilise sport for well-being may also experience increased levels of confidence compared to girls who participate and utilise sport for other reasons.

In conclusion, the gender perception of sailing follows previous findings through which boys encumber a more positive utilisation of physical activity or sport, whether it be in the form of stress relief, coping strategies (Frydenberg and Lewis, 1993) or enjoyment (Cairney *et al.,* 2012). The prevalence of girls in sport and in particular the attainment of girls in sport is being challenged by barriers such as gender-stereotyping, body image concerns and peer judgment (Slater and Tiggemann, 2011; Berger *et al.,* 2008). However, initiatives such as This Girl Can, are potentially breaking down those barriers to participation with an increase of over 250,000 more girls participating in sport since the campaign launch (Sport England, 2016). The prevalence of gender differences and participation in sailing has not yet been identified and would need further investigation to stipulate the true representation of gender percentages in dinghy sailing. However, given that girls have a pre-existing low baseline for qualities such as gladness or confidence in sport, perhaps dinghy sailing could provide a platform for girls to develop and henceforth be a positive force for growth.

Impact of Sailing Session

The impact of the sailing sessions is measured by the scores that the participants provided pre- and post-the sailing taster session. The aim of this was to investigate if there was a difference in pre- and post- sailing session in states of happiness and gladness of participants. In addition, to investigate any gender differences in responses. The current findings show that the sailing session had a positive effect on the happiness and gladness states in children. Furthermore, girls reported on average greater changes in emotions and thoughts.

The overall increase for both happiness and enjoyment in a sailing session supports findings from Csikszentmihalyi and Hunter (2003). The two researchers investigated the happiness levels of children in a range of activities and found that on average children scored higher in relation to social, active or passive leisure time. Likewise, Holder *et al.* (2009) also found that during active leisure, physical activity was positively correlated with children's wellbeing. They also reported that passive leisure time such as watching TV or playing video games did not portray similar findings and, in fact, found that passive leisure time led to a negative correlation with child wellbeing. To the best of the author's knowledge, this is the first dinghy sailing study to focus upon children's wellbeing. It was shown that sailing, in terms of happiness and enjoyment, can provide positive emotions. However, more research would need to focus on the differences between sailing and other sports. This would be to identify if dinghy sailing could offer different and/or complementary health and wellbeing promotions compared to other sports.

Gender Difference

As represented in Figures 2.5 and 2.6, boys reported significant increases in both happiness and enjoyment states (P=0.005 and P=0.037 respectively). Girls also presented increases in

happiness and enjoyment, albeit only reporting significant increases in relation to enjoyment (P=0.02, P=0.05). Statistical analysis showed that although pre- and post- happiness or enjoyment may have shown significant changes, there was no significant distinction between contrasting reactions to the sailing session.

However, what can be interpreted from the results is that girls presented a greater mean difference in pre- to post- states compared to boys. Previous research has shown that girls who possess low levels of physical activity competence, positively correlates with low levels of enjoyment in physical activity (Cairney *et al.,* 2012). In the current findings, Table 4.2 noted girls scored significantly lower in pre-assessment enjoyment and gladness towards participating in sailing compared to boys. An extension of focus into more explicit reasons behind gender reactions to physical activity and directly into dinghy sailing to clarify these observations is therefore warranted.

Environmental Influences

Previous research has already distinguished the promotion of physical activity in blue spaces (Finley *et al.,* 2015) and dinghy sailing is one of few sports that facilitates a water-based environment. The motion of dinghy sailing is reliant on weather, in particular wind. Therefore, due to the unique and uncontrollable environment surrounding dinghy sailing it is necessary to observe and consider any affects that environmental conditions could place on results. In the current study, the association of wind strength and air temperature on changes in happiness and enjoyment has concluded to have minimal affect. However, there is now further need for augmented research between environmental benefits that sailing encumbers compared to others mainstream sports.

Wind Strength

With reference to Figures 2.7 and 2.8 the association with wind strength and happiness was found to have minimal affect. Analysis showed no significant correlation and as shown in Figure 2.7, with only slight changes (r= 0.03) in happiness scores relative to wind speed. From this investigation, it is reasonable to assume that the wind strength does not have an effect on participants' happiness during the sailing session, within the recorded wind speeds. Variation outside of the recorded forces and increased data collection, may show greater scope and detail if weather affects happiness.

Enjoyment, however, portrays a steeper curvilinear association (r=0.19) with wind strength, as displayed in Figure 2.8. At a force of 2.5 the optimal difference (+1.8) in enjoyment was recorded. Overall, when considering both happiness and enjoyment, the wind conditions at force 2-3 recorded the optimal dual readings. This observation could offer the 'best' conditions to deliver taster sessions in. However, given the light wind, sessions may also lead to more games and entertainment activities due to the strength of winds and safety. Therefore, could influence the results found in this section. This contrasts from a force 4.5 where there was only an average +0.07 difference in enjoyment change. In conclusion, to aid further investigation and understanding of the wind influence on participation is needed, combined with detailed observations should be used to minimise external variables.

Temperature

The temperature and differences in happiness and enjoyment was analysed and showed no significant association between the two variables. Figures 2.9 and 2.10 display the mean change values and temperature in degrees to identify an optimal happiness and enjoyment change at 15°C. Similarly, to wind strength, the effect of temperature on happiness and enjoyment in a

sailing session would need further investigation and perhaps a greater range of temperature exposure would provide greater clarity.

What Makes Sailing Appealing?

As discussed throughout this chapter, sailing can expose its participants to new environments and provide challenges that may not be present in mainstream land-based sports (Allen and De Jong, 2006). To support the attractions and barriers to sailing, participants were asked two penultimate questions in the BAFT questionnaire: 'What was your favourite part of the session?' and 'What was your worst part of the session?' Responses that categorised into 'Everything' or 'Nothing' are too vague for further comment and if the study was repeated it would need closer monitoring to prevent such answers being submitted. In contrast, an interesting finding was that 'Capsize/ Risk', and 'Blue Environment' were two of the highest reported categories for favourite and worst parts of the session. Therefore, the unique characteristics of sailing are simultaneously its attractions and barriers of participation. Acknowledging this could assist in re-designing the delivery of sessions in order to accommodate for all and promote introductory sailing sessions leading into regular participation in the sport. Considering the return to sailing responses the results hold strong positive outcome and also indicates that although participants have highlighted their least appealing factors, the factors are not detrimental to returning to participate. Further data would need to be collated regarding drop-out rates and reasons to form an effective follow-on study.

Considerations

There are several factors that can affect the effectiveness of the intervention such as duration of intervention and setting e.g., school or work environment and the content delivered. One limitation of this study is the short-term assessment of impact. This study was able to give an

initial insight into the impact the Discover Sailing session could have on participants, however it is not possible to represent a perception of the impact of sailing any longer than one session. Therefore, the short duration of exposure to sailing arguably would not allow for long term benefits of participation to be established. However, the attendance of the sailing sessions has all been co-ordinated through centre and schools with parental consents attained. By combining the provider of the activity with school and parental support this engages a strong foundation for effective interventions (Slujis *et al.,* 2007).

This study has not included a control group due to this study being observational wherein the study does not have an experimental manipulation, but rather participants are followed in their naturalistic setting. The groups have acted as their own control group in their pre- responses and any change is recorded by their post- responses, but to extend the work use of a control group would allow estimates of the variation of the measurements to be known. Whilst it is acknowledged that a control group would help to make observations without the effect of sailing, for pragmatic reasons, a within-subjects type design was used. Finally, to ensure reliability of findings this study should be repeated with a larger population with a greater demographic range to promote generalisation. One aim of study 2 was to explore this process of increased generalisation.

Conclusion

This study has investigated the immediate effect of experiencing dinghy sailing on young people with numerous positive outcomes. These findings support benefits found by Cotterill and Brown (2018) and Anderson and Harris (2003) where they summarised participants increase in happiness, enjoyment in conjunction with other factors such as increased confidence, self-esteem and motivation. Importantly, the barriers to sailing have also been

proposed with conditions around the blue environment with capsizing and blue environment related responses dominated. The identification of these promotors and barriers to the sport can be utilised to increase participation rates, but also attempt to adapt sailing to meet a greater range of population needs. This may be in the form of increasing confidence in capsizing, greater consideration for environmental weather factors and focus on aspects related to happiness and enjoyment.

To conclude, the key findings from this study were as follows; boys expressed a more positive utilisation of sport as regards stress relief and enjoyment. An increase in happiness and enjoyment from pre- to post- taster session was found and girls reported greater change in happiness and enjoyment compared to boys. In review of the sessions, capsizing and the blue environment were prominent positive and negative aspects of the taster sessions. Therefore, as a result the taster sessions provide a positive experience for its participants, and it would be hoped with continued participation positive effects on mental wellbeing would be achievable.

Chapter 3 - Study 2a

Introduction

Outcomes are clear from research regarding the benefits of physical activity for children (Debate *et al.,* 2009; Sothern *et al.,* 1999; Reiner *et al.,* 2013; Telford *et al.,* 2013; Boyle, 2014). Many sports have promoted their specific attributes that participants can accrue through participation not only physically for example strength in rugby, endurance in swimming or flexibility in gymnastics, but also within the nature of the sport. Team sports entail teamwork and forms friendships while individual sports permit self-determination and independence. Yet for children who participate in sailing, attributes are unknown. For example, most people would assume that sailing is a sedentary sport 'sat' in a dinghy suggesting the exercise level would be low. Similarly, the attributes gained mentally are also unknown within children in dinghy sailing. In the following study the mental wellbeing and attitudes towards sailing will be analysed in order to give an initial understanding of children's thoughts and feeling across the duration of attending an RYA Stage 1 and 2 beginner sailing course.

Research Questions

1. Is there a difference in feelings and thought perceptions towards sailing and other daily activities?
2. Is there a difference in feelings and thought perceptions towards sailing and other daily activities between boys and girls?
3. Is there a difference in happiness and enjoyment pre- and post-sailing session?

3a. Is there a difference in happiness and enjoyment pre- and post- sailing sessions between boys and girls?

4. What are the most common appealing and non-appealing factors of dinghy sailing?

4a. What are the differences in the most common appealing and non-appealing factors of dinghy sailing between boys and girls?

Methodology

Participants

Participants (n=52) were children aged 10.3 (±2.7) y and consisted of boys (n=26) and girls (n=26). Participants were recruited through purposive sampling. All participants attended RYA Stage 1 (n= 43), and/or Stage 2 (n= 27) course. The stage 1 course is 2 days while the stage 2 is 3 days. Some participants completed both stage 1 and 2 in 5 consecutive days (n= 20). The courses were all held at a single venue, a sailing centre in the Southwest of England, in coastal waters. The content of the courses is displayed in Appendix XIII. The delivery of the course has no chronological order for completion and content is covered at a time chosen by the lead instructor on the course. Factors such as weather conditions or participant's abilities may determine the order and duration of the content.

Procedures

This study gained ethical approval from the University of Exeter, Sport and Health Sciences Institutional Ethics Committee. Researchers considered and placed necessary precautions, such how and who would assist fitting equipment to participant, in the unlikely event if required, for the safety and protection of the children during the study.

Upon arrival to the centre the parents and participants were approached and informed about the research. A briefing was led by the researcher, which visually showed the equipment that was being requested to be worn and an explanation of the objectives of the research was delivered. The main points on the information sheet (Appendix VI) were verbally explained and opportunity for parent and participant to read information sheet was given. The concluded brief resulted in either an agreement or decline by both members to participate. For those who agreed, parental and participant assent (Appendix IV and V) was gained prior any research

commencing. Each participant was assigned an anonymous code for identification purposes and confidentiality.

The procedures replicated those used in study 1 for both the DRM-C and BAFT (Page 33). To clarify, the DRMC was only applied on the first morning of their attendance on the course, whether the participants are attending stage 1 or stage 2. The only exception for the BAFT is that it was applied to both morning and afternoon sessions which enabled a detailed account of feelings and thoughts towards the course.

Measures

Firstly, the DRM-C questionnaire (Jenkins *et al.,* 2015) was used to compare thoughts and feelings towards sailing as an activity. In addition, the BAFT was utilised to get immediate pre- and post- perceptions on a session-by-session basis. The measures are replicated as to those detailed in Chapter 3, Study 1 methodology (Page 35).

Statistical Analysis

DRMC and BAFT

The data collected from the DRM-C and BAFT was analysed in the same procedure as Study 1. The only difference being the volume of data analysed as Study 2 was analysed in comparison between the two courses and/or gender differences. The later questions posed in the BAFT were analysed in Qualtrics following the procedures in Study 1 (Page 38). Independent T-Tests and One-way ANOVAs in SPSS (version 24) with an alpha level across all analysis was set at $P<0.05$ in order to accept statistical significance.

Results

DRMC Analysis

Table 3.0 Means (SD) of Significant Differences between Feelings and Thoughts Towards the Activities in DRM-C Compared to Sailing for Combined Boys and Girls

Dependent	Activity Title	N	Sailing	Activity	P Value
Sad/ Happy	Doing Homework	9	8.2 (2.6)	5.2 (2.1	**0.020***
	Time Outside	19	7.9 (2.3)	9.5 (0.9)	**0.002***
Relaxed/ Nervous	Time at the Beach	12	3.1(1.8)	1.4 (1.4)	**0.014***
	Time Outside	19	3.6 (2.3)	1.9 (2.5)	**0.027***
	Time with Family	14	3.6 (2.5)	0.9 (0.7)	**0.002***
	Time with Friends	21	3.6 (2.3)	1.3 (1.2)	**0.001****
Good at Activity	Watching TV	16	6.3 (2.0)	7.9 (2.3)	**0.006***
	Play Video Games	11	6.7 (2.2)	8.5 (2.0)	**0.022***
	Time at the Beach	12	6.2 (1.9)	8.3 (1.8)	**0.006***
	Time Outside	19	6.1 (1.7)	8.7 (1.2)	**0.000****
	Time with Family	14	6.2 (2.3)	8.6 (2.4)	**0.013***
	Time with Friends	21	5.7 (1.8)	8.9 (1.6)	**0.000****
Enjoy Activity	Doing Homework	8	6.8 (3.4)	2.6 (1.8)	**0.033***
	Watching TV	16	7.1(2.6)	8.9 (1.6)	**0.031***
	Play Video Games	11	7.3 (2.7)	9.4 (1.0)	**0.026***
	Time Outside	19	6.7 (3.3)	9.1 (1.3)	**0.006***
Glad to do Activity	At School	8	8.1 (2.7)	9.3 (1.8)	**0.038***

(* significant difference between sailing and activity= P<0.05; ** significant difference between sailing and activity = P<0.001),
NOTE: Variable sample sizes due to preferential choices from list of activities

Table 3.0 lists the significant differences in responses to the DRM-C activity and sailing. 'Good at Activity' showed a range of factors with significant differences showing that participants felt they were significantly better at activities such as playing video games, spending time outside or with friends compared to sailing (P<0.001). In terms of enjoying the activity, participants thought they would significantly enjoy sailing more than doing homework but enjoyed sailing less compared to watching TV, playing video games and spending time outside (P<0.05).

Table 3.1 Means (SD) of Significant Differences between Genders in Responses Towards the Activities in DRM-C Compared to Sailing

Dependent	Activity Title	N	Boys	Girls	P Value
Sad/ Happy	Watching TV	M=13, F=11	9.3 (1.2)	7.3 (1.7)	**0.002***
Good at Activity	Sailing	M=19, F=18	7.0 (2.1)	5.3 (2.0)	**0.015***
	Eating Dinner	M=8, F=6	9.8 (0.7)	6.8 (1.6)	**0.001****
	Time with Friends	M=15, F=16	9.2 (1.3)	8.2 (1.4)	**0.050***
Enjoy Activity	Eating Dinner	M=8, F=6	9.3 (1.5)	6.7 (2.5)	**0.032***
	Play Video Games	M=13, F=3	9.7 (0.5)	7.0 (1.0)	**0.001****
	Time at the Beach	M=9, F=12	9.7 (0.7)	8.5 (1.6)	**0.041***
Glad to do Activity	Go to School	M=3, F=6	10.0 (0.0)	5.7 (2.8)	**0.013***
	Watching TV	M=13, F=11	8.8 (2.2)	5.5 (3.0)	**0.004***
	Play Video Games	M=13, F=3	8.9 (2.0)	4.7 (0.6)	**0.004***

(* significant difference between boys and girls = P<0.05, ** significant difference between boys and girls =P <0.001)

The significant differences in gender responses are shown in Table 3.1. In all measures shown, boys produced significantly greater scores compared to girls, including but not limited, to being good at sailing, enjoying spending time at the beach and being glad to be going to school.

BAFT Analysis

Table 3.2 Stage 1 and 2 Means (SD) of Pre- to Post- Differences in Happiness during sailing sessions

Happiness	**Pre- to Post- Differences**					
	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Stage 1	0.00 (2.0)	**+0.7 (1.6)***	0.0 (1.7)	+0.4 (1.8)	-	-
Stage 2	+0.3 (3.1)	**+1.3 (2.4)***	+0.6 (1.9)	+0.6 (1.9)	-0.6 (1.9)	**+1.4 (1.7)***

(*significant difference of happiness between pre- and post –sailing session =P<0.05)

Table 3.2 shows that session 2 responses had a significant difference in pre- and post-happiness from stage 1 (P=0.008) and stage 2 (P=0.016). Session 6 from Stage 2 also showed a significant increase (P=0.032). Stage 2, session 5 was the only difference to decrease for reasons unknown.

Table 3.3 Stage 1 and 2 Means (SD) of Pre- to Post- Differences in Enjoyment during Sailing Sessions

Enjoyment	**Pre- to Post- Differences**					
	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Stage 1	-0.2 (2.5)	**+1.0 (2.0)***	-0.5 (1.9)	+0.3 (1.5)	-	-
Stage 2	-0.7 (3.3)	+1.0 (2.7)	-0.5 (2.5)	+0.5 (2.3)	-0.8 (2.4)	+1.1 (2.1)

(*significant difference of happiness between pre- and post –sailing session =P<0.05)

Pre- and post-enjoyment responses found that Sessions 1 and 3 saw a decrease of enjoyment, whereas Session 2 (P=0.002) and 4 found an increase of enjoyment (Table 3.3). Session 2 in particular saw a significant increase. Stage 2, Sessions 2, 4 and 6 saw an increase in enjoyment, whereas sessions 1, 3 and 5 saw a decrease in enjoyment, identifying a negative morning and positive afternoon session pattern.

Table 3.4 Stage 1 and 2 Means (SD) of Pre- to Post Differences in Happiness for Boys and Girls during Sailing Sessions

Happiness	Gender	Pre- to Post- Differences					
		Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Stage 1	**Boys**	-0.5 (2.3)	**+0.9 (1.6)***	-0.4 (1.6)	+0.4 (1.8)	-	-
	Girls	-0.4 (1.7)	+0.5 (1.7)	+0.3 (1.8)	+0.4 (1.8)	-	-
Stage 2	**Boys**	***-1.4 (3.0)****	+1.5 (2.8)	+0.9 (1.9)	***-0.2 (2.0)****	-0.3 (0.5)	**+1.3 (0.5)***
	Girls	***+1.9 (2.3)****	+1.1 (2.2)	+0.3 (2.0)	***+1.4 (1.4)****	-0.8 (2.7)	+1.6 (2.3)

(*significant difference between pre- and post-happiness =P<0.05, ***significant difference between boys and girls in pre- and post-happiness= P<0.05).***

Across Stage 1 boys and girls responded similarly to each session (±0.4). Session 3 found the greatest difference between boys and girls (0.7) and was the only session for genders to react differently, i.e., boys scored a decrease, whereas girls scored an increase in happiness. On two occasions in Stage 2; session 1 and 4, girls scored significantly higher in happiness than their male counterparts (P= 0.006 and P=0.045 respectively).

Table 3.5 Stage 1 and 2 Means (SD) of Pre- to Post- Differences in Enjoyment for Boys and Girls during Sailing Sessions

Enjoyment	Gender	Pre- to Post- Differences					
		Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Stage 1	**Boys**	0.0 (3.3)	**+1.0 (2.2)***	**-0.7 (1.2)***	+0.3 (1.4)	-	-
	Girls	-0.3 (1.5)	**+1.0 (1.9)***	-0.3 (2.4)	+0.2 (1.6)	-	-
Stage 2	**Boys**	-1.3 (2.8)	+1.2 (2.7)	0.0 (2.0)	+0.5 (3.1)	0.0 (1.8)	0.0 (2.2)
	Girls	-0.8 (3.7)*	+0.8 (2.8)	-1.0 (3.0)	+0.5 (0.8)	-1.4 (2.9)	+2.0 (1.7)

(*significant difference between pre- and post-happiness =P<0.05)

Table 3.5 presents the gender response differences in enjoyment pre- and post the sailing session. The greatest difference between boys and girls was recorded in Session 6. This particular session also provided the greatest change in pre to post states (+2.0 in the responses of the girls).

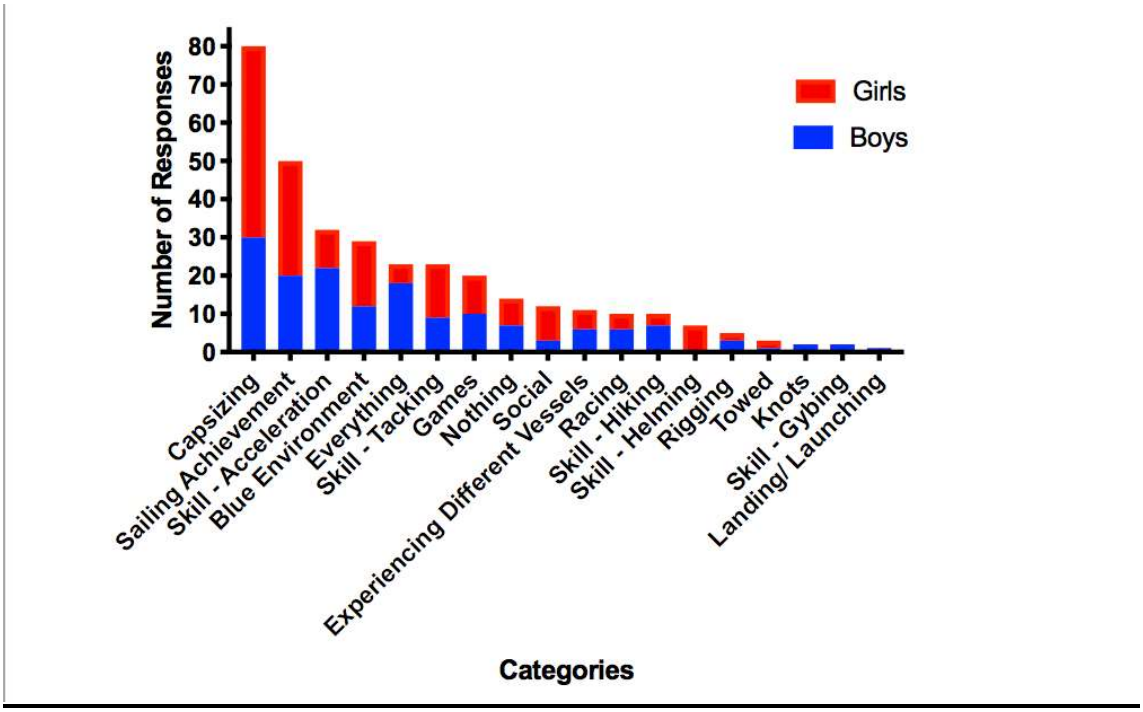


Figure 3.0 Boys and Girls Responses to Most Appealing Factors of the Stage 1 and 2 Sailing Course

The most reported factors that participants found appealing when sailing was the element of capsizing, a sense of sailing achievement, completing a skill such as acceleration and the blue environment. As displayed in Figure 3.0, generally more girls reported factors that made sailing appealing compared to boys. For both genders, capsizing was the most apparent attraction to taking part in sailing.

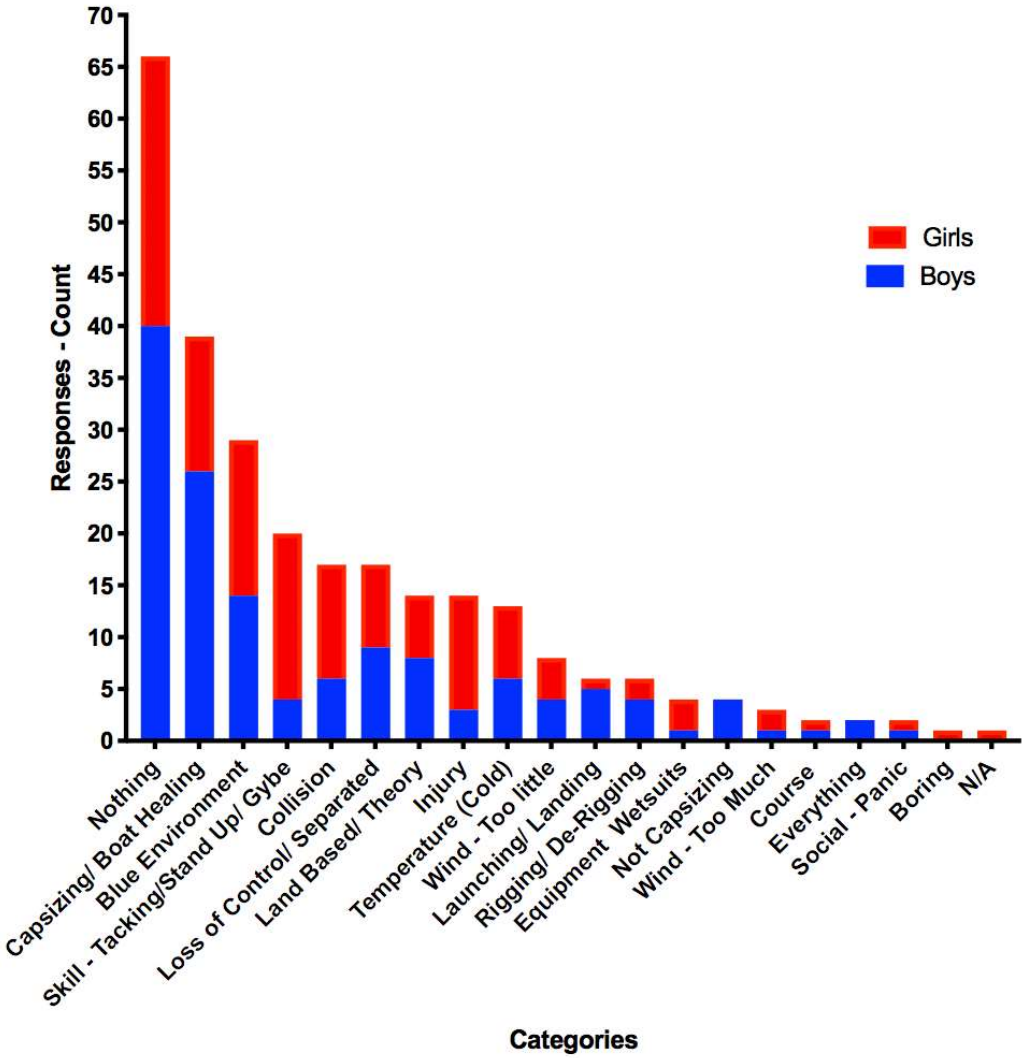


Figure 3.1 Boys and Girls Responses to Least Appealing Factors of the Stage 1 and 2 Sailing Course

Once again capsizing was noted as a common category, albeit this time in a negative perception. A total of 65 participants recorded capsizing as a negative part of the sailing sessions. Capsizing is an action that can be deemed thrilling or dangerous/ scary depending on the onlooker which may justify its positioning in both Figure 3.0 and 3.1.

Discussion

Introduction

This study explored the perception of sailing against other activities and the impact of a beginner sailing course through pre- and post- assessments of feelings and thoughts. Perception towards dinghy sailing compared to daily activities saw several significant findings including in nervousness, gladness, and confidence. Although individual cases were found in many emotions, an overall pattern when comparing to dinghy sailing was not evident in findings without more discrete objectives.

When specified to happiness or enjoyment no trend in difference was found. However, negative difference in morning sessions was found particularly evident across Stage 2 activities. Furthermore, no difference or positive differences were found from afternoon sessions. These findings highlight a pattern of emotion, however the exact stimulus or reason for these findings are unclear and warrants follow-up investigations. In particular, session 2 for both Stage 1 and 2 activities showed discernible increase in happiness. The same session was found a discernible increase in enjoyment for stage 1 in both boys and girls.

Factors within sailing in regard to environment, content and course requirements found that capsizing and blue environment elements were two factors that were reported to be distinctly promotors and barriers within sailing participation.

Perceptions Towards Dinghy Sailing

The DRM-C was administered to address the perception of sailing from the participants' point of view before they commenced the course. The model was separated into feelings and thoughts in relation to specific activities, such as eating breakfast, going to school, being outside, spending time with family and sailing. From analysis this method enables comparison between everyday activities and sailing regarding participation, confidence in ability and value placed on the selected activity.

Sad/ Happy Characteristic

The first characteristic of happiness showed two significant differences between doing homework (P=0.02) and spending time outside (P=0.002) when compared to sailing. In accordance with Csikszentmihalyi and Hunter (2003), the school related activity scored lower than a social, active and passive leisure activities. Therefore, the sad/ happy characteristics the findings are supported by Csikszentmihalyi and Hunter's findings by following similar trends and increases the reliability of these findings in the current study. Spending time outside was an interesting result as one could argue that 'spending time outside' and dinghy sailing are interlinked, having to need to be outdoors in order to go sailing. Therefore, without knowing what each participant associated with 'spending time outside' this result contradicts itself.

Relaxed/ Nervous Characteristic

Within the current study four activities found that participants felt significantly more relaxed when spending time at the beach (P=0.014), spending time outside (P=0.027) spending time with family (P= 0.002) and spending time with friends (P=0.001) compared to going sailing. As previously stated (Page 18), sailing can often be perceived as an unpredictable and a risk-taking activity. Millard *et al.* (2001) stated that outdoor activities in conjunction to high-risk

water sports can increase participants anxiety and nervousness due to the perceived dangers involved. This would offer validation for an increased nervousness in relation to sailing compared to the other leisure activities aforementioned.

On the contrary, it was reported in 2013 that the Dorset Healthcare University Foundation Trust provided £10,000 for a pilot scheme that funded young people who faced challenges e.g., autism, grieving, or anxiety disorders and were given the opportunity to complete a series of surfing lessons (Taylor, 2013; BBC, 2013). Although a different sport and encompassing different physical techniques, they tracked the participants and assessed their self-confidence, self-esteem and wellbeing. The surroundings and potential benefits could be potentially generalised to water sports per se. Participants were found to be more focused in schools and appear to possess lower levels of anxiety as a result of the surfing participation. It is difficult to determine whether the lower levels of anxiety were truly as a result of surfing participation or external variables such as peers or the environment itself may have influenced emotional changes. Thus, differences have also been found in the blue environment research (Bell *et al.*, 2015; Thompson Coon *et al.,* 2011) and provides evidence for future research to specify in anxiety, children and the water sports (sailing) participated in the blue environment.

Good at Activity

Table 3.0 showed that participants expressed that they were significantly more confident at watching TV (P= 0.006), playing video games (P=0.022), spending time at the beach (P=0.006), spending time outside (P=0.00), spending time with family (P=0.013) and spending time with friends (P=0.000) than dinghy sailing.

Firstly, the difference between watching TV and playing video games compared to sailing should have consideration of frequency, duration and ability. According to Townsend *et al.,*(2015), approximately 60% of 8-10 years recorded between 2-4 hours of sedentary activity on weekdays. This includes activities such as watching TV, screen time and playing video games. Compared to the amount of time that the current population will have been sailing previously, and considering the course attended is a beginner level provides an uneven weighing of mastery time. To prevent the variable of time available to participants in the activity, an interesting study to construct would be to compare the skill acquisition of dinghy sailing compared to a more sedentary activity or from another point of view to learn a new land-based sport either with opposite skills such as archery or with similar skills such as land sailing.

Both spending time at the beach and spending time outside were contradicting to find significant differences in responses. This is likely due to some of the similar characteristics that could be transferred between the activities and dinghy sailing. Since the population of the study were sourced from one location with views of the beaches and occasional visits to the beach, it provides questions over what the participants perceive they are going to experience that differs to when they physically spend time at the beach compared to just being able to view it. Finlay *et al,* (2015) noted that the use of the blue environment, including beaches, was utilised to maintain structure and provide a location for leisure and that had qualitatively measured an increase in mental wellbeing for those who attended.

In addition, spending time with friends should have similar considerations in that the participants completed the questionnaire before any participation in sailing. Although, they may not be attending the session with friends, often children will bond when completing

courses together and form friendships. For example, when learning to sail they are often paired up with another participant to assist in control of the dinghy. To the best of the author's knowledge although there is no evidence on friendship formation in dinghy sailing, however friendship in youth sport is recognised (Weiss, 1999). The use of communication and teamwork that is found in the work of Weiss could also be argued to be present in the pairing during dinghy sailing.

The misconception of what the course entails compared to the reality could have influence upon findings. Therefore, to explore this further it would be advised to revisit the DRM-C during the courses in a follow-up study, perhaps a midpoint collection and post collection would clarify and provide greater understanding of the pre-perceptions of activities.

Enjoy Activity

The analysis found that there were three activities which participants scored greater experiences of enjoyment compared to sailing. They were watching TV, playing video games and spending time outside. Watching TV and playing video games are both classified as sedentary leisure activities. Holder and colleagues (2009) addressed that passive leisure time attributed less to children's wellbeing less than active leisure time. This is mainly due to the intensity or activity involved. Therefore, although their enjoyment perceptions of sailing may be lower than the screen time activities, participating in sailing may encumber greater wellbeing attributes. However, as Allender *et al.* (2006) noted the barriers to physical activity, such as perceived safety of the environment, of which sailing could possess, prevents participation. Understandably, doing homework, does not exert great enjoyment for participants to complete compared to an extreme water sport activity such as sailing,

subsequently, this finding is supported by the work of Csikszentmihalyi and Hunter (2003) on schoolwork and leisure time enjoyment.

Finally, spending time outside was an unexpected significant difference to find in this study in terms of enjoyment. Within a recent growth of green and blue environment research, the current literature shows an inconclusive narrative on the specific benefits to green and specific benefits to blue environment. Therefore, a significant difference found in this study between spending time outside and going sailing could be due to several factors. Firstly, the participants are beginners, some of which would have not sailed before and are therefore scoring sailing based on minimal or no experience. Secondly, spending time outside is a vague statement and could be influential in results, thus provide justification for the differences found. The lack of specificity could cause participants to reflect on experiences located in both green and or blue environments. To improve this section of the result for future use the term 'spending time outside should be specified to limit places or experiences. This in turn may offer a more detailed comparison between sailing and a differing location.

Glad to do Activity

To the best of the author's knowledge there is no literature that directly investigates gladness levels in children and the comparison of different activities. It is interesting that the concept of doing homework is indicated to express less enjoyment than active leisure activities (Csikszentmihalyi and Hunter, 2003), however, in the current findings participants have expressed gladness towards being at school. Perhaps, this is due to being present with friends or a sense of gratitude for education and/ or that children who attend sailing are accustomed to a higher quality of education due to the stereotyped middle to upper class members of the sailing community (Scheerder *et al.,* 2002).

Gender Differences in Perception Towards Dinghy Sailing

With reference to Table 3.1, gender analysis on the responses from the DRM-C was investigated. The comparison between boys and girls shows that boys scored significantly higher than girls in all factors. This gender difference is supported by Eccles *et al.* (1993) whom also found that boys had more positive competence beliefs and values towards activities when assessing self and task perception. This supports the current finding in being confident at sailing, whereby boys showed a significantly higher rating than girls in confidence.

Screen time, which includes watching TV and playing video games was found to have a significant difference between boys and girls in four areas; happiness; enjoyment and for both in gladness. Video games provide immediate feedback in reward and tangible outcomes for performance in improvement and success whereas, in sailing and acquiring performance skills are likely to take longer to achieve and not receive instant feedback. This links to the expectancy theory in relation to effort, performance and reward. The amount of effort and level of performance results in reward. As mentioned, the effort and performance in playing video games is less physical but the reward is received arguably sooner than compared to sailing skills. Pavelka *et al.* (2016) explored the prevalence of screen-based behaviour in which they found that boys spent more time participating in screen time activities and could therefore provide a justification for the increased levels of happiness, enjoyment and gladness when compared to girls.

The activity of eating dinner appeared to have two significant areas: being good at the activity and enjoying the activity. As stated previously boys scored significantly higher than girls

(P=0.001 and P=0.032 respectively). Although there is no strong association from this current study, past research has indicated that girls are more likely to have negative relationships with food, exercise and body image and that the gender relationships with body image are opposing (Jones *et al.,* 2004; Furnham *et al.,* 2002). Boys have been shown to desire the V shape and a higher body weight, whereas girls feel pressured to possess lean and slim bodies with low body weights and therefore can manifest itself in different in food volume and content.

Finally, the gender differences for spending time with friends and spending time at the beach showed boys scored significantly higher in terms of being good at the activity and enjoying the activity respectively. Time with friends is a finding which does not follow trends in other research such as Frydenberg and Lewis (1993), who propose that girls are more socially reliant than boys as they rely on this surrounding for comfort, confidence and social status in times of stress or anxiety. Spending time at the beach is difficult to pinpoint the reasons for the differences in gender responses. This could be due to the range of activities that could be participated in at the beach. Some may take a sedentary, relaxation and improvement to wellbeing approach, whereby they utilise their time at the beach to sun-bathe etc. Whereas other may utilise the area to participate in physical activities e.g., swimming, walking or beach volleyball. More in-depth studies are needed to decipher the reasons but nevertheless an interesting difference between genders has been identified.

In conclusion, the gender differences show that boys have scored significantly higher than girls across all variables. Previous research has identified associations between gender differences and body image and food intake, facility utilisation and screen time, which this study can only offer support for screen time.

Impact of Sailing Course

Over the duration of the sailing courses the impact on happiness and enjoyment was measured through the application of the BAFT pre- and post any session.

Happiness

Stage 1 happiness levels displayed some positive or no change in happiness levels. Across the 2-day course, session 2 and 4, which are both afternoon sessions showed an increase in happiness. Session 2 in particular showed a significant increase (P=0.008). Stage 2 happiness showed a positive effect on happiness except for session 5. Session 6 and once again session 2 showed a significant increase in happiness (P=0.032 and P=0.016, respectively).

A trend to consider are the significant increases in happiness in both stages for session 2. A hypothesis for this trend could be that session 1 is the first session on the water for the course and therefore, participants may be nervous and lack confidence and self-esteem in their ability for the activity. However, after a morning practising the basic fundamentals of sailing, then session 2 may be a time when they begin to understand speed and steering controls and as a result express increased happiness. This is supported by Eime and colleagues (2013) who addressed the psychological and social benefits of sports participant all of which are present factors in the sailing course. Eime and colleagues showed that children and adolescents who participated in sport showed improved self-esteem, social interactions and less depressive symptoms as time progressed with the sport, suggesting children were happier.

It is extremely difficult to pinpoint the true cause of changes in happiness. It could be the physical activity per se, as previous research has shown numerous psychological and mental wellbeing attributes is responsible. However, it could also be due to the surroundings that the activity is taking place. Green and blue environment research has mostly focused on mental rather than physical wellbeing. In an older and adult population, the blue environment has shown to decrease depression rates, reduce stress levels and offer a place of relaxation, which all have positive effects on individuals' mental wellbeing (Thompson Coon *et al.,* 2011). As mentioned previously, there has been no blue environment study completed with children and adolescents in conjunction with physical activity. A follow up investigation could provide greater evidence for the associations between intensity of physical activity, the blue environment and the benefits in a child or adolescent population.

Enjoyment

In regard to enjoyment levels for stage 1, the morning sessions, 1 and 3, both produced a decrease in scores. Whereas, the afternoon sessions, 2 and 4, showed an increase in enjoyment. Following the pattern mentioned for happiness, sessions 2 showed a significant increase and this time in enjoyment as well (P=0.002). Stage 2 enjoyment results follow similarly, whereby the morning sessions; 1, 3, and 5, all showed a decrease in enjoyment. Meanwhile, sessions 2, 4, and 6 all show an increase in enjoyment.

The differences in enjoyment could be justified as the participants are more nervous and challenged in the morning sessions, where they are given new tasks to complete with minimal or no experience. By the afternoon sessions their perceived competence has increased for them to have accrued the skills to complete the necessary tasks. This hypothesis is supported by Wallhead and Buckworth's (2004) findings that the enjoyment of an activity was linked to

perceived competence. A more detailed account within the observation should be analysed in a follow up study to determine if a specific skill or task is the cause of decreased enjoyment. Schneider and Cooper (2011) also commented that enjoyment of physical activity may be an innate predisposition and therefore to encourage participants to enjoy physical activity may result in participants disliking the activity and explain the resistance in change.

Gender Differences on the Impact of Sailing Course

The gender analysis was completed with two foci. The first on the gender differences in pre- and post-happiness scores and the second on the difference between the genders pre- and post-happiness.

Stage 1 showed the differences in happiness was similar between both genders with a maximum difference of only 0.4. Only Session 3 showed a difference in positive and negative changes. The only discernible difference found was for boys during Session 2 where a significant increase was recorded. This provides some evidence for a pattern emerging around the effects on happiness during Session 2. In addition, girls also saw the optimal increase during Session 2, and although not significant it still followed the pattern. The cause of this pattern is unclear; however, it could be proposed that the competence linked to happiness or enjoyment is higher in the afternoons due to the duration of practise in the morning.

Stage 2 analysis showed several areas of interest. Firstly, with reference to Table 3.4, Session 1 and 4 showed a significant difference between boys and girls. In addition, both boys and girls showed significant changes in happiness scores from pre- post session. Interestingly boys responded significantly negatively while girls rated more positively. This study does not have enough data to explain these changes and should be a consideration for future research. In

addition, boys showed a significant increase in Session 6. Although girls had a greater change on average, the standard deviations differ greatly causing boys to show a more homogeneous affect compared to girls.

One factor to consider for these results are the learning styles of participants. There have been multiple studies addressing visual, auditory, reading and kinaesthetic learning styles. To the best of the author's knowledge there are none to specify gender differences in children and particularly in the blue or green environment surroundings. Wehrwein and colleagues (2007) found that girls preferred to have one style of delivery. While boys preferred to have multiple styles of delivery. The delivery could therefore influence how much the participant understands and their level of competence, which could then affect their happiness. The learning styles adopted by the instructors was not a description noted during the study and could be added for future observations as the interaction between instructor and participant could have influenced findings depending on whether the child and instructor worked ego or task orientated (Duda, 1996).

Stage 1 and 2 enjoyment showed no significant differences between boys and girls for any session (Table 3.5). During Sessions 2 for Stage 1 both boys and girls showed significant increases in enjoyment. While session 3, during Stage 1 was a significant decrease in enjoyment for boys only.

Cairney *et al.* (2012) found that gender, perceived competence and time of physical activity produced a three-way interaction for enjoyment levels. They found that girls with low perceived competence showed declining levels of enjoyment, while boys with low perceived competence showed consistent levels of enjoyment. From the results gathered in the current

study, further investigation is needed to include a competence variable in order to relate to Cairney's work directly. However, given the enjoyment levels using Cairney's outcomes it could be concluded that enjoyment levels are lower in the mornings compared to afternoon sessions and therefore reflect the participant's competence levels.

There appears be an inconclusive picture of the effect of the sailing course on specific genders, and it should be noted that several areas of analysis have noted significant findings surrounding morning sessions compared to afternoon and in addition particular around session 2 effects on happiness and enjoyment.

Environmental Influences

As mentioned previously throughout the current study, sailing provides an environment which encumbers a variety of factors for performance and safety of the sport (Allen and De Jong, 2006) such as wind, sea state and tides. This section of the discussion investigates the most favourable and unfavourable factors of the sailing sessions indicated by the participants. Responses recorded in Figures 3.0 and 3.1 which account for 'Everything' or Nothing' will not be included in the analysis due to the vague description of the response.

As presented in Figure 3.0, capsizing that can be influenced by wind through over-powering the dinghy and often result in the participant floating in the water. Capsizing is a factor that surpasses any other category. As mentioned by 80 participants capsizing was identified as their favourite thing about the sailing course. Eliminating the indiscrete response of 'nothing' the least favourite factor of the sailing for many was also capsizing (Figure 3.1). This finding seems contradictory; however, it does show a perceptual difference in risk-taking and extreme sports between the participants. For many capsizing, or the righting of a boat can be deemed as

dangerous and places risk on the activity. For some this is thrill-seeking, whereas others would want to avoid this activity.

Identified by Weber and Hsee (1998) individuals segment risk-taking into a weighing of benefits and risk. Expanded by Figner and Weber (2011) who clarified that individuals do not respond consistently to different risk-perceived situations. A multi-domain model has been constructed to suggest that characteristics of the person, characteristics of the situation and propose that it is the interaction between the two factors more so than a single personality trait. Given the difference in responses between the participants, findings would loosely support Figner and Webber's conclusion. In addition, self-efficacy has been found to play a significant role between the relationship of consciousness, neuroticism and risk taking (Merritt and Tharp, 2013). It is suggested that individuals with low consciousness and high neuroticism are more likely to participate in risk taking activities such as parkour. Therefore, considering this it possible that those who enjoy capsizing would present similar traits.

In relation to the current findings a further study could be completed for the data to be replicated. A direct assessment between personality, characteristics of the participant and characteristics of the situation would need to be addressed within a sailing environment before any associations are made.

Gender Differences and Environmental Influences

The gender differences in research suggest that girls are less likely to participate in high-risk activities compared to boys (Gullone and Moore, 2000). However, when analysing the current findings in Figure 3.0, girls are shown to note capsizing as their favourite part of the session more than boys. In addition, although there are less girls rating capsizing as their least favourite

part of the session in Figure 3.1. Overall, capsizing reports as a common dislike of sailing. Therefore, the current findings do not support findings from Gullone and Moore's study. Interestingly, when skill items have been identified such as acceleration, tacking, hiking or helming specifics, and girls have recorded more than boys. This could be linked to girl's preference in structure of activities and the sense of skill acquisition. However, it should also be noted that the skill categories for the least favourite part of the session also have girls recording more. This again contradicts the findings with the girl's population having skill acquisition as both their favourite and least favourite part of the session.

To conclude, as mentioned in study 1, the prominence of capsizing in the results for both positive and negative aspects of the session shows that the activity provides an attraction and deterrent of future participation in the sport.

Considerations

The first consideration is the lack of a control group for the study. This decision was made on the basis that this study is of an observational purposive investigation rather than an experimental comparison by design. An ethical study could be completed to ensure the direct comparisons of sailing compared to another sport due to the variable differences that each individual would be exposed too. However, control of as many variables as possible would be needed. In order to do this, restrictions on participants would mean that they had to do everything the same to ensure there is minimal confounding that alter the findings. The nature of observational studies is such that although we can observe changes in measured variables e.g., happiness, it is not possible to conclude the explanatory reasons for the changes during sailing, which might be due to other unexplained factors. Also, the population was recruited

from only one location, a centre on the southwest coast of England. For the ability to generalise the findings accurately, a greater range of population demographics should be required.

Conclusion

In conclusion, this study found no difference or negative difference in morning sessions and no difference or positive difference in afternoon sessions in happiness and enjoyment.

The afternoon of the first day for both Stage 1 and 2 courses showed discernible increases in happiness. The same session found a discernible increase in enjoyment for Stage 1 in boys and girls. Lastly, capsizing and blue environment elements are two factors reported to be both distinct promotors and deterrents in participation. The findings generally supported previous research into preferences such as schoolwork compared to leisure time (Csikszentmihalyi and Hunter, 2003), and the inconclusive differences between green and blue environment perceived benefits (Thompson Coon *et al.,* 2011).

The perception of sailing compared to other activities showed that participants responded significantly different in many areas such as watching TV, spending time with friends and going to school. Spending time outside was the most common significant difference found in four of the categories. Two factors should be considered, firstly what activities are participants associating with spending time outside and secondly what are the surroundings associated with spending time outside. Sailing can therefore act as a positive promotor to get children out of the house and away from more sedentary activities. This promotion of sailing for physical activity should warrant future research into the differences between the blue and green environments. In relation to gender, boys reported higher scores in perceptions compared to girls, therefore more research is required to understanding these differences.

The impact of the sailing course on happiness and enjoyment was particularly apparent during Stage 1 Session 2. This session saw 3 significant changes concerning boys' happiness, and boys and girls' enjoyment. The exact causes of these changes are currently unknown, however given previous research into happiness and enjoyment, it is proposed that the optimal change in perceived competence altered in session 2 resulted in the simultaneous change in emotions. It is proposed that the participants became more into their comfort zone after already completing half a day. Similarly, participants may have felt more confident with the skills they had been taught and felt more in control of their dinghy.

Finally, capsizing and the blue environment elements were reported to be two factors within the sailing course that are both common promotors and deterrents in participation in sailing. These factors provide contrasting risk taking involved in capsizing and potential therapeutic environments and sailing instructors should be made aware of these factors. To determine accurately the promotion of sailing participation the interaction between personality, characteristics of participants and characteristics of the environment would need to be included in future studies.

Chapter 4 - Study 2b

Introduction

There is an abundance of research regarding the benefits of physical activity for children showing improved physiological, psychological and wellbeing states (Debate *et al.,* 2009; Sothern *et al.,* 1999; Reiner *et al.,* 2013; Telford *et al.,* 2013; Boyle, 2014). Physical activity recommendation levels are a minimum of 60 minutes of moderate to high intensity activity every day for children, which should also include activities to improve flexibility and bone strength (Tremblay, 2016; Janssen and Leblanc, 2010). In terms of grass-roots participation, the key outcomes are unclear. Therefore, as a first step in physiological research in beginner youth sailors, this study will investigate how much physical activity is accumulated during sessions. To date all the physiological challenge research has been completed on elite level sailing resulting in core and quadriceps endurance being essential for performance (Bojsen-Møller *et al.,* 2015). Overall, the findings were that PA levels of moderate to vigorous intensities showed benefits to improved heart and lung function. Therefore, utilising the results and linking to sufficient physical activity levels for health and wellbeing benefits, this study will fill this research gap about the benefits of dinghy sailing to improve physical wellbeing. This study explored the amount of physical activity in sailing for children attending the RYA Stage 1 and 2 course.

Research Questions

1. How much physical activity is completed on the RYA Stage 1, Stage 2 and combined Stage 1 and 2 courses?
2. . Is there a difference in physical activity completed between boys and girls?
3. Do the levels of physical activity accrued reach levels where health benefits are expected?

Methodology

Participants

Participants (n=52) were children aged 10.3 (±2.7) y and consisted of boys (n=26) and girls (n=26). Participants were recruited through convenience and purposive sampling. All participants attended a RYA Stage 1 (n= 43), and/or Stage 2 (n= 27) course. The course was paid by the participant or parent (approx. £185) and was not connected to the recruitment or research team for the study. The stage 1 course is 2 days, and the stage 2 is 3 days. Some participants completed both stage 1 and 2 in 5 consecutive days (n= 20). The courses were all held at a single venue, a sailing centre in the Southwest of England, in coastal waters. The content of the courses is displayed in Appendix XIII. The delivery of the course has no chronological order for completion and content is covered at a time chosen by the lead instructor on the course. Factors such as weather conditions or participant's abilities may determine the order and duration of the content.

Procedures

This study gained ethical approval from the University of Exeter Sport and Health Sciences Institutional Ethics Committee. Researchers considered and placed necessary precautions, such how and who would assist fitting equipment to participant, in the unlikely event if required, for the safety and protection of the children during the study.

Upon arrival to the centre, the parents and participants were approached and informed about the research. A briefing was led by the researcher, which visually showed the equipment that was being requested to be worn and an explanation of the objectives of the research was delivered. The main points on the information sheet (Appendix VI) were verbally explained and opportunity for parent and participant to read was given. The concluded brief resulted in

either an agreement or decline by both members to participate. For those who agreed, parental consent and participant assent (Appendix IV and V) was gained prior any research commencing. Each participant was assigned an anonymous code for identification purposes and confidentiality.

The accelerometers were pre-set to commence and cease recording data each day at 9.30 am and 4.30 pm respectively. The accelerometers were given to participants at the time of completing the questionnaires each morning. At this time, the equipment identification, such as serial number, was aligned to participant number to ensure individual data records and prevention of lost equipment.

Equipment was subsequently fitted each day at the time of getting changed into sailing clothing and equipment. Participants wore the accelerometers around the wrist. It was not specified which wrist the equipment should be worn on, only that it should be comfortable for the individual to wear for the duration of the study. The base of the accelerometer had contact to the skin, while the face was covered by the wetsuit sleeve. Additional waterproof sleeves were available both plastic and neoprene in material for added waterproof protection. The neoprene sleeve was compulsory when participants chose to wear a short-armed wetsuit. Accelerometers were returned at the end of each day when completing for the data extraction and reset purposes.

The heart rate monitors were also given to participants at the time of completing the questionnaire. In addition, the heart rate monitors were recorded and aligned with participant number for the same reasons as stated previously. The heart rate monitor was fitted by the participant at the time of getting changed into sailing clothing and equipment according to manufacturer's guidelines. Parents were at hand if the participants needed assistance in fitting

the heart rate monitors. The heart rate monitors recorded data continuously throughout the course and returned to researcher at the end of each day. Exportation of data was completed at the end of the study.

Finally, observations of the movements and actions completed by the participants while sailing were recorded. They followed the note system shown in the Table 4.0. Timing was recorded in seconds to align best with the accelerometer and heart rate monitor data. The start and end time gave a select time of when the action was being completed. The actions were abbreviated to assist in note taking as shown in the table below. For any obscure activities, a full description was noted. A Go-pro was utilised for video examples for any activity queries and at times when an abundance of activity was present. This was only resourced for sessions that gained consent from all parents and participants.

Table 4.0 Example of Observation Notes System

Day N, AM/PM Stage N, Participants number			
Start Time	**End Time**	**Action**	**Participant**
Hr- Min-Sec	Hr-Min-Sec	T= Tack G= Gybe Cap= Capsize FTL= Follow the leader BR= Beam Reach course	AS00

Measures

All forms of measurements were applied across all 5 days of the course. Heart rate monitors (Polar Team Transmitter, Finland) measured participant's heart rate (bpm). Using software to extract data (Polar Team 2, UK). Cut off points for accelerometer data was classified into levels of physical activity as follows; sedentary <420, light 421-1139, Moderate 1140-3599, and Vigorous >3600 (Price *et al.,* 2012). The accelerometers (GENEActiv, UK) are used to measure movement (m/s^2). Accelerometers used software to extract data (GENEActiv, UK). By combining these measures with the final measurement of observations, how much physical activity the participants accrued during their sailing course and time on the water was possible. The observations were carried out to observe and record the movements completed by the participants. This is to ensure only sailing related movement is recorded thus gaining data with greater accuracy.

Statistical Analysis

The filtered data collected, using timings from observations of the heart rate monitors and accelerometers were used to calculate how much moderate to vigorous physical activity in sailing. Quantitative findings were supported by the observation notes (see Table 4.0) made throughout the testing period. Results were compared to current data and literature in the aim to categorise the sport with better accuracy in how physically active individuals are when participating in sailing. Descriptive data, mean and standard deviation were be calculated for all variables unless otherwise stated.

Results

Physical Activity Analysis

Table 4.1 Mean (SD) Representation of Light, Moderate, Vigorous Physical Activity and MVPA in Minutes from Stage 1 and 2 Sailing Course

Course	Session	N	Mean Light PA (Min)	Mean Moderate PA (Min)	Mean Vigorous PA (Min)	Mean MVPA (Min)
Stage 1	1 and 2	40	59.5 (16.2)	25.1 (10.8)	1.2 (0.8)	26.3 (11.6)
	3 and 4	41	68.8 (18.3)	27.6 (10.0)	1.5 (0.9)	29.1 (10.6)
Stage 2	1 and 2	27	61.5 (16.2)	25.4 (9.5)	2.2 (2.6)	27.7 (10.6)
	3 and 4	27	64.1 (14.2)	28.1 (12.2	3.0 (3.0)	31.1 (14.6)
	5 and 6	17	64.8 (18.5)	30.1 (13.3)	2.6 (2.7)	32.7 (15.3)

Table 4.1 shows the light, moderate and vigorous physical activity during the sailing sessions from Stage 1 and 2. Generally an increase in physical activity intensity is found in retrospect of time spent on the course. Stage 1 overall daily MVPA was 26.1 (9.9) minutes while Stage 2 overall daily MVPA slightly higher at 26.5 (10.7). Across the 5-day period 26.2 (10.5) minutes of MVPA was reported.

Table 4.2 Percentage of Daily Recommended MVPA Gained from Stage 1 and Stage 2

Course	Sessions	N	% of Daily Recommended Amount of MVPA		
Stage 1	1 and 2	41	44		
				46	
	3 and 4	40	49		
Stage 2	1 and 2	27	46		44
	3 and 4	27	52		
				44	
	5 and 6	17	55		

Table 4.2 shows that participants accrue 44% of their MVPA recommendations during the sailing stages. In addition, the final sessions of stage two present the highest MVPA (55%).

Table 4.3 Mean (SD) Representation of MVPA in Minutes for Boys and Girls Across Each Day in Stage 1 and Stage 2

Course	Sessions	N	Boys	Girls
Stage 1	1 and 2	(M=19, F= 21)	28.6 (11.9)	24.2 (11.1)
	3 and 4	(M=20, F=21)	31.4 (9.7)	26.8 (11.1)
	Average Daily Stage 1	(M=20, F=21)	26.2 (9.8)	26.0 (10.2)
Stage 2	1 and 2	(M=14, F=13)	27.6 (12.1)	27.7 (9.2)
	3 and 4	(M=14, F=13)	34.7 (14.9)	27.2 (13.8)
	5 and 6	(M=9, F=8)	36.0 (19.8)	29.10 (7.6)
	Average Daily Stage 2	(M=13, F=14)	29.5 (9.4)	23.7 (11.4)
	Average Daily Stage 1 and 2	(M=26, F=26)	27.7 (9.3)	26.9 (10.9)

Table 4.3 shows the average minutes of MVPA between boys and girls in the Stage 1 and Stage 2 course. General findings, albeit not significant showed that boys, except in Session 1 and 2 of Stage 2, recorded greater amounts of MVPA than girls. The average minutes for boys and girls in the stages overall are also highlighted. Again, no significant differences between genders were found however, boys recorded greater amounts of MVPA than girls in all forms of stages.

Table 4.4 Mean (SD) Representation of HR (bpm) per hour Over Stage 1 and Stage 2 Courses

	Sessions	N	0930	1030	1130	1230*	1330	1430	1530	Daily
Stage 1	1 and 2	5	100.7 (6.6)	99.5 (4.7)	98.7 (11.6)	100.1 (9.0)	109.9 (12.4)	115.2 (15.8)	118.6 (8.0)	107.1
	3 and 4	5	109.0 (11.1)	97.7 (9.7)	101.6 (13.9)	97.7 (9.7)	105.4 (6.9)	113.4 (9.5)	116.6 (9.8)	107.3
Stage 2	1 and 2	4	120.1 (24.8)	123.9 (32.1)	114.4 (27.7)	108.0 (18.7)	136.7 (24.4)	121.2 (42.4)	126.1 (17.3)	123.7
	3 and 4	4	117.4 (20.7)	111.8 (11.9)	112.2 (16.4)	105.2 (8.0)	125.7 (5.8)	131.3 (8.2)	130.5 (10.7)	121.5
	5 and 6	4	114.7 (15.6)	121.9 (12.6)	112.3 (9.3)	98.1 (9.9)	120.2 (10.9)	145.0 (16.1)	142.2 (28.5)	126.1

***1230 denotes lunch hour**

Table 4.4 shows the HR average per hour for each day. The 1230 hour is excluded from any further analysis as this hour is deemed 'lunchtime' when no sailing related activities are completed. The mean HR was shown to be higher in stage 2 compared to stage 1.

Discussion

Introduction

This study investigated how much physical activity participants accrued whilst attending their RYA Stage 1 and or 2 sailing courses. The use of accelerometers, heart rate monitors and observations facilitated a detailed record of movements. The main findings of this study were that participants accrued approximately 26 to 32 minutes of incremental moderate to vigorous physical activity per day across the courses. These results show that participants achieved 44% of their MVPA recommended guidelines. With regards to gender differences on all accounts bar one (session 1 and 2 of stage 2), boys recorded greater physical activity compared to their female counterparts.

Physical Activity in Sailing

To the best of the author's knowledge this is the first study to have measured the amount and type of physical activity completed during dinghy sailing at a beginner level involving children. As shown in Table 4.1, an increase in physical activity during the courses was found in MVPA levels. Many authors recognise that leading a greater physical and active life can not only offer physical attributes but also play a pivotal role in improving mental wellbeing also. Therefore, involvement in sailing could be of assistance in a strategy to encourage children to become more active and lead improved mental wellbeing lifestyles.

Participants accumulated on average 44% of their 60-minute MVPA recommended guidelines (Tremblay *et al.,* 2016) whilst attending any day of the course. Leek and colleagues (2011) study showed that youth sports contribute 23-60% of children's MVPA. Over the duration of the Stage 1 and 2, the percentage of MVPA increased in accordance with the duration of the course. This observation indicates that the participants are performing more moderate to vigorous actions, the more prolonged exposure they have in sailing along with an increase in

experience and difficulty in manoeuvres. Although, yet to be confirmed, it could be suggested that sailing required movements such as hiking out to sustain a flat hull and increased speed may be executed to a higher standard by the more experienced participants and therefore result in greater intensities of physical activity. When assessing the full combined course, the average MVPA decreases by a mean of 2.6 minutes from sessions 3 and 4 in stage 1 to sessions 1 and 2 in stage 2. It should be noted that the recruitment for Stage 2 had varied lengths of time since participants had completed their Stage 1 or had last sailed, all of which could have impacted on the outcomes.

Physical Activity Differences between Boys and Girls in Sailing

Both genders displayed similar patterns in incremental physical activity from session 1 to session 4 or 6. However, when differentiating between genders, boys have shown to perform a greater amount of physical activity compared to girls in support of previous research (Rowlands *et al.,* 2008). To minimise the gender difference in physical activity it would be key to investigate the motivations that promotes sailing participation to girls and whether the promotors could be enhanced to increase physical activity. Particularly with female sailors at the start pf their sailing experience for them to be encouraged to complete the greater physically demanding tasks could result in increased physical activity. However, that said, the motivation behind girls' participation in sailing may be mental or social wellbeing than physical successes and therefore to direct girls to be more physical could result in dis-engagement from the sport all together.

Considerations

The first consideration is the absence of a control group for the study. This decision was made on the basis that this study is of an observational purposive investigation. A study could be

completed to ensure the direct comparisons of sailing compared to another sport, but many factors would have to be carefully considered and controlled for in order to provide equivalence within the comparison. In order to do this, restrictions on the participants would mean that they had to do everything the same to ensure there are no variables that alter the findings. The nature of observational studies is such that although observational changes in measured variables e.g., intensity of activity it is not possible to conclude the explanatory reasons for the changes during sailing, which might be due to other confounding factors e.g., instructor influence of teaching. Also, the population was recruited from only one location and a more diverse population demographics should be required. The final limitation was the variation of which wrist the accelerometers were worn on as a difference between dominant and non-dominant hands has been suggested (Goble *et al.,* 2006).

Conclusion

Overall, Study 2 has accumulated data across a variety of areas that provides original data into the physical and mental wellbeing benefits of participation in a Stage 1 and 2 RYA sailing course. An important finding included the observation that approximately 44% of the UK MVPA recommendation for children and adolescents during sailing were achieved, undoubtedly, assisting in the national targets for physical activity. In addition, due to the intensity of physical activity, sailing could be utilised to encourage those who lead a sedentary or low activity lifestyle to lead more physically active ones. The benefit of utilising sailing is that a large proportion of the physical activity includes light intensity and for those leading a sedentary lifestyle this offers a gradual increase in activity rather than a sudden increase of higher intensity activity. Boys, as shown in previous literature (Eccles *et al.,* 1993) generally completed higher levels of physical activity compared to the female participants.

Chapter 5 – Study 3

Introduction

The drop-out rates and time frame of drop-out are well documented within physical activity research. There have been multiple studies addressing the promotors and barriers of participation and retention within physical activity and sports (Sallis *et al.,* 2000 and Holt *et al.,* 2011). Findings were factors such as parental overweight status, facility access, physical activity preference, cost and time restrictions which affected opportunity for children to participate in sport. However, there are minimal reports based upon participation within dinghy sailing and in particular the promotors and barriers of the sport (Cotterill and Brown, 2018). Study 3 will address the promotors and barriers of the sport from the participants perception and will investigate the relationships between the entrance into a sport, the participant's current reasons for maintaining sailing and whether they have identified future sailing ambitions. This particular study will also identify any potential positive or negative attributes participants believe they have gained from long-term participation in the sport.

Research Questions

1. What are the most common promotors or barriers of retention in dinghy sailing for young people?
2. Is there a trend between entrance pathway, reason for sailing in present day and/or future sailing ambition?
3. What impact can dinghy sailing have on young people participating regularly?

Methodology

Participants

Participants (n=12) were aged between 8-13 years of age (mean 11 ± 1.54 y). There was no restriction on gender ratio (girls n=5, boys n=7). The participants were recruited by convenience and purposive sampling. The research took place at two sites; one inland site at a London based Sailing Centre (n=3) and one coastal site on the Southwest Coast of England (n= 9). To be included in the study participants had to have been sailing on a regular basis (at least once a week and for more than one year). Ideally, but not limited to, participants should had gained at least their Royal Yachting Association Youth Stage 1 and 2 sailing qualification or have been sailing at a similar competence level. Competence level was assessed by the researcher, who was a qualified RYA instructor, and advised by the sailing centre staff at the time of the initial recruitment meeting and invitation to study participation.

Procedures

This study was ethically approved from the University of Exeter Institutional Ethics Committee. All data was collected anonymously, and retrospective codes were assigned to each participant to protect their identity. The researcher delivered the briefing and debriefing of the study to which both parent/ carer and child were present. At this time the measurements and procedure were explained verbally by the researcher, whilst also giving the option to read a research information sheet (Appendix IX).

The parental consent (Appendix VII) and participant assent (Appendix VIII) was gained prior to the commencement of any procedures. Emphasis was placed on the anonymity of data and the assurance that the participant had the right to withdraw at any time without justification. Parents and participants were also given the opportunity to ask any questions in both the

briefing and debriefing of the interviews to cover any concerns or issues. The only questions that were posed were related to time restraints on the water. The response given to these issues were that the procedure would be completed at a suitable time to prevent the participant from being absent from any part of their usual sailing attendance. The data and recordings collected were stored on a password protected laptop with any hard copy items stored in a locked cabinet. Access to raw data was only permitted to the primary researcher and other project co-investigators.

The interviews were conducted during the sailing season and took place on site of the two stated locations. The environment for the interview, which was agreed with by all parties; researcher, parent, participant and centre, was in a public area visible to parents and or staff of the centre. Interviews took place on one occasion and lasted approximately 20 minutes to complete. A semi-structured interview allowed the researcher to semi-guide the content and flow of interview, whilst still allowing the participant to give as much detailed answer as they could about the topics (David and Sutton, 2011). The researcher used a prompt script (see Appendix X) during the interview to ensure all topics were covered adequately. For any responses from the interviewee that were not completely understood or need more information, clarifying questions were asked e.g. 'What do you mean by that?' The planning and delivery of the interviews was based on the guidance outlined by David and Sutton (2011). For analysis purposes, all interviews were recorded digitally using a dictaphone (Tascam, DR-07MKII) or using software on the research laptop (MacBook: Dictaphone). During the briefing and gaining consent, the parents and participants were informed of the recording taking place and the presence of recording was emphasised with participant immediately prior commencing the interview.

Interview Guide

Semi-structured interviews were completed with participants from sailing youth clubs. The content of the interviews were split up into different topics. These topics covered the introductory to participant, the participant's current style of sailing, sailing aim/ ambition, entrance pathway into starting sailing, gaining qualifications, regular attendance, present day, and the impact of sailing. The interview focused on promotors and barriers, based on the findings from Cotterill and Brown (2018) that participants have experienced through gaining qualifications, regularly attending and present day, including ones that they may have suggested for reaching their sailing ambition. The promotors and barriers were noted aligned with timeline to identify common barriers that can potentially lead to increasing drop-out rates or enhancing common promotors which could maintain retention in the sport. The participants had also been encouraged to discuss the impact that sailing has had on them and were explored in views of self-development, education and learning, mental wellbeing, physical wellbeing, and social wellbeing.

Data Analysis

All interviews were transcribed by the researcher. The information gathered was utilised and compared against a valid and recognised framework (Ritchie and Spencer, 2002). The specific framework utilised in this study was the thematic analysis. Personalised prior data collection of the framework contents was devised from academic research about the benefits of physical activity (Sallis *et al.,* 2000), research into youth sailing (Cotterill and Brown, 2018), research into adult/ elite sailing (Allender *et al.,* 2006; Bojen-Møller *et al.,* 2015), and industry-suggested factors in relation to entrance pathways into sailing (RYA, 2018), promotors of sailing (Anderson and Harris, 2003; Cotterill and Brown, 2018), barriers of sailing (Anderson and Harris, 2003; Cotterill and Brown, 2018), and the impact of sailing. Some papers were

more directly linked than others, but as research is sparse in areas concerning sailing, therefore a broader approach to cited literature has been utilised. The thematic analysis process allowed preconceptions to be categorised from current research sources. Upon analysis, the interviews were read to identify key points and common themes across multiple transcripts. The transcripts were then re-read to highlight the codes and confirm common themes. The themes were reviewed to ensure inclusivity, before the report was written. Braun and Clarke (2006) identify the 6 phases of thematic analysis in Table 3.0. The action taken by the researcher at each phase has also been specified in the 'Actions Taken Column', this includes any cross checks with project co-investigators to ensure reliability and to avoid misinterpretation.

Table 5.0. Description of Braun and Clarke (2006) 6 Phase of Thematic Analysis, Including the Actions Taken by the Researcher in the Reviewing and Presenting Processes

Phases 1-6	Description	Actions Taken
Phase 1. Familiarising yourself with your data	If data is collected through interactive means the researcher has an advantage of already having the knowledge of the content and possibly some initial analytical ideas. Immersion into the data means repeated reading and in an active manner such as searching for patterns, Reading and re-reading is time-consuming, yet the process of transcribing and reading is essential for thematic analysis.	All interviews to be transcribed by the primary researcher. Read and checked the transcripts compared to the original on a regular occasion. An initial ideas list was generated at this time using comments in margins to highlight. Cross checks with project co-investigators for verification.
Phase 2. Generating initial codes	Having generated an initial list of ideas, this phase means organising the data into groups of meaning. These codes will often be quite precise for the themes to broaden in a later phase. The coding will be data driven due to pre-established research questions. However, openness to new codes will also be present.	Worked systematically through all transcripts to identify interesting aspects in each document. A large codes list was formed. Codes were driven from pre-established research questions (theory-driven).
Phase 3. Searching for themes	The identified codes are analysed to consider how different codes may resemble similarities or differences to form themes. During this phase, it is advised that visual representation is used to assist in compiling themes, for example table and	Codes were analysed and groupings of similar properties were formed into candidate themes. A mind map or memos were created to assist in compiling

	mind maps. Thoughts can begin about the relationship between codes, themes and the significant of these in both overall and sub theme formation. Generally, the greater volume of codes within a theme often symbolised greater significance. For any codes that may not confide to any candidate themes a 'miscellaneous' theme will be formed.	appropriate themes. Greater significance was highlighted in bold, whilst sub-themes were visual extensions from overall themes.
Phase 4. Reviewing themes	The refinement of the candidate themes can often lead to merging or collapsing groups. Refinement may be needed if there is a lack of data or too much diversity in the combination of codes and can result in cades being included/ excluded than the original draft. Two levels of reviewing; level one means reading all the codes from each theme and ensuring they appear in a coherent manner. This level's outcome should produce a candidate 'thematic map' which accurately portrays the codes within the themes. Level two reviewing consists of confirming the overall themes and sub-themes are a realistic reflection of the whole data set.	All themes and content were re-read to ensure compatibility. Any adjustments to the map were made for example, exclusion of irrelevant words. Level one reviewing was completed by confirming the codes categorising, a comparison to other themes was also completed to affirm codes where in most suitable theme. Level 2 reviewing was completed by re-reading the data transcriptions whilst aligning, when mentioned, the most prevalent themes embodied in the text
Phase 4. Reviewing themes	The refinement of the candidate themes can often lead to merging or collapsing groups. Refinement may be needed if there is a lack of data or too much diversity in the combination of codes and can result in cades being included/ excluded than the original draft. Two levels of reviewing; level one means reading all the codes from each theme and ensuring they appear in a coherent manner. This level's outcome should produce a candidate 'thematic map' which accurately portrays the codes within the themes. Level two reviewing consists of confirming the overall themes and sub-themes are a realistic reflection of the whole data set.	All themes and content were re-read to ensure compatibility. Any adjustments to the map were made for example, exclusion of irrelevant words. Level one reviewing was completed by confirming the codes categorising, a comparison to other themes was also completed to affirm codes where in most suitable theme. Level 2 reviewing was completed by re-reading the data transcriptions whilst aligning, when mentioned, the most prevalent themes embodied in the text
Phase 5. Defining and naming themes	This phase commences when there is a satisfactory thematic map. Preparation of the content for analysis consists or defining and refining the themes. This involves understanding what each theme is about and what aspect of the data it narrates. The themes may already have working titles, in this phase the name of the	Organised all the codes within candidate themes into a coherent account and devised a paraphrase summarising the codes and identified what the main qualities and properties were. Names were drafted with a final choice

	themes is to be determined and will be used in the final analysis. Names should be concise and give the reader an idea of the content.	confirmed with co-investigator if necessary.
Phase 6. Producing the report	This phase is to tell the narrative of the data as a whole which convinces the reader of the validity and reliability of the analysis completed. The write-up should narrate the story of the data in a concise, coherent and non-repetitive style. Evidence of the themes and codes within the data is paramount to include. The analytical narrative should expand the description of the data and form a case of an argument in relation to your research questions and the consequential findings.	The write up was structured in an order to present, debuting with the most significant themes. The sub-themes and details regarding specific codes or groupings such as quotes from the transcriptions, were included as evidence for the justification of analysis. The conclusion gathered the relevant information and closed the chapter in a manner that imprinted desired themes once again onto the reader.

Results

Participants Profile

Table 5.1 Participants Profile

Number of Participants	Age (y)	Gender	Average Current Attendance
12	11 ± 1.54	8 Boys, 5 Girls	~ 2 times per week

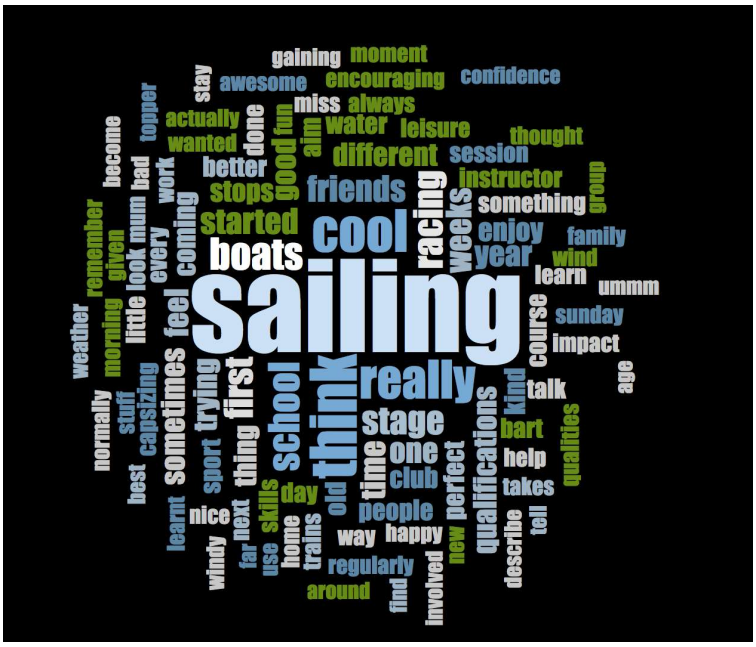


Figure 5.0 Word Frequency Formed from Interviews

The word frequency has been created from the interviews will all participants. The greater frequency of word present in the interviews the bolder and larger the representation in Figure 5.0. Some words were removed from the word frequency, which held no value of interest such as ‘and’, ‘umm’ and ‘the’.

Entrance into Sailing

Table 5.2 Entrance into Sailing Information

Entrance Age (y)	**Locations** **(No. of children)**	**Motivations**	**Attractions**	**Worries**
6.8 ± 1.53	• Local Inland Centre Poland (1) • Local Coastal Centre New Zealand (2) • Inland Summer Camp Canada (1) • National Coastal Centre SW UK (5) • Local Coastal Club S UK (1) • Local Inland Centre London (2)	• Family • Friends • School • Environment • Learning/ Qualification	• Fun • Enjoyment • Capsizing • Blue Environment • Social • Learning • Trying different boats	• Capsizing • Injury • Steering • Collison • Water

Reasons for Sailing

Table 5.3 Reasons for Regular Sailing

Reason	Likes	Dislikes
• Leisure • Racing • Qualifications	• Fun • Different to other sports • Experimentation • Opportunities • Society/ Social setting • Family • Blue Environment/ Nature • Learning/ Independence/ Progression/ Challenges	• Clothing/ Equipment • Weather • Time/ Location • Other sport/Career priorities • Instructor/ Management choices

Impact of Sailing

Table 5.4 Positive and Negative Impacts of Long -Term Sailing Participation

Positives	Negatives
• Environment Exposure • Improved Mental Wellbeing • Improved Physical Wellbeing • Developed Social Skills • Developed Life Skills • Learnt Sailing Specific Skills • School/ Career Assistance	• Time • Social • Expenses • Injuries/ Hazards • Specifications • Limitations

Future Aims

Table 5.5 Future Aims Identified from Interviews

Ambition	Career/Role	Qualifications	Performance/ Technique	Type of Vessel
• To be in Olympics • Sail across the Atlantic	• Become a Sailing Instructor • Become a Young Leader	• Complete Stage 3 • Complete an Advanced Module	• Improve Theory Knowledge • Improve Racing Strategy/ Technique	• Sail Laser Radial at Youth Games • Sail a Wayfarer • Sail a Topper

Discussion

Introduction

The aims of the study were to firstly identify the most common promoters and barriers of retention in dinghy sailing for young people. The investigation also aimed to identify any trends between entrance pathway and type or reason for sailing in present day or future activities. However, due to the majority of the sample population coming from a similar starting background, trends were inconclusive for analysis. Finally, the last aim was to identify the impact on young people participating regularly in dinghy sailing, both positively and negatively.

The key original findings showed that promotors in both beginning to sail, and regular sailing included fun, capsizing, blue environment experience, social setting and the opportunity to learn. In contrast the negative aspects differed more between beginning to sail and regular sailing. Beginners included capsizing, risk of collision and the blue environment elements. Meanwhile, regular sailing negatives included time restraints, expenses, risk of injury and limitations in sailing performance.

There are four main areas of focus for the discussion. These include;

1. Promotors of dinghy sailing participation,
2. Barriers of dinghy sailing participation,
3. Trends between entrance pathway, reason for continued participation and ambitions in dinghy sailing,
4. Positives and negative influences on participation in dinghy sailing.

Promotors of Dinghy Sailing Participation

The promotors of dinghy sailing participation are highlighted through 'attractions' in Table 5.2, those beginning to sail and 'likes' in Table 5.3, those who continue to regularly sail. Combining the topics together has identified promotors for both participation periods as well as ultimately gaining greater depth and understanding into the promotors themselves.

Fun and Enjoyment

Elements of enjoyment and fun is participation has been noted within both stages of sailing participation. There is dispute between researchers about how enjoyment is conceptualised. Some perceive enjoyment in terms of 'flow' (Csikzentmihihalyi, 1997). The optimal enjoyment is described as the balancing the difficulty of the desired skill and personal abilities. If the skill was too advanced for an individuals' personal skill level, this could lead to anxiety. In contrast, if the skill was not challenging enough and had a higher personal ability it could lead to boredom for the individual. Another concept is Scanlan and Lewthwaite's sport enjoyment model (1986). The model comprised four categories. Intrinsic- achievement related to personal perceptions of mastery and competence; and intrinsic-non-achievement was physical movement sensations and excitement. Additionally, extrinsic-achievement consisted of perceptions gained from others and extrinsic-non-achievement is non-performance related actions such as affiliation. With all opinions considered, enjoyment of the sessions was not directly assessed in the current study, however multiple participants referred to enjoyment, fun and other positive feelings identifying some form of presence and importance.

'Well, I just uhh, I was never really that good at football or cricket or any of those uh sports and this was the sport that I really enjoyed, and I felt at home with, so I wanted to try it out again and I got my stage 3 that's when I knew I really liked it'.

Learning and Challenges

For the maintenance of attendance to sailing sessions, the moderation of sessions and ensuring the participants are enjoying the content, having fun whilst progressing in skill is crucial. A couple of sailors highlighted that the opportunity to learn new skills was a motivation to start and continue participation in sailing. The learning environment for children can have an influence of their style and type of learning. For a sport with a heavy weighting of practical skill acquisition, it seems only necessary for the children's learning experience to be proportionately practical.

According to the National Foundation for Educational Research (Dillon *et al.,*2005), there are four areas of benefits surrounding outdoor learning, Cognitive impacts involve improved knowledge, understanding and academic achievements. Affective impacts encompass attitudes, values, beliefs and self-perceptions. Interpersonal and social impacts late to communication skills, leadership and teamwork qualities. Finally, physical and behavioural impacts involve physical fitness, physical skills, personal behaviours and social actions. Particularly for children the emphasis of learning should have a focus upon play and experimental opportunities.

Gender has also played a role in how children play and learn. Garcia (1994) investigated how children interact in the context of learning fundamental motor skills. The study found that girls strived for social interaction and partnership with other participants. On the contrary, boys portrayed a more competitive element, individualised and egocentric, if any co-operative interaction was made by boys, it was only found to be with the teacher. Garcia's findings have also been validated in more recent research (Stein *et al.,* 2012; Ruiz *et al.,* 2010; Parker *et al.,*

2012). The contrast between the two genders also implies that adaptions in learning should be made when teaching sailing to ensure optimal development in both genders.

Opportunities of Progression

One format to ensure moderation in sessions is the opportunity to try different vessels. Several of the participants mentioned a desire to gain experience in specific vessels. For example, some aimed to increase competence in a Topper. Toppers, Teras, Qubas, Zest, Laser, and Wayfarer are just six types of dinghies that have been mentioned in one or more interviews with the participants. All six dinghies serve different purposes and target different populations (see appendix ? for more information). This provides sailors with opportunities to learn and progress in several types of dinghies to improve skill and experience. In contrast, dinghies also have restrictions and due to their purpose and occasionally this can limit who can sail the dinghies, for example you would not put a beginner, who has never sailed before, in a Laser standard due to the skill required to sail and the fragile hull.

Blue Environment, Exposure and Nature

The blue environment was consistently mentioned during interviews using descriptors such as 'water', 'boats', specifically 'capsizing', and the 'weather' in particular reference to the winds. Exposure to the natural blue environment is undeniable during experimenting with capsizing as the water provides a safe landing in the motion. Several mentioned that their exposure to such an environment benefited in both an adrenaline-pumping and relaxation manner. The adrenaline sensation is associated with extreme sports participation (Brymer and Schweitzer, 2012), whereas the relaxation sensation has been associated to blue environment exposure.

Mention of nature during an interview?

Risk Taking

As described previously (Page 18 and 70), researchers believe that risk taking behaviours is due to personality (Merritt and Tharp, 2013) or interaction with person and situation (Boyer and Byrnes, 2009). Risk taking behaviours can be predicted by opportunities and the perceived outcome (Boyer and Byrnes, 2009). A large proportion of risk-taking research has focused upon negative behaviours. Since capsizing is a skill necessary for all dinghy sailors to be competent with, Humphreys' and colleagues (2013) study examined the behaviour related to sensation seeking, they concluded that sensation seekers were a heterogeneous group (Male N=26, Female N= 50, aged 18-26 y). However, Humphreys and colleagues did find a significant interaction between sensation seeking and associative sensitivity, the frequency and remoteness of automatic cognitive activity. The risk-taking behaviour in sailing is mostly associated with capsizing. Participants recalled expressing fear of the event prior to their first experience of sailing, however, eventually overcoming their initial perceived fear through experience. Some mentioned their current enjoyment while sailing was capsizing, getting wet and experimenting with how they could capsize and/or right their dinghy.

'...so, it's fun learning different ways how it's best to get back in the boat where you've capsized…'

Social Factors including Family Friendly

In the current study several participants noted that they got involved and maintained participation in dinghy sailing due to family or friends, coinciding with two of the most common social motivations; parental and peer factors (Sallis *et al.,* 1999). Some influences are due to parent's positive attitude towards physical activity selection (Babkes and Weiss, 1999). If a child has a parent who sails they are more likely to sail themselves, particularly if it is their father's boat (Humberstone *et al.*, 2003).

Reports such as wanting to be part of a team, to be with friends, social recognition within sport are present in both genders as youth (Allen, 2003). Such friends are there in a supportive manner and many of the participants were informed about sailing and the chance to try through a friend already participating in the sport.

'Umm… my friends told me that she went sailing and she really enjoyed it. And she asked if I wanted to come. At first, I wasn't really sure if sailing was my thing, but once you first try it you really feel free.'.

Another participant also mentioned about the ability to be in a boat with their friend on their first experience, which gave them reassurance in a new environment and activity. As the participant becomes more experienced, they get to know peers from outside their local area through training or regattas that host for national or international entrees. opportunities to become members of a 'class' , a group of *children* training or racing in the same type of dinghy, or a 'squad', where *children* are likely to be based at one site but not necessarily dinghy specific groups, displays similar characteristics to teams and therefore one could argue reasonably that the benefits of being part of a team such as increased self-esteem and lowered anger, tension and fatigue (Wann and Weaver, 2009) are also present. The integration of youth with a similar interest naturally promotes social inclusion within the group. Social inclusion can therefore lead to increased physical and mental wellbeing (Bailey, 2007).

Another factor that was mentioned by several participants was the interaction between instructors, staff and by-standers with the participants. One child said when asked what makes them want to come back;

'The society, if it wasn't so friendly down here, I don't think I would ever really enjoy it as much.'

'…it's quite a nice community and you can socialise and mix and make friends and that in it as well.'

Furthermore, the site itself becomes familiar to the participant, a place where they can feel comfortable and enjoy being, one participant went as far to say that when they attend their sailing club it 'feels like home'.

In summary, the promotors of dinghy sailing are a sense of fun and enjoyment, a chance to learn and be challenged, opportunities of progression, exposure to the blue environment and nature, sense of risk taking, and social factors.

Barriers of Dinghy Sailing Participation

Skill Acquisition

Likewise with most sports, sailing has two determinants in participation when it comes to skill acquisition. The first being the ability and time needed to practise said skills. For sports such as sailing, the hosting environment needs to be suitable with a strong emphasis on safety and supervision. Secondly, being that the innate skills required to control a dinghy are rare. Controls of the dinghy include sheets (ropes) to control the sails, tillers and rudders to control steering, balance and trim to keep the boat flat and the centre board to stop the boat from drifting. Participants mentioned that the steering was a skill that took time to comprehend. This is likely due to the unnatural controls, whereby if the participant was to push their tiller to the right side of the beat, the dinghy turns left, and vice versa. For adults to comprehend it would be similar to reversing a car, which children would be unaccustomed to.

'I did have one question why do boats if you turn left it goes right? I didn't understand how it worked but now I do I think'.

Successful steering can give participants a sense of achievement. However, for those that have not mastered the skill it can often result in collision with another dinghy, land or marina object

such as a buoy. The impact and force of the collision will be dependent on the speed at which the dinghy was travelling at. In the event of a collision, like with any set-back in sporting practise can reduce the participant's confidence and self-esteem (Lane *et al.,* 2003). Therefore, as a result be a deterrent to continued sport participation.

'…at first I wasn't really sure if sailing was my thing…'

Another loss of control example is in the event of capsizing. Multiple responses highlighted that their worries to participating in sailing surrounded the fear of capsizing the dinghy. Capsizing encompasses the risk- and adrenaline activity that is either loved or loathed by participants. It should be noted that although beginners are nervous and express anxiety about the concept of capsizing, more experienced youth sailors express a sense of enjoyment and experimentation. It is a factor in sailing that portrays both promotion and a barrier to participation in the sport. More often than not, it is due to capsizing that sailors end up in the water. Two participants mentioned a worry concerning water related issues. The first was;

'Because the first time the waves were splashing into my eyes…'

This discomfort will be due to the saltwater splashing in the eyes and causing them to sting. In freshwater locations these issues should be decreased as the water should not sting if it makes contact with the eyes. It may impair vision due to splashing which can obstruct vision during sailing for both freshwater and saltwater locations.

Water was also worry or dislike of sailing due to the temperature. When asked if the participant had any dislikes of sailing, they responded;

'Well, the idea of getting cold in the water'.

Sailing, although predominantly a seasonal sport and only taking place wholeheartedly from April to October, the temperature of the water can be off putting and catch even experienced sailors off guard if they were to fall in. Therefore, RYA website provides some information regarding the effects of cold-water shock and advice that the use of life jackets could prevent death in these circumstances (Royal Yachting Association, 2018).

Injury

Injuries in sailing can be relative to the experience and ability of the sailor. Elite Olympic level athletes are more likely to experience chronic injuries. A chronic injury is developed through overtraining or poor technique (Brenner, 2007). These types of injuries can be found in long distance, endurance or repetitive action events such as tennis elbow in tennis and shin splints in running. In terms of sailing, chronic injuries are reported to source from the lumbar or thoracic spine (Neville and Folland, 2009). In cases of a combination of poor hiking technique and inadequate leg strength the knee is predisposed to chronic injury symptoms (Neville and Folland, 2009). For the novice sailors, typical injuries include abrasions or acute injuries. The nature of acute injuries are impacts that occur suddenly, usually in the manoeuvring process of the boat. The term injuries in the current interviews with the 12 participants have been identified only in its acute form. As expressed in the quotes below, a common injury presents itself in the form of an impact to the head with the boom, which is the metal horizontal pole at the foot of the sail, which moves in relation to wind and dinghy positioning.

'Well, the only thing I didn't like was that the boom kept hitting me on the head which I really didn't like'.

'I found it quite irritating because I kept bumping my head'.

Clothing

Due to the conditions that sailing takes place in, the appropriate clothing should be worn to ensure the safety of the participants. The clothing worn is dependent on a combination of weather conditions and sailor's ability. Buoyancy aids are compulsory to wear when using any equipment from facilities such as centres. The buoyancy aid is a floatation device that should a sailor fall into the water it will enable the body to float at the surface of the water unaided. Alternatively, a lifejacket could be worn. Unlike the buoyancy aid, a life jacket will ensure the participant floats face-up due to the internal positioning of floatation. The RYA cannot control the wear of buoyancy aids therefore they promote the following advice;

'*You can base this decision [of wearing a buoyancy aid] on factors such as weather conditions, the type of activity you are doing and your level of experience. If you are a beginner or still relatively inexperienced, making these judgements is often not that easy, so if this is the case, wear one at all times.*'

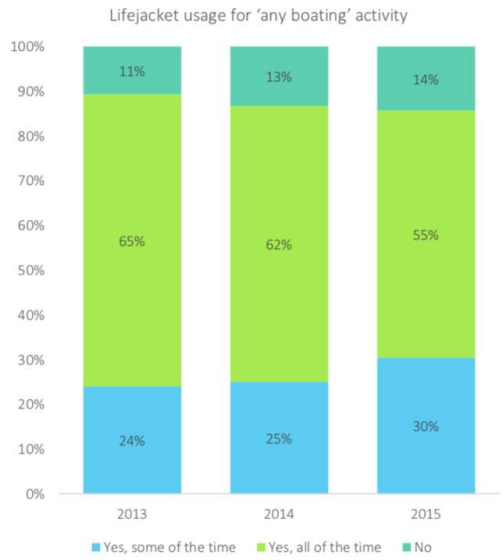


Figure 5.1 Representation of Lifejacket Usage for Any Boating Activity Sourced from the Water Sports Survey (Arkenford, 2017), Reproduced with Permission.

As mentioned in injuries section, a lot of children experience contact with the boom and their heads. Due to a number of hazards in the area, for example, walking through boat parks, the

boom or other parts of the boat whilst sailing, a helmet is permitted to wear in most settings. If the location is run by the RYA, any youth under the age of 18 years must wear a helmet. The only exception is for those who have achieved Stage 3 or further as it is believed they have sufficient sailing skills to prevent head injuries. The stipulation of the looking 'cool' vs safety decisions does not seem to affect the attitude of sailors who are permitted to wear them. From a safety point of view, it is positive that wearing a helmet whilst sailing has not had as much negative attitudes compared to wearing bicycle helmets.

In DiGuiseppi and colleagues' (1990) study, of 931 children who owned bicycles only 24% owned helmets and only 56% actually wore the helmets. From the population of children who did not wear helmets (972 children), 25% did not because their friends did not, and 16% did not because they found the helmets uncomfortable. However, this study was published in 1990 and since then bicycle safety programmes have been developed to improve the knowledge and awareness of safety whilst riding to school (Hooshmand *et al.,* 2014). The biggest contrast between the differences in attitudes towards helmets is that there is no law in the UK permitting helmets to be worn and no policing or organisations monitoring and/or prosecuting. Whereas, in RYA centres it is compulsory to wear helmets for novices and therefore participants must comply in order to participate.

The final clothing to be discussed which was described by participants as '*soggy and wet'* are wetsuits. As this study was conducted in the UK, wetsuits are customary equipment for sailing sessions, however in warmer climates they are not as necessary. Often the discomfort of firstly getting the wetsuit on can be a deterrent to participation. One participant recalled their experience of wetsuits as;

'... I didn't like the wetsuits though because they were sometimes, they usually had the wet things, and they irritated the bottom of my legs, so I had to get my own one, so it was dry every time.'

If the participant was able to overcome getting into the wetsuit, they then had to endure the session whilst wearing them too. The wetsuits have been shown to be a prevention in participation for those who are body conscious and have low self-esteem due to the tight-fitting neoprene material (Wright *et al.,* 2005). As uncomfortable as the wetsuit can be, it serves an important role in water-based activities. By providing warmth to the participant. Between the skin and neoprene, a thin layer of water will warm as a result of being heated by the body temperature of the participant. This process prevents the onset of cold-water or weather induced illnesses such a hypothermia.

Weather

Being a weather dependent sport, sailing relies on suitable weather conditions for safe participation. Sailors from an early stage have identified the weather as barriers to participation. A couple of interviewees mentioned how unpredictable the weather can be and the effects it can have on participation;

'the wind is very unpredictable , the weather is very unpredictable so like um sailing is a very weather reliant sport.'

'... the fact that like the weather is not 100% reliable so the sessions can be cancelled quite easily.'

Pluijms *et al.* (2015) addressed how the experience of the sailor can affect the ability to adapt to the wind conditions. The more skilled sailors were found to utilise the wind more efficiently compared those possessing less skill. Distinctly, higher skilled sailors were also able to perceive wind direction in low winds and act retrospectively in the sensitivity of controls

needed for optimal performance. Particularly for those completing qualifications or courses, the tasks required to achieve in order to complete the course can be hindered by the weather conditions. Most courses require sufficient time on the water to practise and execute the tasks, however, if the weather conditions are not suitable the time on the water may be limited, as highlighted by an interviewee;

'Like I said the weather, …if while I'm doing the course there isn't enough wind, or if the wind is too strong for example and you can't go out, then I might not be able to get the hours on the water for the course'.

The barriers posed by weather conditions can also have an effect on the confidence and self-esteem of the participants. One sailor mentioned their battles in high winds, even with the adaptions to de-power the sail (reefing), they still believed that due to their experience, weight and high winds they would be unsuccessful on the water.

'Umm sometimes if it's just really windy and even though I've got reefs in I just can't take it…Umm it's experience and it's my weight because I'm quite light so even if I did say have 3 reefs in a Pico I would still be capsizing a lot'.

The same interviewee however showed verbally indications of nervousness and lack of self-esteem as they later on went to describe their session as a positive impact as they had done better than they thought they would have.

Outside of sailing participation, Spinney and Millward (2010) found that inclement and uncomfortable weather conditions such as thermal and mechanical comfort can pose as barriers to being physically active. Due to the conditions, this can lead to adopting sedentary and home-based leisure activities instead leading to poor promotion of leading active lifestyles. In support, there has also been associations between seasons and physical activity (Tucker and

Gilliand, 2007). Several attributes such as daylight hours (Goodman *et al.,* 2012), temperature and precipitation rates can affect the leisure activities chosen by individuals. Therefore, as a result, spring and summer seasons where generally there is more daylight hours, higher temperatures and less precipitation showed increased rates of active leisure compared to the autumn and winter seasons (Tucker and Gilliand, 2007). Sallis *et al.* (2010) supports these observations further as those who spend more time outdoors are more likely to be physically active.

Time Consuming

The structure of a sailing session requires preparation time for participants to sort themselves and the vessel ready for launch. Likewise, with the pack-down and storage of both dinghy and sailing equipment or clothing is needed. The preparation for sailing is arguably more time consuming than other mainstream sports. Furthermore, the sport as noted in Cotterill and Brown (2018) is one where you cannot just stop and start. The preparation of landing and ensuring your boat is moored or ashore safely adds more time compared to picking up and ceasing football training. Due to these time constraints, the duration of sailing sessions are conceivably longer giving time for preparation without taking time away from practise and therefore pose a time-consuming barrier to participation.

Location

Another deterrent to sailing participation that has been prominent is the specialised location required for the activity to take place (Cotterill and Brown, 2018; Anderson and Harris, 2003). Although dinghy sailing can be hosted in both suitable coastal and inland waters compared to mainstream sports the access to locations is deemed more difficult than others. For example,

football could be played in a back garden, park or quiet street, whereas sailing is needed to be at a suitable lake, river, reservoir, or harbour limiting the places available.

In conjunction, travelling to the sites often requires transport from school, family or local means. For the younger children this incorporates potentially another barrier as they must be accompanied by an adult willing to transport them. One child travelled approximately 90 minutes to get to their sailing centre, which included at least 2 means of public transport and 3 changes. The dedication shown by this certain sailor illustrates how much value they place on their opportunity to participate in sailing at their centre. This exceptional individual is contrast to research by Pietilla *et al.* (2015) and Wheeler *et al.* (2012), where they found that physical activity was negatively correlated to distance of outdoor green space for physical activities. Therefore, the closer the access the more likely individuals would be to lead active lifestyles.

Instructor and Management Choices

The relationship between instructor and participant is dependent on the situation. Where safety was of concern participants turned to instructors for reassurance, help and guidance (Anderson and Harris, 2003). Those who had trust in their instructors felt safe and found enjoyment and satisfaction from the session. In contrast, some had idolised perceptions of an instructor who were not 'bossy' and allowed them to gain a sense of experimental learning. The use of a variety of vessels was also desired, especially as the skill of the sailor progresses. As mentioned by an interviewee, if the desired opportunity of specific vessels is not satisfied it could stimulate a lack of interest in participation especially with a wide range of dinghies available for youth.

'We don't really get to sail the boats that we want to'.

The select dinghies should be chosen by the instructor or management to serve the appropriate purpose to the group or individual attending. Sailing in RYA facilities are conditioned to

specific ratios of people or vessels to instructors. For single handers (1 person per dinghy) there is a ratio of 6 participants to 1 instructor. For double handers (2 people per dinghy) there is a ratio of 9 participants to 1 instructor, but no more than 6 vessels per instructor (RYA, 2011). Weather conditions and skill of the sailors can determine how controlled the group are whilst afloat. Some interviewees felt that bigger groups disadvantaged their time and guidance from the instructors;

'Umm, maybe like when there is a big group of sailors it's not so good because you don't necessarily have contact with the instructor so much'.

This quote may support growing evidence as to why the prevalence of experimental learning is apparent in sailing (Humberstone *et al.,* 2003). Although further research is needed to clarify, it could be proposed that those who learn in higher ratios are more likely to be exposed to experimental learning more than those who learn in lower ratios of instructor to participants.

Priorities of other sports

There is a clear barrier of access and time to participate in sailing for some wanting to get involved. Thus, it is not surprising that other mainstream sports can have a priority of attendance over sailing. Often mainstream sports do not possess the same barriers as sailing, or if they do, not to the same degree. For example, one participant explained his preference of sport to attend;

'I used to do hockey but it's not on Sunday anymore so that's why I do sailing but I might stop doing sailing if hockey comes back on'.

Others, however, prioritise sailing over any other activity. It could be argued that sailing can be associated with one's identity as represented in the social identity theory (Hogg, 2016).

This demonstration of dedication and prioritisation of sailing can be seen especially from one participant who describes their attitude towards attendance on a Sunday and was asked about if anything ever interrupted his attendance;

'Not really, it's just I always make sure the morning of my Sunday 9 till12.30 is free. I always make [sailing], that's the only thing because I do like sailing a lot and I don't really want to miss it! So, I always make sure that, if we have anything planned in the morning, I just want to move it just a little bit more just so I can go sailing…'

Trends in Sailing Pathway and Ambitions

Due to the population sample gathered from a small variation in location, low number of participants (12), motivations of participation often related to one or more factors, the study was unable to determine any trends of sailing pathway. However, given the qualitative results each area can provide descriptive data in the aim that future research can rectify.

Entrance Factors

The average entrance age into sailing was 6.8 (± 1.53) years old. There is no direct comparison available however, in comparison to other sports who progress to high achieving athletes from Ericsson (1996), wrestling had an average starting age of 13 years, and ice-skating participants had to start by 8 years old at the latest, and an average age of 11 years for golf. Therefore, considering these sports and their average starting age, sailing can facilitate participation for younger children. Thus, starting age may differ depending on performance potential within specific sports and show poor predictors of who makes it as a professional sports player or who remains in a sport for recreational purposes. Hence future studies should differentiate between the importance of starting age for those of a more participatory nature.

The attendance to centres was prominent for entrance into sailing within the twelve interviewed participants, ten of whom began sailing with centres compared to any other establishment. One participant started sailing through a club and one participant entered the sport through attending a summer camp, which had facilities to deliver dinghy sailing. Another factor to consider is that the current study participants started sailing across four different countries (Poland, Canada, New Zealand and UK). Anderson and Harris (2003) note that clubs will consist of participants usually owning their own vessels and facilitating the club as a means of storage and socialising, Usually, but not limited to, clubs will be formed of sailors who are experienced sailors who participate in leisure sailing or racing organised by the club. Entrance into clubs is often only through association with those who are already members and can therefore be perceived as exclusive. Whereas centres are places where participants come to hire boats and also have the opportunity to gain official qualifications. It is more often facilitated by new participants within the sport or those progressing either in skill or vessel type.

It should be noted by the sailing organisations, from the current study's findings and supported by Anderson and Harris (2003), to increase its sailing participation rates, focus should be on the work and development of centres. In the result of centres already facilitating newcomers into sailing, the focus should be on investing in clubs to make them more accessible and approachable to new participants.

Reasons for Sailing Participation

The reasons for sailing participation are classified into qualifications, racing and leisure. Participants expressed either to be solely motivated by one sailing reason or alternatively showed interest across two or all three reasons as stated by this female participant;

'Well, sometimes, only sometimes I don't feel like racing, I don't enjoy racing at times. Sometimes its leisure and sometimes its racing and its swapping round them….'

Qualifications

The opportunity to gain qualifications in sailing for a successful sailor provides a sense of achievement whilst gaining an internationally recognised qualification. The choice of qualifications begins for youth sailing in Stages 1, 2, 3 and 4 which then specialise into seamanship skills, day sailing, sailing with spinnakers and performance sailing. Lochbaum and Gottardy (2015) found that mastery-approach goals and performance effect size was significant. Although, the RYA qualifications were not included in the review by Lochbaum and Gottardy, the qualifications would be classified as mastery goals as for each stage progresses in skill mastery.

Many participants enjoyed the aspect of learning, progressing, and being challenged as a promotor in sailing participation, which is detailed previously in the discussion. For some, they understood the role of gaining qualifications and most importantly in the correct sequence;

'…because if you get [Stage] 1 and then you get [Stage] 3, you just miss a block, so it'll all topple when you get higher it'll just go puft. Like with building blocks you have to build up the basics before you can get, so you have to get a strong base then it gets thinner and thinner as it gets to the top.'

Racing

Racing connects the competition element into sailing which many participants associated with. Seven regattas were mentioned including Class Nationals, IAPS (Independent Association of Prep Schools), NSSA (National School Sailing Association) and Bart's Bash. All of the regattas focus on different elements. For example, the Class Nationals will be run to identify the highest performing sailors in a single particular class. In this case the Tera, Feva and

Optimist Nationals were noted by participants. Furthermore, school associations can run regattas which include IAPS and NSSA. These regattas will consist of selected students to represent their schools. In contrast, Bart's Bash is a global regatta which is unique as it allows any type of sail vessel to participate.

Competition in youth sports can allow children to learn physical, mental, social and cognitive skills (Choi *et al.,* 2014). Not all competitive experiences are positive and therefore it is important to consider a balance for youth participating in competitions as it can cause participants to perceive themselves with less competence and display less intrinsic motivation when they are not rewarded top performer (Vallerand *et al.,* 2010).

For some their purpose for regular sailing sessions was to improve aspects of their racing performance. Many were able to analyse and create targets and action plans for improvement such as;

'When I'm racing, I try to stay in the middle of the group so I'm not really far back but I'm not really far forward.'

and

'... well next year I'm hoping to do more races so I really wanted to come down and do race training so I can get better at racing'.

Leisure

The leisure aspect emphasised aspects of fun, enjoyment, relaxation and experimentation, all of which are promotors of participation. One participant noted that they sometimes spent time on the water in a leisure capacity as;

'I honestly like I enjoy bobbing around in a boat'.

It could be argued that leisure physical activity may not be as demanding as practising for racing or gaining qualifications. However, even though the participant may not be receiving optimal physical activity benefits they may instead be benefiting from mental wellbeing aspects such as stress relief, increased self-esteem and improved social interactions (Eime *et al.,* 2013). Some of the leisure experiences mentioned also detailed spending time sailing with family and friends and how this too can be beneficial to mental wellbeing.

Future Aims

Every interviewee was asked to name an aim, the only specification was that it had to be something within their sailing. From the aims given, they were organised into different areas and classified into short- or long-term goals.

The short-term aims were organised as the aims that had the potential to be completed within the current season. They orientated around three foci: qualifications, performance or technique and experiencing a specific type of vessel.

Qualification aims included gaining Stage 3 and completing an advanced module. The technique and performance focus included improving knowledge and racing strategies and techniques. Lastly, the desired type of vessels are Laser Radial, Wayfarer and Topper. In retrospect to these aims, it could be argued that the aims coincide with the reasons for sailing covering all leisure, qualifications and racing motives.

The long-term aims were any that were perceived to take longer than the current season. There were two classifications of long-term vessels: sailing ambition and career/ role. The sailing ambition aims consisted of striving to be in the Olympics and sailing across the Atlantic. To

be in the Olympics clearly represents an emphasis on racing motivations in sailing whereas crossing the Atlantic could be considered elements of both leisure and qualifications. This is because the experience itself may be more leisurely however, specific qualifications may be necessary.

Sailing roles or career aims included becoming a young leader, assistant instructor, dinghy instructor. A young leader is one who accompanies an instructor with no effect on ratio and can help those of lower abilities. An assistant instructor allows for a slight increase in ratio, they will shadow the instructor and where suitable may lead parts of the session under supervision. A dinghy instructor is a qualified to teach all youth and adult courses with extra training for higher performance or specificity such as power boating. The children identifying these aims indicates how they view their instructors as role models and aspire to be alike.

Positive Impact of Sailing

Environment Exposure

The current findings show that the environment surrounding sailing is mentioned as both a promotor and barrier for beginner sailing participation however for long-term participation the environment is only perceived as a promotor. The worry of participating, including capsizing and water seem to be eradicated in the progress from starting sailing to regular participation. Clearly, the environment of sailing, after overcoming the mis-preconception for starting sailing, is a positive impact and experience on children.

In addition, the exposure to the environment made some sailors more aware of protecting the environment and what constitutes actions that help protect and actions that can contribute to environmental issues such as;

'[when sailing] you're not harming the environment at all, because they[friends] just sit at home playing video games then you are [harming the environment] because you're using electricity'.

This awareness and education in protecting the environment can be gained from being present in such surrounding (Sandell and Öhman, 2010). The recent emphasis in reducing the amount of plastic causing issues in the sea such as the 'Wave of plastic' on the coast of the Dominican Republic (BBC News, 2018). In conjunction with the drive for transforming one-use items into re-usable forms and placing a cost on plastic carrier bags (Department of Environment Food and Rural Affairs, 2018). One could argue that sailing could become an educator for environmental sustainability and protection.

The environment that sailing requires is represented as the blue environment. The exposure to this environment is documented to have several health benefits particularly to mental wellbeing (Finlay *et al.,* 2015). However previous research has only been focused on with an older population. The benefits of this environment for children are unclear. Although, it may be reasoned that similar effects may occur for children and young people also, it is not yet confirmed. Other investigative sailing research has promoted the unique setting of sailing and have conjointly concluded that sailing participation can improve mental wellbeing aspects (Cotterill and Brown, 2018; White *et al., 2016)*.

Contrastingly, the environment that the participants are exposed to can also be perceived as dangerous. This outlook entails a greater sense of risk taking whilst participating in sailing. This sensation appears to be prominent in starting to sail compared to any other time. This can be justified as a beginner sailor is challenged to gain the knowledge and practical understanding

of controlling a dinghy in a short period of time. In particular, capsizing is deemed as a noticeable risk-taking activity within sailing. However, it is unclear as to whether it is personality and children's characteristics or sailing ability that perceives capsizing as risk-taking. What can be taken from this study is that there is a clear transition of capsizing from worries with beginners to likes with regular sailors.

Improved Mental Wellbeing

In conjunction with the exposure to the blue environment, the mental wellbeing of children is believed to be improved. Several qualitative studies, including the current study, have found highlighted mental wellbeing aspects or changes in variables such as competence, self-esteem, stress relief and confidence (MuCulloch, 2007; Cotterill and Brown, 2018; Feltz, 2007). Firstly, the participants addressed what they believed to be positive impacts from participating in sailing including confidence;

'it's made me feel a lot more confident in myself'.

'Having a lot more confidence and being able to speak up.'

Self-esteem;

'Umm like woah it's not as bad as I thought. I thought I'd be turtling or capsizing all the time!'

Stress-relief and relaxation;

'It's given me some sort of escape from the like, the studying for GCSES and that. It's quite nice just to have that, like when you're not thinking about it';

'It makes me feel calmer and relaxed and you not stressing about stuff really';

'Umm I don't know quite how to explain it, but I feel like, umm, like it clears you mind. I don't think about anything else except what I'm doing in the boat.'

The mental wellbeing benefits of the blue environment and its positive influence on stress and relaxation for adults is prominent (Finlay *et al.,* 2015), although not within child populations. Furthermore, it has been addressed how physical activity and sport can have stress-relieving elements (Kaiseler *et al.,* 2009). Thompson Coon *et al.* (2011) has reviewed that there are promising self-reported mental wellbeing improvements in adults, most of whom were young adults, that only occur after outdoor physical activity (e.g., walking or running) and not indoor. Thus, future research should extend and assess a sport that is conducted in the blue environment, like sailing, and see if it has greater stress relieving impacts on participants than green environment sports and/ or non-sporting activities completed in the blue environment.

Improved Physical Wellbeing

In the current study it was not feasible to directly measure physical wellbeing. However, verbal accounts from participants often compared themselves to other classmates or friends. When asked about strength and fitness most responses were united in deciding that they were stronger and fitter than their peers. In more depth, when asked to compare themselves to a friend, many were able to determine that they were more active due to sailing and could also identify sedentary activities that they have avoided due to sailing. For example;

'Being active and not like spending time on phones and devices';

'it's also meant I can get out of the house more because when I didn't really sail, I used to only really be in the house and didn't really do very much.';

'... so, I could go [sailing] so I would usually be sat at home playing on my computer now or my iPad or something.'

'It keeps me fit and healthy, keeps me busy'.

To acknowledge that these sailors are recognising their type of activity that they complete, they are able to differentiate between sedentary and physical activities and also associate sailing with improved physical wellbeing. Sailing research has mainly addressed the demands of elite sailing and the physical requirements (Bojen-Møller *et al.,* 2015). However, youth sailing has had a fraction of focus with only sparse studies (Cotterill and Brown, 2018). On the contrary, general sports participation and its numerous benefits may also replicate these benefits of sailing with more direct and focused research.

Social Skills

The society of sailing is one that has been mentioned by several interviewees. Some comment on the staff and surroundings whereas others comment on who they sail with. In the current study social skills were found to develop through three main relationships. The first between children and instructors/staff, another between their peers who they sail with either on the water or in the same dinghy and finally the social skill development between children and their family and friends who are also involved in sailing.

The relationship between sailors and instructors varies. Identified earlier in the report, the instructors play an important role throughout sailors' experience in delivering knowledge and expertise in times of task orientated activities. This is especially important for beginners who have little sailing experience. The relationship is also enhanced at times where participants perceive safety fears or loss of control and look to their instructors for reassurance and help. An interviewed sailor described the scene as;

'it's quite a nice community and you can socialise, and mix and make friends, and that in it as well.'

Another social skill is the ability to work with others. Some sailors identified that sailing with peers was a good chance for them to socialise and also provided a comfort to have someone else in their dinghy to clarify technique and task objectives. The ability to work together also brought out good sportsmanship skills. Some were able to become role models for younger sailor or the less able, whereas others appreciated the ability to sail together and independently. Interestingly, one sailor was able to distinguish differences between sailing and other sport such as football noting how they believed sailing possessed greater respect within competing;

Yeah, I'd say I have good sportsmanship and because in like football and that it's not necessarily the best sport and I think sailing is a lot more respectable than that.

Finally, many sailors were encouraged to start sailing by family members. As a result, some sailors found that they consequently had something directly in common with their family members. They were able to converse about sailing experiences or sail together as part of a family activity. Family support in sport participation is essential in maintenance of participation for children as previously explained.

Life Skills

Sport can provide a great range of skill accruement which can be transferred into life skills to not only assist the participant in their chosen sport but also in everyday life.

To begin with communication was a life skill that was declared by several participants.

'Oh, I'm much better at communication because I used to be really shy, now I umm sailing has taught me that communication is very important even if it's just body language.'

The communication has also been identified by one interviewee that due to their confidence increasing, they are safer and can express their feelings easier. In the environment that sailing takes place this is an important factor for the children to consider and be aware of their safety and others around them. As one participant said;

'So umm if you're angry you need to express it, so you don't hide your feelings. You should never hide your feelings and ... umm ... you need to speak if you're cold because if you're cold then obviously you need to tell someone otherwise you umm being cold if very dangerous sometimes.'

Communication is also a vital skill to have to develop teamwork. Working together as addressed previously is an effective skill to possess. The communication can lead to better teamwork with staff, parents or other sailing peers. When sailing in double-handers communication and teamwork is important to ensure all crew on the dinghy is ready for the actions led by the helmsman (steerer).

In contrast, sailing can also provide an opportunity for independence. Many participants spoke about how they enjoyed working by themselves and having sole control of the dinghy. Sailing is unusual in the sense that it can provide both teamwork and independent activity. The following quotes is from a participant who is describing themselves to their friend and feelings of independent sailing;

'I think umm there's quite a lot of things they [friend] really don't have that I have, is freedom when you sail and to meet other people to get involved to just have fun.'

'[sailing individually is] a bit more independent, I have to sail a boat by myself, and I like that feeling.'

Other skills associated with sailing is awareness. This encumbers problem-solving and decision making. Since sailing is conducted in an unpredictable environment in terms of the weather and water conditions, participants must also be aware of other dinghies around them. Participants when racing are required to sail around a course, yet the path they choose to sail is solely down to them. A poor decision may result in low rankings and/ or collision with another dinghy. There are several factors the sailors must consider performing at their optimal

level. In the result of a poor decision the participant may be required to problem solve to reduce the impact on their performance. One participant described their abilities as;

'*... well, when I'm on the water I have to be observant and know where I'm going, what the wind is doing and where the other boats are so I don't crash. I have to know it all and plan…'*

For some the skills they had developed weren't necessarily due to being on the water but were more related to planning, timing and preparation. For one participant who was very committed to attending sailing and had one of the furthest commuting times noted the skills they had developed and how;

'It's made me plan ahead so we have to know what trains or buses are running late or cancelled so we get here[to the sailing centre] on time. ... I'm organised, I get my bag ready the night before so I don't have to do it in the morning and that will have all my kit in ready for the morning.'

The ability to plan and be organised will not only be an asset for this particular sailor to attend their sessions but could also be a life skill that is transferred to when he becomes employed as time keeping and being organised is a desired quality to have from many employers.

School/ Career Assistance

In the current study the participants were able to identify some areas where their participation in sailing had aided them in school or career prospects. One participant noted how they believed participation in sailing led to more than just the physical demands and said;

'I think sailing is a lot more academic than like brawn and strength and that. It's good and it's healthy'.

The collaboration of incorporating academia into sports is a bonus, especially if sports are more appealing to those less academic. Specifically, geography was a subject that some participants had greater interest and knowledge in due to sailing and becoming aware of tides, weather and the impact on performance.

In regard to career assistance, multiple sailors desired to become instructors and or assistant instructors as a means of employment when they turned the required age. Having developed the skills to sail competently and developing skills associated with mental wellbeing, physical wellbeing, social and life skills, some sailors will set themselves up and be more than suitable for respective water sports roles. In contrast, those who have determined a career in another domain may have learnt life skills, which would be transferable and desired in their chosen career path.

Negative Impact of Sailing

Social

Although there have been multiple accounts of sailing allowing new friendships to be formed and developing a connection between family members, there are also a few statements within interviews that suggest sailing can be restraining for pre-established non-sailing relationships (Killen and Rutland, 2011). As many interviews implied, they were aware of the social meetups and or events and would often be present, however their sailing was a priority and therefore they ensured that the event did not coincide with sailing. If it did, some were able to stipulate that they would prioritise sailing over their presence at a social opportunity (Collins, 2014).

Time

In conjunction with the social planning, time is a potential negative impact of sailing. Firstly, the time required for sailing arguably is greater compared to other sports. This is justified as sailing depends on specialised equipment and a specific environment, and in particular suitable weather conditions in order for safe participation. The time taken to commute to the suitable environment can often be further than facilities for other sports. As Wheeler *et al.* (2012) identified the greater the distance to the facilities the less likely individuals will participate. In

addition, the access to such facilities can deter participation as transport off the route of public transports immediately restricts those who can gain access.

With all the above time barriers to participation noted, it can inevitably cause negative impacts on other areas in the lives of participants. One interviewee spoke of how sailing could sometimes interfere with his attention in school;

'I don't struggle with it but sometimes I have a lot to do, and I want to go sailing so I have to get my homework done first but I find time. Sometimes when I'm at school though I'm tired because I come sailing on a Monday night and we don't get back very early so the next day I'm tired so I sometimes might fall asleep in class'

However, even with such time restraints identified, as mentioned in the life skills section, this provides an opportunity for the participant to develop organisational skills and the ability to plan and anticipate consequences.

Expenses

Participating in sport is often associated with a varying cost accompaniment. Some sports are perceived to be greater cost than others and unfortunately sailing is one of them. The higher costs are due to the equipment, environment and instructors for the sessions to run. Particularly, for low-income families the associated costs in order to participate can present a detrimental barrier to participation (Holt *et al.,* 2011). The costs were also identified by an interviewee;

'Yeah, but sometimes when it gets, when my mum doesn't have enough money she has to get more money and stuff".

As a result of higher costs compared to other sports, sailing is cited as a middle to upper class sport (Anderson and Harris, 2003). This impression on non-middle to upper class members can also act as a barrier in participation as they feel socially unaccepted.

The RYA and other sailing organisations have noted several barriers into participation and in response charities such as the Chesil Sailing Trust and On Board have set up sessions. These sessions are run for as little as £5 per child which enables a greater range of children to participate without having the barrier of costs affect them.

Limitations

While there are many positives of participating in sailing for young people, the negative impacts of participating include time, expenses, social restraints and injuries as mentioned. Not only this but specialising in sailing and reaching higher performing events requires more time, social restraints, expenses and greater risk to injury. Two interviewees in particular had received a scholarship, which allowed them to attend a school that encompassed sailing into their curriculum. However, although this opportunity allows the children to develop their sailing they were restricted in other areas as one child informed;

'...when I go to my new school, I won't be able to do tournaments in other sports.'

Therefore, to pursue higher performance the children may be required to sacrifice opportunities in other areas, which may also include experiences outside of sport too. Early sport specialisation has resulted in contrasting opinions in research (Cote *et al.*, 2009; Balyi, 2001). Some children who specialise early reap the success later on such as Tiger Woods, and the Venus sisters, whereas for others it may cause 'burnout' in athletes and lead to participation terminating (Kaleth and Mikesky, 2010). In 2013, 19-year old footballer, Raheem Stirling was suspected to be a victim of athlete burnout when he requested not to be selected for the starting team in the Euros qualifiers in 2016. His played game time had increased from 615 minutes in 2013 to 1682 in 2016 over the same time period (The Guardian, 2014).

Injuries/ Hazards

When participants were asked about factors that prevented them from participating, one interviewee spoke of injuries and how they can affect their sailing experience and create a more negative outlook. Injuries such as concussion were mentioned such as the following statement;

'*I was concussed and that stopped me from about a month of sailing and I was upset with that.'*

Like with any injured athlete, the effect of the injury occurring, recovery and rehabilitation can have negative effects on the mental wellbeing, as well as the visual physical hindrance (Brenner, 2007).

The prevention of injuries can be overcome by the anticipation and awareness of hazards. Some research studies have summarised that the presence of hazards reduces the amount of physical activity completed in middle class adults (Sallis *et al.,* 1992; Sallis *et al.,* 1997). However, Romero and colleagues (2001) found that while investigating a group of children, an increased presence of hazards was associated with a greater volume of physical activity reported. Most likely, the environments in all the referenced studies have focused upon crime and hazards within the neighbourhood rather than in the sport itself. Nevertheless, Romero and colleagues study began questioning whether the perceived hazards within the sport acts as a barrier or promotion of the sport and requires further exploration.

Considerations

To enhance the ecological validity a wider geographical area would be advantageous. The first limitation to consider should be the group size and source. In addition, investigations into coastal and inland sailors may be a comparison to include, as this variable was not determined in the current study. Another limitation to this study is the source of participants as all were attendees to two centres in the UK. Therefore, presentation of youth sailors has not been

sourced to enable generalisation to the population. In future research including young people who are members of various clubs may offer a greater external validity.

In addition, the recall methods when participants are asked to identify their attraction and worries towards entrance into sailing might have been hindered due to the difficulty of recall. For a more accurate representation of the emotions expressed by participants throughout their sailing experience, a longitudinal study could be better at gathering prospective data. However, due to time restrictions and resources, this type of study was unfeasible at the current time.

Finally, those interviewed are current regular sailors and therefore are predisposed to have a greater attraction to sailing when being interviewed. It should be considered to follow-up interviews with children who may have stared sailing or experienced a taster session who then do not return to the sport, in order to gauge a true representation of the barriers to participation.

Conclusion

In conclusion, this study addressed three important research questions. The first, identification of the most common promotors and barriers to retention in sailing, was addressed in the compilation of entrance and regular sailing attractions/likes and worries/ dislikes. New findings showed that many of the attractions to sailing continued from the entrance through to regular participation. These attractions included; fun, capsizing, being in the blue environment, social settings, and the opportunity to learn. In contrast, the worries/dislikes of sailing did differ between entrance and regular participation.

The second research question addressed whether there was a trend between entrance into sailing and the participant's current or future motivations for participation. This research

question was unable to be determined due to the majority of the group entering the sport through centres. As a result, no discernible association was made between the entrance into sailing and the impact that this can have on future participation. Nevertheless, the findings from the current study do show that sailing centres play an important role for participants entering into the sport. Future focus on increasing sailing participation should be examined in one of two ways; either to develop the centres to ensure optimal range of opportunity to participate and then to focus upon retention of entering participants. Furthermore, focus may be more beneficial to develop other forms of entry into sailing such as clubs or other organisations to optimise the range of entrance and potential retention.

The final research question addressed the most common positive and negative influences on participation in sailing for children. The original findings reported 7 positive areas; environment exposure, improved mental wellbeing, improved physical wellbeing, developed social skills, developed life skills, learnt sailing specific skills and assisted in school/ career ideas. The current study also found some negative areas including restraints in time and social factors, expenses, risk of injury/ hazards, and limitations in sailing performance and other areas of life. However, the negative aspects are often associated with the structure or requirements of sailing sessions rather than sailing per se, for example transport to and from the location, the time taken to set-up and pack down, and the necessary equipment and protective wear.

Chapter 6

General Discussion

The general discussion for all studies will firstly recap the aims of each study and outline the prevalent findings. Following on, any trends highlighted between studies will be identified and discussed. Within the general discussion each of the Sports England focuses will be highlighted and relevant or supportive findings will be associated identifying which study the finding was sourced. Finally, recommendations and future direction of research will be provided before summarising.

Key Findings

Study 1

The aim for Study 1 was to investigate the pre- and post- thoughts and feelings towards a sailing taster session and explore the environmental aspects that could influence results. Findings showed that overall, an increase in happiness and enjoyment was found from pre- to post-taster session. Through gender specification girls reported a greater change in happiness and enjoyment compared to boys who also expressed a more positive utilisation of sport e.g., stress relief and enjoyment. Content of the taster session, particularly capsizing, was a prominent positive and negative aspect highlighted of the session. Environmental aspects such as the blue environment surroundings was also reported in a similar view as capsizing.

Study 2

Study 2 was separated into two sections, the first to investigate the pre- and post- thoughts and feeling towards a beginner 5-day youth course, as well as any environmental aspects or content of the course that could affect results. Results showed no differences or negative differences in morning sessions and no differences or positive differences in afternoon sessions in happiness and enjoyment. The afternoon of the first day for both Stage 1 and 2 courses showed a

discernible increase in happiness. The same session found a discernible increase in enjoyment for Stage 1 in boys and girls. Again, capsizing and the blue environment elements were two factors reported to be both distinct promotors and deterrents in participation.

The second section was to investigate the level of physical activity intensity during a 5-day youth course. Participants accrued 44% of the UK Government's minimum guidelines of 60 minutes of MVPA a day for children and adolescents. An incremental level of physical activity was also recorded in retrospect of the time spent completing the course, e.g., session 1 on the first day displayed the lower levels of PA compared to session 6 of stage 2 on the fifth day. In accordance with previous research, boys reported greater PA levels compared girls in all but one session.

Study 3

The aim for study 3 was to identify the promoters and barriers of retention amongst regular youth dinghy sailors. Investigations to explore a relationship between entrance pathway into sailing and present- and/or long- term ambition in sailing were also completed. Results found positives of beginning to sail includes fun, capsizing, blue environment experience, social settings and opportunity to learn. Opposing negative of beginning to sail includes capsizing, collision, and blue environment elements. Regular sailing found positives including blue environment exposure, improved mental wellbeing, improved physical wellbeing, developed social skills, developed life skills, learnt sailing specific skills and assisted in school/ career ideas. Negatives of regular sailing includes restraints in time and social factors, expenses, risk of injury/ hazards, and limitations in sailing performance and other areas of life.

Summary of Studies

There are several recurring findings and themes across the three studies including; happiness, enjoyment and fun, providing a sense of risk taking and adventure, and finally facilitating participants to get involved in the blue environment via sport.

Happiness and enjoyment have been investigative measures in both Study 1 and 2. Featured in the research questions in both studies, the aim was to analyse the effects of dinghy sailing on participant's happiness and enjoyment across differing timescales. While Study 1 found an overall increase in happiness from participants experiencing a single session, Study 2 identified that Session 2 of both courses showed significant differences. From the data collected it is inconclusive as to why session 2 exhibited such difference in happiness. In addition, the analysis of gender resulted in both boys and girls increasing in happiness, albeit not significantly.

Similarly for enjoyment, Study 1 revealed an overall increase in enjoyment pre- and post the single taster session. In Study 2, the enjoyment showed no change or decrease in the morning session (odd numbered sessions) and no change or increase in afternoon session (even numbered session). This observation was also present when gender responses were analysed.

Furthermore, from a qualitative perspective, Study 3 participants mentioned feelings of happiness and enjoyment, and some noted the sessions being fun as a reason for continued participation. The reciprocation of happiness from participating in sport is also supported by Huang and Humphreys (2012) and Hills and Argyle (1998). Fun, happiness and enjoyment should be factors considered during the delivery of all types of sailing sessions as this could help promote continued participation. Similarly, the delivery of the session can also create a

safe and semi-controlled environment for the participants to experience risk taking and gain a sense of adventure which leads into the next common trend.

Capsizing was an activity that related risk taking and/or a sense of adventure. Interestingly, the event of capsizing was perceived as a potential barrier for new sailors in Study 1 and was often mentioned as a worry before sailing in Study 3. In contrast, capsizing was also seen as a thrill and risk-taking activity. Capsizing had contrasting effects on participants. While many participants enjoyed the adrenaline surge and responded positively, some found the event of capsizing unnerving. The figures from Study 1; 2.11 and 2.12 (Page 45) and from Study 2; 3.0 and 3.1 (Page 67-68) highlight the prevalence of how capsizing is deemed both an appeal and barrier to new or novice participation in sailing. Findings from studies 1 and 2 were expanded upon within Study 3, as it become clear that the negativity associated with capsizing for novices was almost non-existent for regular participants. To understand the effect of capsizing further data collection on those who did capsize and those who did not during sessions may reveal clarity on the matter. For example, is it those who sail but have not capsized that fear it the most or could it be due to personality traits, to determine who likes capsizing and who does not?

In conjunction to risk taking, the sense of adventure may be related to the environment that hosts the activity. Given that dinghy sailing requires suitable waters, the sport also encompasses the blue environments potential benefits, in addition to the documented physical activity benefits. Preliminary research for the blue environment is expanding rapidly and in alliance with dinghy sailing research, the two research areas could combine and expand findings further. It is unclear as to whether the impact of sailing is derived from being surrounded by the blue environment or participating in the sport itself or a combination of both.

However, the blue environment in the current three studies is featured consistently. The blue environment elements are perceived as both positive and negative aspects of sailing. Some participants lack water-confidence, whereas others strive off the thrill-seeking sensation. Others may also interpret the environment as a method for stress relief or relaxation. The effects of the blue environment on children are sparse within research, however it should not be discredited that the effects upon adults could be similar to those upon children.

Furthermore, in relation to current published research there is a large proportion of youth dinghy sailing originating from Scandinavian countries. However, these countries are high performers in sailing events and as a result have only focused upon elite populations in both adult and children's studies. The studies have also had a predominant physiological focus.

Association To A Sporting Future – Sport England

For the future funding of the sport, sailing relies on organisations such as Sport England. With the evidence gathered in these three studies, this next section aims to highlight how the evidence gathered can be associated and connected to Sport England's funding aims.

Sporting Future (Sport England, 2015) was a key report for the focus of this research. The areas within the report outlined funding propositions and therefore it is important to highlight how this study has either provided evidence from the results or alternatively suggest pathways for continued investigation. Table 6.1 represents the important outcomes of the Sport England document and how the findings in the three studies provide support for dinghy sailing's contribution to societal benefits of sports participation. In particular the first three foci of the Sports England document related to physical and mental wellbeing and individual development are well supported by findings in this thesis.

Table 6.0 Research Findings Association to Sport England Focus

Sport England Focus	Sport England Outcome	Findings	Study
Physical Wellbeing	Increase percentage of population meeting CMO guidelines for physical activity	44% of MVPA guideline accrued per day through participation in courses	2
	Decrease percentage of population that are physically inactive	~4 hours of light intensity exercise per day allowing less active to engage easier	2
Mental Wellbeing	Improve subjective wellbeing	Increased happiness and enjoyment from pre to post taster session	1
		Increased happiness and enjoyment in afternoon sessions of courses	2
		Mentions of, or changes in competence, self-esteem, stress relief and confidence in regular dinghy sailing participation	3
Individual Development	Increase levels of perceived self-efficacy	Increased confidence	3
		Increased communication skills	
		Increased organisation	
		Improved awareness e.g., water safety	
		Improved problem solving/ decision making	

Social & Community Development	Increase levels of social trust	Aspirations of sport related career Ability to work with peers and instructors Providing a sense of community	3
Economic Development	Economic value of sport to the UK economy	Transferable skills learnt from sport into everyday life such as confidence, problem solving, communication and organisation	3

Recommendations

Based on the review of literature and the findings within this thesis, it is recommended that the Andrew Simpson Foundation:

1. Promotes the concepts to of fun, thrill seeking and participating with friends to make optimal positive impact on experience in sailing.
2. Allows children to experience and emphasise the importance of the blue and natural environment.
3. Advises instructors to be aware of the balance between negative and positive impact of capsizing and the effects of enjoyment.
4. At the end of every course a short evaluation be completed by all participants related to factors associated with Sport England document particularly as regards mental wellbeing.

Future Directions

The following themes are worthy of further investigation and include:

1. Utilising dinghy sailing in the blue environment to improve mental wellbeing.
2. Utilising dinghy sailing to promote light intensity exercise to inactive populations.
3. Investigating the differences between dinghy sailing compared to other water sports and equivalent land-based sports.
4. Investigating dinghy sailing and development of life experiences and skills e.g., leadership and teamwork.

Conclusion

This study, to the best of the author's knowledge is the first whereby a combination of both qualitative and quantitative data has been collected to investigate the physical and mental domains of dinghy sailing for young people. In summary, the integration of the three studies has provided an original insight into the perceptions and impact of sailing for taster sessions, Stage 1 and 2 RYA course and regular participation.

Dinghy sailing for young people found a number of key mental wellbeing domains such as confidence, stress relief and increase in happiness and enjoyment. Increased happiness and enjoyment were particularly evident in the second sailing session as completed by children from Study 2a. As a result, this set-up should be explored further as this may encourage a need to adapt how and when dinghy sailing is delivered particularly in taster sessions.

Participants not only benefitted from increased mental wellbeing, but this study found that dinghy sailing attributed to the daily physical activity recommendations and provided ~44% of the minimum 60-minute recommendation. It is proposed that regular participation in sailing

would result in enhanced fitness and general physical health such as strength, fitness and endurance as perceived by participants in Study 3.

Key life skills derived from dinghy sailing were highlighted from findings in Study 3. Skills such as confidence, communication, organisation, improved awareness (including water safety), problem solving, and decision making were all exhibited by participants who believed they gained or improved these skills through dinghy sailing participation. These key life skills developed the participant in their sailing performance and knowledge, but also allowed them to transfer into everyday activities, serving as a purpose to acquire such skills and utilise outside of sailing.

Although this study did not investigate behaviour change, suggestions using the results from findings in Study 3 such as the attractions and likes of sailing, as well as the worries and dislikes of sailing coexist and provide more evidence to promote behaviour change to begin sailing or why some may display behaviour to not engage in sailing. The current study was also able to highlight some potential barriers to participation, which should be utilised by water sports and sailing organisations to increase participation and improve retention rates and so evolve sailing to become more accessible, affordable and more inclusive.

Whether it be in the form of attaining physical activity, improving mental wellbeing or allowing participants to experience a sense of risk taking in a semi-controlled environment, dinghy sailing was shown to have a positive effect on young people from a single taster session to long term participation. Therefore, dinghy sailing is well placed to contribute positively to society's need for enhanced physical activity for youth.

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Informed Consent Form for Parents/Guardians

Research Topic: An investigation into the pre- and post- perceptions of a sailing taster session using the Day Reconstruction Model for children (DRM-C).
Principal Investigator: Ellen Blackwood **Researcher:** Ellen Blackwood
Organisation: University of Exeter, Sport and Health Sciences.
Version: #1. 01/03/17: reviewed by University of Exeter Ethics Committee
Participant Identification Number: ID no. _ _ _

1. I confirm that I have read and understand the participant information sheet version #1 dated 01/03/17 for the above study.	
2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily, about my child's participation.	
3. I understand that my child's participation is voluntary and that they are free to withdraw at any time, without giving any reason.	
4. I understand that any information given by my child may be used in future reports, articles and/or presentations.	
5. I understand that my child's name will be anonymised and will not appear in any reports, articles and/or presentations.	
6. I understand that my child will be asked to complete the Day Reconstruction Method for children during their taster session.	
7. I agree to my child participating in the above study.	

Dated:

Print: _____ **Signature:** _____ (Parent/Guardian)

Print: _____ **Signature:** _____ (Researcher)

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An investigation into the pre- and post- perceptions of a sailing taster session using the Day Reconstruction Model for children (DRM-C).
Child Assent Form

Have you read (or had read to you) the information sheet about this project?	Yes/ No
Has somebody explained this project to you?	Yes/ No
Do you understand what this project is about?	Yes/ No
Have you asked all the questions you want?	Yes/ No
Have you had all your questions answered in a way you understand?	Yes/ No
Do you understand that you will be working with people other than instructors?	Yes/ No
Do you understand that people in the research team will have access to your data and you give permission for them to use it in their study?	Yes/ No
Do you understand that any data used will not show that it belongs to you?	Yes/ No
Do you understand it's ok to stop taking part at any time?	Yes/ No
Are you happy to take part?	Yes/ No

If you answer no to any of the questions or do not want to take part then please do not sign below.
If you **do** want to take part then **please sign and date below** and hand back to your researcher.

Your Name:		Researcher Name:	
Date:		Sign:	

Thank you for your help.

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Research Information Sheet **- An investigation into the pre- and post- perceptions of a sailing taster session using the Day Reconstruction Model for children (DRM-C).**

Thank You for showing an interest in our research project in sailing. This sheet will inform you of what we would like to do. Please take the time to read the information to help you decide whether or not you would like to take part in the study.

What is the research about?

We are looking for volunteers to help us study the impact of sailing on wellbeing for young people. Sailing is a sport that for a country surrounded by ocean is an underrated sport even with the latest success in Olympic history and countless golds won in many disciplines. The proposed project aims to gain the perspectives of youth that participate in sailing for the first time, to assess wellbeing in those who uptake the stage 1+2 RYA qualification and to finally gather an insight into the youth's perceptions and their pathway into regular participation in sailing. The data collected will address a broad range of wellbeing including physical, mental, and social components.

Who is taking part?

We will be working with 72 participants aged between 8-13 years who are attending sailing taster sessions across the duration of the season.

What will you be asked to do?

As an individual who has never sailed, we will be asking you to complete three rounds of questions during the session. The first will be a learning style questionnaire which will be given upon arrival to the site. By completing this questionnaire, we will be able to determine your most suited type of learning. The second set of questions will be about how you feel before the sailing session. At this point you will be involved in the session as usual and participate in all the activities provided by the instructors. Once landed ashore from the water-based activities, we will begin the third set of question which will be about how you feel now that you have completed the sailing session. Once again when you have finished the questions you will return to the main group and continue with finalising the session with the instructors.

What are the benefits and drawbacks from participating?
If you choose to participate in the study, you will be facilitating the testing and evaluating on the effects sailing can have on young people. As sailing compared to other sports is neglected in research to date, in particular the benefits it may provide to young people, the results from this study can aid in increasing participation rates and used as a tool to gain more funding for the sport. In essence making sailing more accessible, more cost effective and more prevalent in a greater proportion of people's lives ensuring the presence of wellbeing for many.
The drawbacks from participating are minimalistic as interruption to normal sailing sessions will be discrete.

Do I have to take part?
No. There is no pressure for you to agree to participating in the study. In addition, should you change your mind about participating during the study you are free to stop and withdraw, without having to justify you reasoning, at any point. This will not affect your relationship with the research team or sailing centre and any data or information collected will be discarded appropriately.

What will happen to the results of this study?
All the results collected from the study will be stored securely on a computer (password protected). We plan to write up the findings of the research for publication and present them at conferences and/or workshops. Any information used or presented will remain anonymous and confidential by using a code or pseudonym in replacement for participant personal details.

What do I do next?
If you have any more questions or would like more information on any aspects of the study, please do not hesitate to get in contact with any of the research team via the contact details below. If you have read and understood the study outline and wish to participant please sign and return the informed consent to your teacher, centre staff or research team. We look forward to working with you!

Contact details
Ellen Blackwood: Principal Investigator: eb604@exeter.ac.uk
Prof. Craig Williams: Academic Supervisor: C.A.Willaims@exeter.ac.uk
Dr Alan Barker: Academic Supervisor: A.R.Barker@exeter.ac.uk
Rosie Bain: Andrew Simpson Sailing Centre Staff: rosie@andrewsimpsonsailing.org

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Dated: 22/05/2017

Informed Consent Form for Parents/Guardians

Research Topic: Does Sailing Promote Positive Physical and Mental Well-Being in 8-13 Year olds?
Researchers: Ellen Blackwood Mikey Bowerman
Organisation: University of Exeter, Sport and Health Sciences.
Version: #1. 01/03/17: reviewed by University of Exeter Ethics Committee
Participant Identification Number: ID no. _ _ _

1. I confirm that I have read and understand the participant information sheet version #1 dated 01/03/17 for the above study.	
2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily, about my child's participation.	
3. I understand that my child's participation is voluntary and that they are free to withdraw at any time, without giving any reason.	
4. I understand that any information given by my child may be used in future reports, articles and/or presentations.	
5. I understand that my child's name will be anonymised and will not appear in any reports, articles and/or presentations.	
6. I understand that my child will be asked to complete the Day Reconstruction Method for children during their taster session.	
7. I agree to my child participating in the above study.	

Dated:

Print: _____ **Signature:** _____ (Parent/Guardian)

Print: _____ **Signature:** _____ (Researcher)

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Sailing Promote Positive Physical and Mental Well-Being in 9-13 Year olds? A Study Working In Conjunction With Sport England's – Towards an Active Nation

Child Assent Form

Have you read (or had read to you) the information sheet about this project?	Yes/ No
Has somebody explained this project to you?	Yes/ No
Do you understand what this project is about?	Yes/ No
Have you asked all the questions you want?	Yes/ No
Have you had all your questions answered in a way you understand?	Yes/ No
Do you understand that you will be working with people other than instructors?	Yes/ No
Do you understand that people in the research team will have access to your data and you give permission for them to use it in their study?	Yes/ No
Do you understand that any data used will not show that it belongs to you?	Yes/ No
Do you understand it's ok to stop taking part at any time?	Yes/ No
Are you happy to take part?	Yes/ No

If you answer no to any of the questions or do not want to take part then please do not sign below.
If you **do** want to take part then **please sign and date below** and hand back to your researcher.

Your Name:		Researcher Name:	
Date:		Sign:	

Thank you for your help.

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Research Information Sheet

Thank You for showing an interest in our research project in sailing. This sheet will inform you of what we would like to do. Please take the time to read the information to help you decide whether you would like to take part in the study.

What is the research about?
We are looking for volunteers to help us study the impact of sailing on wellbeing for young people. Sailing is a sport that for a country surrounded by ocean is an underrated sport even with the latest success in Olympic history and countless golds won in many disciplines. The proposed project aims to gain the perspectives of youth that participate in sailing for the first time, to assess wellbeing in those who uptake the stage 1+2 RYA qualification and to finally gather an insight into the youth's perceptions and their pathway into regular participation in sailing. The data collected will address a broad range of wellbeing including physical, mental, and social components.

Who is taking part?
We will be working with approx. 50 members of RYA Stage 1 + 2. All participants will be aged between 8- 13 years old.

What will you be asked to do?
As attendees of the RYA Stage 1 + 2 course you will be invited to take part in this study. You will be asked to wear a device that measures your bodily movement whilst sailing and tracks your heart rate. We would ask you to wear this for all your 5 days while completing the course and can assure you it will not restrict your actions. The other part of the study will be question orientated as we will begin by asking you how you rate sailing compared to other activities. We will also be asking you questions about how you feel and think about sailing session. These questions will happen every day just before you go out onto the water and immediately as you return.

What are the benefits and drawbacks from participating?
If you choose to participate in the study you will be facilitating the testing and evaluating on the effects sailing can have on young people. As sailing compared to other sports is neglected in research to date, the benefits it may provide to young people, the results from this study can aid in increasing participation rates and used as a tool to gain more funding for the sport. Making sailing more accessible, more cost effective and more prevalent in a greater proportion of people's lives ensuring the presence of wellbeing for many.
The drawbacks from participating are minimalistic as interruption to normal sailing sessions will be discrete.

Do I have to take part?
No. There is no pressure for you to agree to participating in the study. In addition, should you change your mind about participating during the study you are free to stop and withdraw, without having to justify you reasoning, at any point. This will not affect your relationship with the research team or sailing centre and any data or information collected will be discarded appropriately.

What will happen to the results of this study?
All the results collected from the study will be stored securely on a computer (password protected). We plan to write up the findings of the research for publication and present them at conferences and/or workshops. Any information used or presented will remain anonymous and confidential by using a code or pseudonym in replacement for participant personal details.

What do I do next?
If you have any more questions or would like more information on any aspects of the study, please do not hesitate to get in contact with any of the research team via the contact details below. If you have read and understood the study outline and wish to participant please sign and return the informed consent to your teacher, centre staff or research team. We look forward to working with you!

Contact details
Ellen Blackwood: Principal Investigator: eb604@exeter.ac.uk
Prof. Craig Williams: Academic Supervisor: C.A.Willaims@exeter.ac.uk
Dr Alan Barker: Academic Supervisor: A.R.Barker@exeter.ac.uk
Rosie Bain: Andrew Simpson Sailing Centre Staff: rosie@andrewsimpsonsailing.org

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Informed Consent Form for Parents/Guardians

Research Topic: An exploration into identifying the retention promotors and barriers of regular dinghy sailing for children and adolescents and the influence of entrance pathway into sailing on sailing ambition.
Principal Investigator: Ellen Blackwood **Researcher:** Ellen Blackwood
Organisation: University of Exeter, Sport and Health Sciences.
Version: #1. 01/03/17: reviewed by University of Exeter Ethics Committee
Participant Identification Number: ID no. _ _ _

1. I confirm that I have read and understand the participant information sheet version #1 dated 01/03/17 for the above study.	
2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily, about my child's participation.	
3. I understand that my child's participation is voluntary and that they are free to withdraw at any time, without giving any reason.	
4. I understand that any information given by my child may be used in future reports, articles and/or presentations.	
5. I understand that my child's name will be anonymised and will not appear in any reports, articles and/or presentations.	
6. I understand that my child will be asked to complete an interview with at least two adults present.	
7. I agree to my child participating in the above study.	

Dated:

Print: _____ **Signature:** _____ (Parent/Guardian)

Print: _____ **Signature:** _____ (Researcher)

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An exploration into identifying the retention promotors and barriers of regular dinghy sailing for children and adolescents and the influence of entrance pathway into sailing on sailing ambition.

Child Assent Form **Circle YES/NO**

Have you read (or had read to you) the information sheet about this project?	Yes/ No
Has somebody explained this project to you?	Yes/ No
Do you understand what this project is about?	Yes/ No
Have you asked all the questions you want?	Yes/ No
Have you had all your questions answered in a way you understand?	Yes/ No
Do you understand that you will be working with people other than instructors?	Yes/ No
Do you understand that people in the research team will have access to your data and you give permission for them to use it in their study?	Yes/ No
Do you understand that any data used will not show that it belongs to you?	Yes/ No
Do you understand it's ok to stop taking part at any time?	Yes/ No
Are you happy to take part?	Yes/ No

If you answer no to any of the questions or do not want to take part then please do not sign below.
If you **do** want to take part then **please sign and date below** and hand back to your researcher.

Your Name:		Researcher Name:	
Date:		Sign:	

Thank you for your help.

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Research Information Sheet - **An exploration into the entrance pathways and identifying the retention promotors and barriers of regular dinghy sailing for children and adolescents.**

Thank You for showing an interest in our research project in sailing. This sheet will inform you of what we would like to do. Please take the time to read the information to help you decide whether or not you would like to take part in the study.

What is the research about?
We are looking for volunteers to help us study the impact of sailing on wellbeing for young people. Sailing as a sport, especially for a country surrounded by water, is an under developed sport, even with the latest successes in Olympic history and countless golds won in many disciplines. The proposed project aims to investigate the perspectives of youth that participate in sailing for the first time, to assess wellbeing in those who uptake the stage 1+2 RYA qualification and to finally gather an insight into the youth's perceptions and their pathway into regular participation in sailing. The data collected will address a broad range of health including physical, mental, and social wellbeing.

Who is taking part?
We will be working with members of Bart's Club/ Race Club/ RYA onboard. All participants will be aged between 8- 13 years old.

What will you be asked to do?
As regular participants of Bart's Club/Race Club/ RYA onboard you will be invited to meet the research team and answer some questions as best you can. We will talk about sailing, how you got involved, what you like about sailing, what you think stops other people from participating like you do and how you would encourage someone to start. This interaction may be done individually or as part of small focus groups. You will only be required to meet with the researcher once and the session will last approximately 1 hour.

What are the benefits and drawbacks from participating?
If you choose to participate in the study you will be helping to evaluate the effects sailing can have on young people's health. As sailing compared to other sports is neglected in research, the benefits it may provide to young people, the results from this study can aid in increasing participation rates.
The drawbacks from participating are minimalistic as interruption to normal sailing sessions will be discrete.

Do I have to take part?
No. There is no pressure for you to agree to participating in the study. In addition, should you change your mind about participating during the study you are free to stop and withdraw, without having to justify you reasoning, at any point. This will not affect your relationship with the research team or sailing centre and any data or information collected will be destroyed.

What will happen to the results of this study?
All the results collected from the study will be stored securely on a computer (password protected). We plan to write up the findings of the research for publication and present them at conferences and/or workshops. Any information used or presented will remain anonymous and confidential by using a code or pseudonym in replacement for participant personal details.

What do I do next?
If you have any more questions or would like more information on any aspects of the study, please do not hesitate to get in contact with any of the research team via the contact details below. If you have read and understood the study outline and wish to participant please sign and return the informed consent to your teacher, centre staff or research team. We look forward to working with you!

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Prof. Craig Williams: Academic Supervisor: C.A.Willaims@exeter.ac.uk
Dr Alan Barker: Academic Supervisor: A.R.Barker@exeter.ac.uk
Rosie Bain: Andrew Simpson Sailing Centre Staff: rosie@andrewsimpsonsailing.org

Interview Questions

Meet and Greet

Name: Age:

School: Grade:

Entrance Pathway

Age at time:

Sail 4 £5 Family Friends Youth Org Other

Sailing Ambition

Leisure Race Other Vessels Unsure Other

Aim:

Entrance

Promotors	Barriers

Gaining Qualifications

Promotors	Barriers

Regular Attendance

Promotors	Barriers

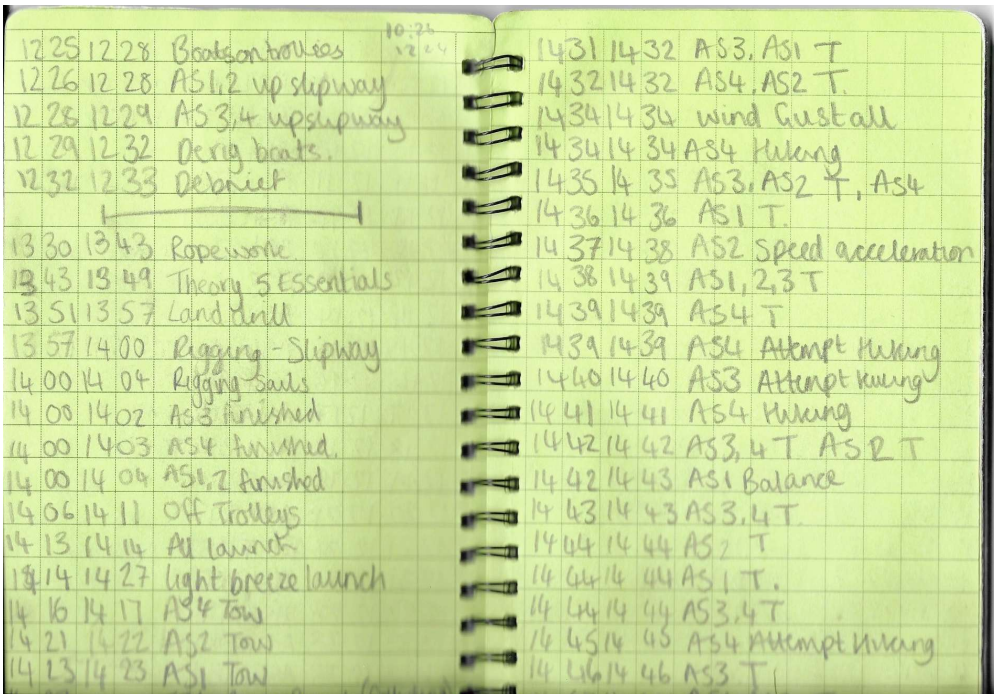
Present Day

Promotors	Barriers

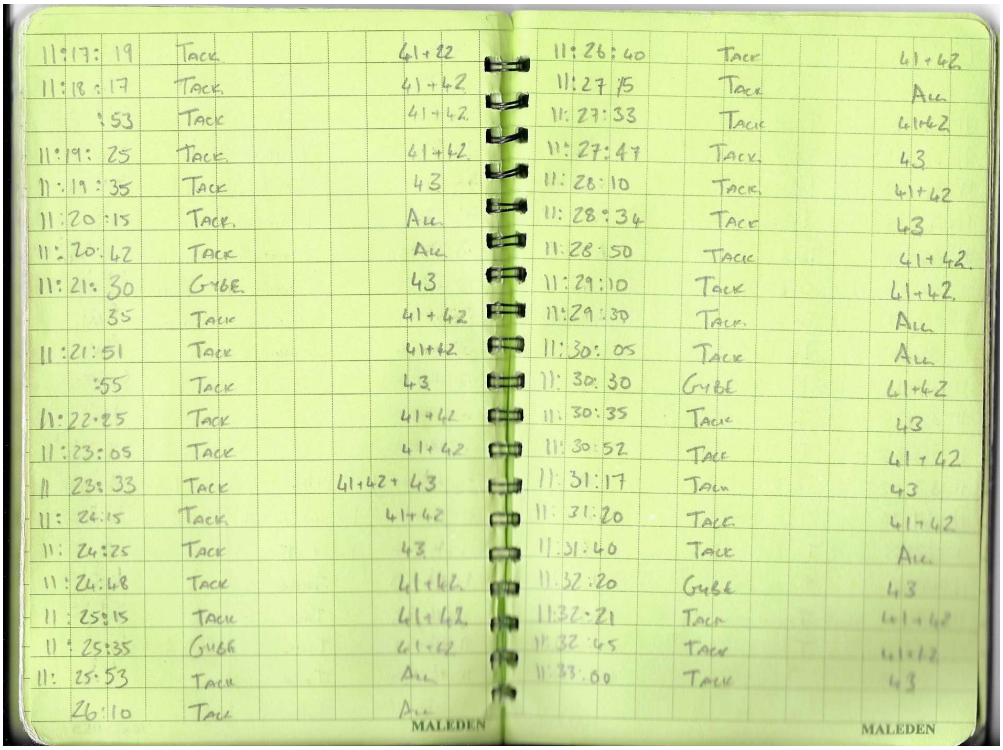
Impact of Sailing

Positive	Negative

Notes



12 25	12 28	Boats on trolleys
12 26	12 28	AS1,2 up slipway
12 28	12 29	AS 3,4 up slipway
12 29	12 32	Derig boats.
12 32	12 33	Debrief
13 30	13 43	Ropework
13 43	13 49	Theory 5 Essentials
13 51	13 57	Land drill
13 57	14 00	Rigging - Slipway
14 00	14 04	Rigging Sails
14 00	14 02	AS3 finished
14 00	14 03	AS4 finished.
14 00	14 06	AS1,2 finished
14 06	14 11	Off Trolleys
14 13	14 14	All launch
14 14	14 27	Light breeze launch
14 16	14 17	AS4 Tow
14 21	14 22	AS2 Tow
14 23	14 23	AS1 Tow
14 31	14 32	AS3, AS1 T
14 32	14 32	AS4, AS2 T.
14 34	14 34	wind Gust all
14 34	14 34	AS4 Hiking
14 35	14 35	AS3, AS2 T, AS4
14 36	14 36	AS1 T.
14 37	14 38	AS2 Speed acceleration
14 38	14 39	AS1, 2, 3 T
14 39	14 39	AS4 T
14 39	14 39	AS4 Attempt Hiking
14 40	14 40	AS3 Attempt Hiking
14 41	14 41	AS4 Hiking
14 42	14 42	AS3, 4 T AS2 T
14 42	14 43	AS1 Balance
14 43	14 43	AS3, 4 T.
14 44	14 44	AS2 T
14 44	14 44	AS1 T.
14 44	14 44	AS3, 4 T
14 45	14 45	AS4 Attempt Hiking
14 46	14 46	AS3 T



11:17:19	Tack	41+42
11:18:17	Tack	41+42
:53	Tack	41+42
11:19:25	Tack	41+42
11:19:35	Tack	43
11:20:15	Tack	All
11:20:42	Tack	All
11:21:30	Gybe	43
35	Tack	41+42
11:21:51	Tack	41+42
:55	Tack	43
11:22:25	Tack	41+42
11:23:05	Tack	41+42
11 23:33	Tack	41+42+43
11: 24:15	Tack	41+42
11: 24:25	Tack	43
11:24:48	Tack	41+42
11: 25:15	Tack	41+42
11: 25:35	Gybe	41+42
11: 25:53	Tack	All
26:10	Tack	All
11:26:40	Tack	41+42
11:27:15	Tack	All
11:27:33	Tack	41+42
11:27:47	Tack	43
11:28:10	Tack	41+42
11:28:34	Tack	43
11:28:50	Tack	41+42
11:29:10	Tack	41+42
11:29:30	Tack	All
11:30:05	Tack	All
11:30:30	Gybe	41+42
11:30:35	Tack	43
11:30:52	Tack	41+42
11:31:17	Tack	43
11:31:20	Tack	41+42
11:31:40	Tack	All
11:32:20	Gybe	43
11:32:21	Tack	41+42
11:32:45	Tack	41+42
11:33:00	Tack	43

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Nothing	No comment left or stated 'nothing' was either the best or worst part of the sailing activity.
Capsize/ Risk	When the boat mast falls horizontal in the water or the boat is at risk of capsizing.
Blue Environment	Any comment mentioning association to water in surroundings.
Dinghy Orientated	Factors revolving around the dinghy vessel such as ropes, spars or hull.
Temperature (Cold)	Comments that included reference to temperature being cold.
Collision	Any mention of collision with an object, land or other vessel.
Rigging/ Set up	The preparation before the dinghy is ready for sailing, including self-preparation
Skill – Launching/ Landing	Any mention of the dinghy leaving shore or returning to shore.
Clothing Issue	Any reference to any clothing sailors wear e.g. wetsuits, helmets and buoyancy aids
Skill – Tacking	Any reference to the turning of the boat through the wind.
Injury	Any reference to the individual becoming hurt during the session.

Sailing Independently	Gaining the skills to sail their dinghy by themselves.
Funboat Sailing	Specifically naming the 'Funboat'
Sailing Achievement	Any mention of achieving a skill e.g. tacking or dry capsizing.
Skill - Acceleration	Any mention of being in control of the speed of the boat
Keel Boat Sailing	Specifically naming the 'Keels' or 'Keelboats'
Everything	Not specifying in details and stating 'everything'
Powerboat	Any mention of the ribs or powerboats used
Skill – Helming	Any mention of the participant in control of steering

Falling in/ Wet	Any mention of getting wet or falling into the water
Boat Healing	Any mention of the boat tipping or healing
Head to Wind	Any mention of not moving, sail flapping, or being stuck head to wind
Out of Water/ Not Sailing	Any activities that were not completed on the water or did not involve sailing

Wind – Too Little	Comments that include any mention of a lack of wind or movement
Rigging/ Derigging	The set up or break down of the dinghy before and after sailing.
Theory	The knowledge gaining(usually land-based) activities
Equipment – Wetsuit	Any mention of wetsuits
Not Capsizing	Specific mention of not capsizing.
Separated from Boat/ Group	Any mention of becoming separated from dinghy or group whilst out on water.
Loss of Control	Any mention of losing or not being in control of dinghy
Wind – Too Much	Any mention of the force of wind being too much/ strong
Course	Any mention of the course set on water using buoys.
Social – Calm down/ shouting	Negative social factors including shouting/ tension
Stand up Sailing	Being in control of boat and sailing while standing uo in the dinghy
Boring	Lack of enjoyment and interest
N/A	Not applicable or no answer given
Skill - Gybing	Any mention of completing the gybe (turning away from the wind)

Games	Any game related activities
Social	Any mention of social factors such as peers, instructors, staff or family
Experiencing different boats	Any mention of trying different/ new boats
Racing	Any mention of racing, through a course or direction
Skill – Hiking	Any mention of completing the hiking movement (leaning out the boat to keep the hull flat)
Towed	Any mention of being attached to a tow
Knots	Any mention of the knots learnt during the course.

Syllabus Checklist	RYA Youth Sailing Scheme Name	

	Stage 1	
Practical	**Rigging, Launching & Recovery**	Can assist with rigging a dinghy Can launch a dinghy and get under way with instruction Can secure boat to trolley Can assist with recovery and stowage of dinghy and gear
	Ropework	figure of eight cleat a halyard
	Sailing Techniques & Manoeuvres	Can be a responsive crew under instruction* Can steer when sailing and being towed Can steer on a reach and go about (reach to reach) Understands the effect of basic boat controls Understands the basic principles of stopping, controlling speed and getting out of irons Can paddle or row round a short triangle Can call for assistance
	Clothing & Equipment	Can put on personal buoyancy correctly Is confident in the water wearing personal buoyancy Understands personal safety - and knows what to wear
	Capsize	Understands the importance of staying with the boat
Background	**General**	Can name basic parts of a boat Understands what action to take to help those in distress Understands local hazards Knows how to prepare for a tow
	Meteorology	Has knowledge of wind direction
	Rules of the Road	

Syllabus Checklist	RYA Youth Sailing Scheme Name	

	Stage 2	
Practical	**Rigging, Launching & Recovery**	Can put a boat head to wind for rigging Can rig a dinghy Understands how to manoeuvre a trolley clear of other boats and overhead cables Can launch and recover a small dinghy in an offshore wind
	Ropework	round turn and two half hitches reef knot
	Sailing Techniques & Manoeuvres	Can control speed, and stop by lying-to Can get out of irons Can go about (close reach to close reach) Can crew a boat effectively Can sail a shallow triangle across the wind under supervision (gybing optional) Understands the principles of: The five essentials Returning to a beach or pontoon (offshore wind)
	Clothing & Equipment	Can choose and correctly adjust a personal buoyancy aid Understands what to wear
	Capsize	Can be scooped in during capsize recovery or Can right a single-handed dinghy
Background	**General**	Understands the No Go Zone Knows what is meant by windward, leeward, gybe Has knowledge of: Spars and rigging Parts of the sail Sail controls and foils Offshore and onshore winds Telling someone ashore The dangers of man made hazards
	Meteorology	Understands several ways of finding wind direction
	Rules of the Road	Port and Starboard rule

Summary only – not to be used in place of G11 Logbook

Types of Vessels

Topper dinghies are a popular racing class for juniors, youth and lightweight adults. The Topper provides a transition from beginner racer while progressing into national and international events. The topper class is a registered RYA pathway which has produced 2 golds and 1 Silver at the Rio 2016 Olympics.

Quba, Tera and Feva are all manufactured by RS Sailing. Each vessel serves a slightly different audience. The Quba is now no longer in production due to re-modelling into the Zest. However, the purpose of the Quba was mostly for learning and training purposes. The sail can be de-powered easily and the rig can also be changed from a single-handed to double handed boat. The hull is made of a highly durable material and requires low maintenance.

The Tera is a versatile single handed dinghy (RS Sailing Tera, 2018). It is used for both training and racing and has a popular international representation. The Tera is designed for youth, particularly those wishing to race. Since the Tera is also handled by novices the hull is also made of durable material.

Finally, the Feva is a youth double handed dinghy, The Feva class holds well attended international events and is promoted by racers, families and centres alike (RS Sailing Feva, 2018). The stability of the vessel means that it can be relatively forgiving to those newer to double handed racing, while a decent performance still enables those with increased skill and experience to excel.

Another desired vessel is the Laser. This dinghy is adapted depending on the sailor characteristics. It can be fitted with one of three rigs; 4.7, radial and standard. The size of rig increases respectively. The 4.7 is the end of the transitional stage for youth into adult classes. The radial is used as the racing rig for ladies, as well as a transition for males from 4.7 to standard. The standard rig is the largest and used for male Laser races. The hull of the dinghy does not differ between rigs.

Lastly, the Wayfarer (Hartley Boats, 2018) is a larger dinghy which can hold up to 6 adults. The dinghy is modified for 3 different purposes; cruising, racing and training. The Wayfarer class provides an active schedule of local, national and international races. The design of the wayfarer, particularly the training wayfarer, promotes high levels of safety and in turn popularity.