

Science & Justice

Special Issue: The Future of Teaching, Training and Learning in Forensic and Crime Sciences

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Abstract:	<p>The Covid-19 pandemic has greatly affected the provision of education and training on a global scale. With the gradual shift in approaches to education and professional development, teaching, training and learning debates within forensic and crime science communities as well as across the criminal justice sector is becoming both more pressing and more challenging.</p> <p>This special issue on the future of teaching, training and learning gathers scholarly articles, empirically based analyses, primary research, case studies, professional practice reports and commentaries from academics and criminal justice practitioners around the world. The main areas covered within these outputs include, but are not limited to:</p> <p>Critical evaluation of contemporary teaching and training practice within the criminal justice sector, and its implications for the future.</p> <p>Identification and assessment of challenges, changes and sustainability in teaching and training practice within forensic and crime science disciplines.</p> <p>Analytical reflection on the implications of online, blended and/or hybrid higher education or training from student, teacher, trainer or practitioner perspectives in areas of forensic and crime sciences.</p>
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Special Issue: The Future of Teaching, Training and Learning in Forensic and Crime Sciences

Guest Editors: Dr. Helen Tidy and Prof. Caroline Fournet

Introductory paragraph

The Covid-19 pandemic has greatly affected the provision of education and training on a global scale. With the gradual shift in approaches to education and professional development, teaching, training and learning debates within forensic and crime science communities as well as across the criminal justice sector is becoming both more pressing and more challenging.

This special issue on the future of teaching, training and learning gathers scholarly articles, empirically based analyses, primary research, case studies, professional practice reports and commentaries from academics and criminal justice practitioners around the world. The main areas covered within these outputs include, but are not limited to:

- 1) Critical evaluation of contemporary teaching and training practice within the criminal justice sector, and its implications for the future.
- 2) Identification and assessment of challenges, changes and sustainability in teaching and training practice within forensic and crime science disciplines.
- 3) Analytical reflection on the implications of online, blended and/or hybrid higher education or training from student, teacher, trainer or practitioner perspectives in areas of forensic and crime sciences.

Guest Editorial

Science & Justice provides a forum to promote communication and publication of novel research, emerging practices, contemporary issues and subjects that spark debates within forensic and crime science communities, as well as across the criminal justice sector.

Research into forensic science and associated disciplines is plentiful and varied but research concerning how we learn, teach and train in this area is somewhat sporadic in nature. Teaching, training and learning however have always been key subjects worthy of exploration and they contribute to establishing a bridge between all these disciplines.

Now, nearing the end of 2022, it seems an under-statement to assert that the Covid-19 pandemic has greatly affected higher education and the provision of education and training on a global scale. The criminal justice sector – including forensic sciences and associated disciplines – has of course not been spared. With the gradual shift in approaches to education and professional development, teaching, training and learning across the criminal justice sector is becoming both more pressing and more challenging. Forensic science and associated disciplines have some unique characteristics both at teaching and training levels. These characteristics, such as the applied nature and its interaction with the law, mean that teaching and training methods must be innovated and adapted to meet needs.

It is against this background that we decided to guest-edit this Special Issue on the future of teaching, training and learning to address part of this knowledge gap and explore how innovative and engaging education and training can be provided. Regrouping scholarly articles, empirically based analyses, primary research, case studies, professional practice reports and/or commentaries written by academics and criminal justice practitioners from a range of

jurisdictions (including Australia, Canada, Germany, Mexico, Switzerland, UK and USA) who share and reflect on their educational knowledge and methods, this Special Issue has never been timelier. This Issue does not have the pretence to be exhaustive and/or to be the definitive compilation of articles on the topic. Rather, it hopes to re-ignite and kick-start discussions and reflections within the criminal justice sector on how education and training can continually evolve, adapt, and change without ever losing integrity and quality.

There is no better forum to encourage future pedagogical research within the criminal justice sector than *Science & Justice*: by essence interdisciplinary, the Journal constitutes an ideal scientific platform to allow for broad dissemination of knowledge, to promote the exchange of thoughts and ideas, and to foster the dialogue within disciplines and across discipline boundaries.

In this Special Issue a substantial number of the contributions explore remote learning in forensic sciences and offer insightful data and analyses as well as innovative proposals and recommendations. In their case study, Davidson et al.¹ detail a range of innovative teaching practices, that would still allow for the development of practical skills, in the delivery of an MSc course during the Covid-19 pandemic. In their professional practice report, Sosa-Reyes et al. consider how interdisciplinary approaches to the teaching of forensic science have been affected by the Covid-19 pandemic.² Turning to cutting-edge methods, Jones and Sturrock share their empirical research, conducted in selected undergraduate forensic science modules, in which they tested the integration of active learning – flipped learning, gamification – in virtual learning environments.³ In their research article, Pringle et al., consider the use of VR technology and eGaming in the teaching of forensic geoscientists.⁴

Three publications focus on the teaching of anthropology with Spiros et al. considering biological anthropology digital pedagogy, access, and the ethics surrounding digital osteology in their research article.⁵ In their professional practice report, Villavicencio-Queijeiro et al. explore how to include practical activities within undergraduate distance-learning in the fields of forensic etymology, forensic anthropology, and hematology and serology.⁶ Innovative teaching practices in this area also include Craik and Collings' reflection⁷ on using a combination of two-dimensional and three-dimensional models - rather than solely two-dimensional ones - to enhance forensic anthropology learning and teaching, while addressing a diversity of concerns, including ethical ones.

Problem-based learning in forensic sciences is also addressed within the contributions. In her review article, Brown discusses how to fill the gap in forensic speech science teaching to better prepare student for their future forensic speech analysis roles in their professional life.⁸ Also adopting a career progression viewpoint, Crispino's research article reflects on the reasons for teaching Crime Scene Management to forensic science students in the Canadian context.⁹ Focusing on the remote teaching of forensic case investigations to third-year bachelor students, Kummer et al. consider turning to digital technologies in problem-based forensic learning activities.¹⁰ Based on research conducted over three years, their study offers an insightful comparison between face-to-face on-site teaching, fully online learning and blended learning in terms of training, case simulation, collaborative learning, and crime scene investigation. If their study focuses on teaching forensic case investigations to third-year bachelor students, Bettels et al. chose to analyse case investigation at the professional level and also highlight the need for collaboration.¹¹ In their research article on missing persons and cold cases, they explore the pilot International Cold Case Project aimed at supporting the Police Expert Network on Missing Persons in designing a common approach to finding the missing. Based on this

analysis, they advocate for a strong partnership between academia, including both academics and students, industry and community volunteers as well as for international and cross-jurisdictional collaboration.

Numerous articles engage with the need for the development of effective learning, teaching and training networks. In their research article, Bolton-King et al. discuss how establishing the #RemoteForensicCSI network helped participants adapt to the changing context of teaching and training delivery throughout the Covid-19 pandemic.¹² Moran evaluated the use of free online teaching resources to aid deliver of forensic content¹³ while, in her discussion piece, Carlisle-Davies pushes for the establishment of a UK wide Forensic Teaching Network to further advance pedagogic research in the sector.¹⁴

Turning to a key aspect of education, namely, revision, Tidy et al. tested sketchnoting as a revision aid for first year forensic science students.¹⁵ Aside from being generally praised by students, this initiative could be used in face-to-face, remote and blending learning environments. It could also be creatively transferred to other disciplines, and so could Bolton-King's findings on the potential impact of effective peer-mentoring with first year students.¹⁶ Based on research conducted over a three-year period with second to fourth year students providing the peer-support, this article sheds new understanding on the key role peer-mentoring could play for professional and personal development.

The post-pandemic context the need for an adaptation of teaching, training and learning should also address broader educational priorities. In their professional practice report Chaussee et al. offer a much-needed critical evaluation of colonial assumptions that may be present in the forensic curricula while strongly challenging and rebutting arguments raised against any attempt at decolonising the curricula.¹⁷ The outcomes and conclusions of their professional practice report transcend the forensic curricula and could serve as a source of reflection and inspiration for other disciplines. Ultimately this is exactly what we hope to have achieved with this Special Issue: To encourage and foster pedagogic research within the criminal justice sector with a view to continuously advance teaching, training and learning, and trying to further bridge the gaps between education and professional practice. We also hope to have triggered interest for cross-jurisdictional research that would transcend frontiers and offer a more global reflection. Together with the Editor-in-Chief, we encourage you to continue writing new manuscripts that focus on teaching, training and learning, and to submit them to regular issues of *Science & Justice*.

¹ K. Davidson, P. Haddrill, F. Casali, B. Murphy, L. Gibson, M. Robinson, A. Clunie, J. Christie, L; Curran, and F. Carlisle-Davies, 'Lockdown labs: pivoting to remote learning in forensic science higher education'.

² A.M. Sosa-Reyes, A. Villavicencio-Queijeiro and L.J. Suzuri-Hernández, 'Interdisciplinary approaches to the teaching of forensic science in the Undergraduate Program of Forensic Sciences at the National Autonomous University of Mexico, before and after COVID-19'.

³ B. Jones and K. Sturrock, 'Just by being here, you aren't halfway there: Structured Active Learning and its integration in virtual learning environments and assessment'.

⁴ J.K. Pringle, I.G. Stimpson, A.J. Jeffery, K.D. Wisniewski, T. Grossey, L. Hobson, V. Heaton, V. Zholobenko and S.L. Rogers, 'Extended reality (XR) virtual practical and educational eGaming to provide effective immersive environments for learning and teaching in forensic science'.

⁵ M.C. Spiros, A.M. Plemons and J.A. Biggs, 'Pedagogical access and ethical considerations in forensic anthropology and bioarchaeology'.

⁶ A. Villavicencio-Queijeiro, C. Pedraza-Lara, M. Quinto-Sánchez, A. Castillo-Alanís, A.M. Sosa-Reyes, J.A. Gómez-Valdes, M. Ojeda-Carrasco, V. De Jesús-Bonilla, R. Enríquez-Farías, and L.J. Suzuri-Hernández, 'Teaching Forensic Entomology, Forensic Anthropology, and Hematology & Serology during the COVID-19 pandemic: practical activities for distance learning'.

⁷ K.M. Craik and A.J. Collings, 'A preliminary study into the impact of using three-dimensional models in forensic anthropology learning and teaching'.

⁸ G. Brown, 'Proposing Problem-Based Learning for teaching future forensic speech scientists'.

⁹ F. Crispino, 'Why teach crime scene management to forensic university students?'

¹⁰ N. Kummer, O. Delémont, R. Voisard, and C. Weyermann, 'The potential of digital technologies in problem-based forensic learning activities'.

¹¹ K. Bettels, D. Grimstead, C. Allsop, A. Chaussee, R. Bolton-King, C. Sturdy Colls, B. Chapman, D. Keatley, E. Tilley, J. Turner, S. Spence, and A. Marquardt, 'Finding the missing and unknown: Novel educational approaches to warming up cold cases'.

¹² R.S. Bolton-King, L.J. Nichols-Drew and I.J. Turner, 'RemoteForensicCSI: Enriching teaching, training and learning through networking and timely CPD'.

¹³ K.S. Moran, 'The web of plenty: Leveraging the abundance of free, on-demand online forensic content'.

¹⁴ F. Carlisle-Davies, 'Do we need a forensic science teaching network?'

¹⁵ H. Tidy, R. Burnham and S. Elkington, 'Using Sketchnoting as a Revision Aid with Forensic Students'.

¹⁶ R.S. Bolton-King, 'Student mentoring to enhance graduates' employability potential'.

¹⁷ A. Chaussee, J. Winter and P. Ayres, 'Approaches to Decolonising Forensic Curricula'.