Blended Learning for Police Learning and Development

A Report on the Research Evidence

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Executive Summary

Context and rationale for the study

Three factors have encouraged the adoption of more virtual and blended learning (V & BL) approaches in police learning and development in England and Wales: the introduction of degree level entry routes to joining the police as a result of the PEQF; the national Policing Uplift Programme (PUP) which aims to recruit 20,000 new police officers in the next three years between 2020 -2023; and the effect of the Covid-19 pandemic which has disrupted normal ways of working - with the last of these being the main catalyst. The net result of these three developments has put tremendous pressure on police learning and development functions in terms of capacity and quality of delivery. It has provided the impetus for a rethink of the way learning is delivered in the 43 police forces in England and Wales.

This research is part of a wider project to increase the capability of police forces to deliver blended learning to recruits and the existing workforce. The focus of the work reported here is to support the delivery of police learning and development (L & D) for recruit officers as well as continued professional development for in-service officers through improved capability to use virtual methods and a blended leaning (BL) approach. The intention is to deliver additional significant opportunities and benefits to police L & D in tandem and over time, creating a valuable legacy.

This study was funded by the National Police Chiefs' Council (NPCC) to inform the efforts of the National Police L & D Executive Group to assist police forces in introducing BL as part of the overall reform of police learning and development more broadly.

Methods

The research questions governing this study are:

- Does BL contribute to improving training in a professional context?
- What are the essential principles underpinning the design and delivery of training using BL methods?

To answer these questions, we undertook three distinct pieces of work:

1. Rapid Evidence Assessment (REA) on the effectiveness of BL approaches to education
2. 14 semi-structured interviews with police Learning and Development (L & D) leads,
3. 14 semi-structured interviews with educators who run virtual and blended learning programmes for other professions.

The REA answered two research questions: How does BL compare with traditional face to face learning and online learning? And - What factors contribute to the success of BL? Relevant search terms were devised and appropriate inclusion criteria were set out. Five data bases were searched and after a total of 4511 studies were initially screened on title and abstract and further on full text, 92 relevant studies that met the inclusion criteria were quality assessed. Finally, a total of 42 studies adjudged as strong or moderate quality were coded and analysed in the report.

Interviews were conducted with 14 L & D leads that represented 17 police forces in England and Wales (E & W) to get a sense of the capacity and appetite in forces to provide BL for recruit trainees and continuous professional development (CPD) and what their plans and aspirations were going forward. Additionally, the interviews aimed to identify and explore what challenges L & D leads foresaw in expanding the use of virtual and BL approaches to training in the near future.

The aim of the interviews with educators in other professions was to learn from the expertise and experience of those running virtual and BL courses with other trainee professionals, to understand the variety of BL models adopted and rationale for their design, identify the benefits and challenges for learners and tutors, and what types of activities work best in BL in the training of professionals.

Both sets of interviews were carried out via Teams during the months of October and December 2020. Every effort has been made to anonymise the participants and maintain confidentiality as appropriate. Ethical permission for the study was granted by UCL's Department of Security and Crime Science Ethics Committee.

Key Findings

These findings emerge from a combination of all three individual pieces of work that were conducted as part of this project.

➢ There is an absence of an accepted definition for the term Blended Learning (BL) and it means different things to different people (including in the literature).
➢ The existing evidence indicates that although there are no significant differences in learning outcomes between traditional face to face, online, and blended learning methods, the latter offers many advantages in terms of overall flexibility thus improving engagement and satisfaction for learners, and leads to cost, time, and resource saving for teaching programmes.
➢ It is not the learning method per se, but effective design and delivery to address the needs of different learners, that is responsible for the success of a learning approach.
➢ Educators echo findings from the evidence base and their experiential wisdom indicates that the design and implementation of BL programmes (i.e. blended by design and not blended by default) are key to their success.
➢ The success of flexible BL depends on whether the learner is motivated, has self-efficacy, and is equipped to be a self-regulated and autonomous learner.
➢ Police forces in E & W have, with varying degrees of success, moved a substantial part, if not all, of their training online during the current pandemic.
➢ There is some appetite and support among L & D teams and senior leadership at present to press ahead with the adoption of BL for all learning and development needs of recruit and in-service officers.
➢ Challenges to the success of a BL approach include available technology, appropriate upskilling of learners and trainers, and continued support of senior leadership teams.

Key Recommendations

These recommendations are made with the intention of informing the National Policing Executive L & D Working Group's agenda to introduce and support a BL approach to deliver learning and development programmes to recruit and in service officers in England and Wales.

Definition and terminology

- We recommend adopting the following definition of blended learning for the sake of consistency in discussions, design and delivery of programmes:

  BL involves delivery of training and its assessment through a combination of different methods supported by physical interaction and virtual environments. These would thus include the use of traditional face to face and virtual classroom teaching, role plays, group work, videos, podcasts, webinars, interactive quizzes, peer review, reflective exercises and other methods, that are either teacher led or learner driven, to deliver training that is effective and efficient for both the trainer and trainee.

Understanding the learner

- Understand the profile of the range of learners to inform learning design: their previous experience with BL, their accessibility to technology, their motivation, self-efficacy and ability to regulate their own learning, their confidence in using technology.

Equipping the learning and development of practitioners

- Ensure learning and development practitioners are sufficiently trained in both use of the technology and in pedagogical principles for BL. L & D practitioners need to understand how the technology and virtual learning platforms can help and hinder learning to make good design choices.

Design programmes based on good design principles for BL

- Exploit the flexibility of BL to widen access to training by allowing learners to access learning in their own time, in their home or work environments.
- Match learning activities and mode of learning (i.e. face to face or virtual) to type of content, based on a clear understanding of what learning outcomes are to be achieved.
- Provide opportunities for socialisation through collaborative and group-work activities.
- Ensure assessments are appropriate to capture the full extent of surface and deep learning that comes from individual study and collaborative work.
- Exploit the democratisation of the learning process offered in BL where learners and tutors can be equal participants in the virtual environment. Offer learners more control over the timetable and content of their learning.
- Include consideration and policy on security online, confidentiality and other ethical considerations in the guidelines for learners and tutors.
- Build in on-going evaluation of new BL programmes to inform their continued development.

Delivery of BL programmes

- Ensure there are sufficient opportunities for learners to access tutors and ensure tutors regularly check on and respond to learners.
- Be flexible in adapting to learner requirements and limitations of technology.

Costs and resources

- Commit sufficient resource upfront to the setting up and conducting of BL programmes, both in terms of finance, technological support, devices, plus hardware and software, and staff time.
- Ensure the technological provision for the BL programme is fit for the delivery of learning (i.e. can support all the desired functions and activities in good BL design) and is accessible to all.
- Ensure continued support of senior leadership to the resourcing and on-going implementation of BL.

Overcoming resistance to moving to BL

- Understand reluctance of professionals to move to BL and ensure learning and practitioner lead and trainee buy-in by increasing confidence and skill of all to use the technology, platforms and relevant software.
- Demonstrate and share experience of benefits of well-designed BL programmes to encourage take up.
- Use existing skills amongst L & D practitioners with BL to help those less experienced.
- Provide sufficient IT support to troubleshoot issues with technology.

Thus, the integration of structure, design, delivery of training as well as feeding back evaluation findings into BL training would require the combined expertise of practitioners, IT specialists, education specialists, and evaluators. They all need to be working jointly to ensure that the BL approach is dynamic and flexible enough to deliver the learning outcomes and meet learner requirements. Finally, we recommend that police organisations introduce the BL approach, working to a theory of change as a framework to support a thorough evaluation of the BL approach, as part of the continued effort to establish policing as an evidence informed profession.

Chapter 1: A blended learning approach to police learning and development

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Introduction

Over the past few years three developments have spurred a rethink at the national level in England and Wales (E & W) of the police education and training agenda: the introduction of the new Police Education Qualification Framework (PEQF) which requires recruit police officers to have a graduate degree in professional policing; the National Police Uplift Programme (PUP) which envisages the recruitment of 20,000 additional officers over 2020-23; and the expected fallout of the COVID -19 pandemic in 2020. These developments have made it imperative for Learning and Development (L & D) teams in police forces to rethink their capacity and current approach to police education mainly for recruit officers, as well as for the continued professional development of in-service officers.

In light of the claim by the then Chief Executive of the College of Policing, Alex Marshall that 'policing is more complex and difficult than it used to be and police need better training and education than they have had up until now,' (2016, para 6), there has been some momentum to introduce blended approaches to professional development for new and experienced officers. Recent changes introduced by the Police Education Qualifications Framework (PEQF) mentioned above and the increased involvement of Higher Education Institutions (HEIs) in police training raise questions about how theory and practice are taught and assessed. The decision to incorporate new and innovative (for the police) teaching and learning approaches in E & W predates the current crisis to traditional training posed by lockdown restrictions accompanying the global COVID-19 pandemic. However, the pandemic has injected further urgency to the quest for finding more flexible and cost effective means of providing better, more enhanced training to higher numbers of officers (as a result of the PUP).

The National L & D Executive Group has been exploring ways of introducing blended learning (BL) methods in an attempt to address and enhance the current capacity of L & D departments in the 43 police forces of E & W to meet the increased training needs. This project was funded by the National Police Chiefs' Council (NPCC) to inform the Executive Group's efforts to roll out new virtual and blended learning approaches to police education nationally. The project included three work packages: reviewing the evidence on what works in BL approaches that could inform police education; interviews with education practitioners with experience of providing BL in other professional and higher education contexts to draw on their experience; and interviews with L & D leads in police organisations to understand the current capacity and appetite to provide BL approaches as well as challenges to the adoption of BL into police L & D from an organisational perspective.

This final report is thus structured as follows – the first introductory chapter presents some definitions of terms associated with virtual and blended learning and identifies the three main concerns that this report addresses. The next three chapters present the reports of the three work packages mentioned above. These are followed by a final discussion and conclusion chapter where we present a theory of change for BL in police L & D that can inform practice and provide the framework for any subsequent evaluations that police organisations might choose to undertake. Recommendations for best practice as incorporated in individual chapters and are summarised in the Executive Summary that fronts this report.

Defining virtual and blended learning

The global outbreak of COVID 19 prompted many educational institutions and training providers to move teaching and learning to online platforms. However, this approach to teaching and learning is not new and, for some time, has been used in various contexts including for police training in England and Wales. From the 1960s, digital technology emerged as 'Computer Assisted Learning' and 'Computer Aided Instruction' as ways to support more individualised learning. These approaches did not necessarily require the use of the internet unlike more recent, broader terms such as 'web-based,' 'online,' 'e-learning' and 'digital learning.' These broader terms encompass any learning with at least some mediation by digital technology and often assume the use of the internet. There are many – often ambiguous - terms associated with teaching and learning that is accessed and supported by the internet.

Additionally, most traditional training programmes in professional or practice contexts or higher education today use some mix of face to face interaction and online elements. These are therefore largely blended by default – i.e. used more as a matter of convenience or necessity, than any carefully thought out strategic vision with the aim of using specific media to enhance overall learning. Again, a plethora of terms exist to cover virtual and blended learning and as our review of the evidence and interviews with education and L & D practitioners revealed, these are used variously by people and mean different things to different people. It is thus important to identify what are the various associated terms involved in BL to begin to get some clarity around usage as also some agreed terms to ensure some uniformity across relevant actors within policing education.

We list commonly used terms in order to offer some working definitions:

- Virtual learning:
  'Virtual' is an ambiguous term used in a variety of ways. It refers to, and is often called, 'online learning,' 'e-learning' or 'distance learning' where the tutor is not physically present. Virtual learning requires the learner to access content uploaded to a web-based platform sometimes referred to as a Virtual Learning Environment. It may include video conferencing functionality which could be conceptualised as 'virtual face to face.' (Virtual worlds and virtual reality have specific meaning as outlined below).

- Blended Learning:
  "A formal education programme in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path and/or pace; and at least in part at a supervised brick-and-mortar location away from home" (Staker and Horn, 2012, p.3). This might include courses where learners come together for an introduction at the start and at key times during the course or where the learning each week/month is a blend of face to face and online learning.

- Hybrid Approach:
  A model where learners choose to attend the same session either face to face or online via video conferencing functionality. Depending on the size of the cohort and the communication channels available, this set-up may require more than one facilitator to ensure all learners are included and have the opportunity to contribute or ask questions.

- Virtual Learning Environment (VLE):

An online learning space which serves as a repository for learning content for learning (for example, articles to read, videos to watch), activities such as discussion forums and tools to assess learning. Most VLEs include in-built or plug-in functionality for video conferencing. Examples include Moodle, Canvas, Blackboard, MS Teams and Google Classroom.

- Online Synchronous Learning:
  Learning that takes place with the learner(s)/tutor or learner(s)/peer(s) are available at the same time. This might be facilitated by live video conferencing for a 'virtual face to face' experience and tools such as live chat functionality. Examples of online platforms to support synchronous learning include Zoom, MS Teams, Skype and Google Classroom.

- Asynchronous Learning:
  Learning which takes place at a time chosen by the learner. Learning content and activities are accessed via the VLE. Interaction between learner(s)/tutor or learner(s)/peer(s) is not done in real time. Examples of activities include discussion through online forums, annotating images, analysing videos and uploading material such as presentations, questions or mind-maps.

- Webinar:
  This is a 'web seminar' - an online event such as a presentation or lecture. These might be live events with some interactivity including the opportunity for the audience to ask questions via a chat function. Some webinars might be pre-recorded or available as recordings of the interactive, live event.

- Virtual Worlds and Gaming:
  Virtual worlds are usually three-dimensional virtual spaces of online communities which can mirror real-life scenarios. They are interactive spaces in which multi-user learners/players often appear as (identifiable or anonymous) avatars. An example of a virtual world is Second Life where simulations of scenarios are presented for professional training purposes. Reflection and feedback on how users interacted with others and responded to the scenario in the virtual space have application for real world practice (Boulos, Hetherington and Wheeler, 2007). The power of virtual worlds is enhanced by virtual reality experiences where gadgets (e.g. headsets or controllers) and software is used to make the user feel like they are physically in the simulation. Greater integration of Artificial Intelligence (AI) into virtual worlds can lead to more complex and nuanced responses to the users' actions and reactions to the scenarios presented.

- MOOC – Massive Open Online Course:
  The term originated in the US in 2008 to describe free, easily accessible, completely online courses. MOOCs provide the opportunity to study with top universities around the world. They do not necessarily lead to formal qualifications, but they do mean you can gain knowledge in all sorts of areas (FutureLearn, 2016).

Learning and Development in police organisations have historically used traditional face-to-face classroom teaching to impart information and theoretical knowledge and field training officers or mentors to introduce new recruits to police practice and culture. Thus, traditional training programmes might have used some of many of the methods incorporating digital technology partially but perhaps not in a systematic or pedagogically informed manner with the focus of deliberately using blended methods to enhance learning outcomes. It would therefore be beneficial if there is a commonly accepted definition for the terms associated with BL approaches.

Theoretical approaches underpinning BL

Pedagogy is associated with the study of teaching methods, the content of what is being learned and the way this is achieved. Whereas pedagogy translates to the leading or teaching of a child, Knowles (1980) applied Kapp's (1833) definition of 'andragogy' to re-conceptualise the teaching of adults. He identified readiness to learn, intrinsic motivation and the role of experience as some of the key differences between how children and adults learn. Birzer (2003) applied these ideas to the context of police training. He argued that adoption of andragogical principles would support a shift from teacher-centred to student-centred learning and would help to reduce the theory-practice gap for both trainee and veteran police officers in the US. Knowles' ideas have, however, been widely criticised, even calling into question the extent to which this is a 'theory,' and that separating pedagogy and andragogy is a false dichotomy (Holmes and Abington-Cooper, 2000).

Furthermore, *E-pedagogy* might broadly be defined as 'learning design that incorporates educational quality, values and effectiveness of teaching, learning and assessment activities supported by technology,' (Dempster, 2004, para 1). Dempster (2004) questions whether 'e' pedagogy should be separated from any other pedagogy as overarching theoretical understanding of the processes of learning remain largely unchanged from class-based to online contexts. Instead, the shift of focus is on what methods are afforded by digital technologies to meet the aim of the learning. To this extent, it is not the technology itself that determines the quality and effectiveness of online teaching and learning but an understanding of how pedagogy underpins the choice of learning tools and activities. This requires intentional programme design. The argument can be similarly extend to the delivery of BL whereby the theoretical underpinnings are focused on achieving the appropriate blend of learning methods such that they -

- Are appropriate for the material to be taught and the kind of learning that is intended;
- Suit the needs to learners and plays to the strengths of the instructors;
- Facilitate the assimilation of theory and practice; and
- Enhance learning to bring about required behavioural change.

Following on from the conclusions above, a number of points emerge from the vast literature on learning theory as being important:

- The need for clarity about **what** is being learned and how learning outcomes shape learning activities.
  This includes the nature of the learning – for example, whether it relates to learning knowledge, skills, conceptual understanding, values, and application of these in context. It is also important that this includes an understanding of which activities match the nature of what is being learned, for example, the different ways in which factual knowledge versus skills are understood, embedded or practised. This links closely to the ways in which learning might be assessed or applied within BL models.

- The importance of knowing how to support learning on different media.
  This point refers to, **how** learning is supported and developed within well-designed programmes and whether the variety of tools being used are serving any particular aims. This is because the introduction of BL has some preconditions. For example, online components of blended programmes, might require development of skills associated with using digital

tools. If time to introduce and practise using these tools has not been planned for, there is a risk to learners of 'cognitive overload.' (Sweller et al 1998) reducing learners' capacity to cope with new learning. If not thought about in advance, the demands of learning how to use the digital tools can get in the way of learning the course or curriculum content.

- <u>The need for a clear rationale for choices of design.</u>
  There is rarely, if ever, one 'correct' theoretical approach that should be applied to a learning content. What is of more significance is knowing **why** specific activities are chosen to develop different aspects of learning and whether these are best carried out individually or with others. Being able to articulate why certain approaches to learning are chosen for a module or course design links the 'what' and the 'how' of learning and can influence the focus, purpose, effectiveness and quality of learning processes and outcomes.

Theoretical approaches to learning are briefly outlined below and examples of how these approaches can be applied to BL are given. It is worth noting that any factors associated with learning – such as an individual's emotional, psychological or physiological state and their preferred ways or environment for learning can influence the ways in which they engage with the learning (Maslow, 1943). Theories can therefore offer useful frameworks to understand how people learn but do not determine the extent to which they might be successful. Despite the clear outcome of professional learning programmes, careful planning of online components is required to ensure that activities are relevant and purposeful.

Constructivism
Based on Piaget's work with young children, cognitive constructivist theories focus on the individual's active structuring of thinking and development of skills through interaction with their environment. New learning is connected to existing knowledge and understanding. In effect, the environment itself becomes the 'teacher' through the course designer's selection of specific activities and resources which promote high levels of interactivity, interest, engagement and motivation. Once the course is set up, autonomy shifts to the individual learner. They are empowered to choose how, when and at what pace they engage with the content and learning outcomes. Course design which is based on constructivism is widely agreed as essential to the success of online learning (Chan, 2010).

Asynchronous learning tasks aligned with this approach value the learner's point of view and can include their response to written articles, case studies, short film extracts, images – such as writing/filming a counter argument, analysing data or identifying and representing key points in a poster or presentation. Development of conceptual understanding through exposure to examples and non-examples is a key idea embedded in this approach. This is linked to the idea of what Piaget called 'cognitive dissonance' where carefully chosen examples of concepts, behaviours or attitudes are intended to conflict with an individual's existing understanding and demand that they actively do something with these new ideas. Their response might be to accommodate their current thinking in order to integrate new ideas or to reject the new ideas. Records of both the processes and products of learning can be uploaded and shared via the online learning platform and then discussed in the classroom.

Examples of asynchronous online activities to support this learning approach include: interactive quizzes; identifying and justifying the 'odd one out' from a series of examples; responding to scenarios from a professional context; identifying what additional information is required for problem-based

learning. As a tool, digital storytelling helped police trainees to better understanding case-task content when embedded into an online programme. The interactive content increased and enhanced their motivation and presented complex material in an accessible way (Antoniv, 2019).

For blended models of learning, these activities can become 'flipped learning' or integrated into a 'flipped classroom' approach (Bergmann and Sams, 2012) where individuals first engage with learning activities online and bring their comments, questions, examples or other outcomes ready to present or discuss at face to face sessions. These sessions can be used discuss difficult or controversial content, identify misconceptions in learning and apply knowledge to hands-on skills with specific equipment.

Social constructivism

The principles underpinning constructivism can be applied to this branch of constructivist learning and in much of the literature, 'constructivism' includes collaborative activities. Vygotsky's (1934) sociocultural theory shapes this approach which is based on the premise that individuals actively construct new learning through interaction with a community of others. Through structured interaction and emphasis on language with a teacher or peer - (a 'More Knowledgeable Other'), - an individual's potential thinking or skill development is scaffolded and extended into what Vygotsky referred to as a 'Zone of Proximal Development.' Rather than learning through independent exploration and discovery, this approach emphasises the importance of the social dimension of learning.

For online components of blended courses, digital tools which facilitate synchronous learning are particularly aligned with this approach. Examples include: communication via video conferencing platforms (such as Zoom and MS Teams) which can accommodate large cohorts; 'chat' functions which allow participants to contribute using text comments in real-time as an alternative to speaking; and virtual breakout rooms where pairs or small groups can meet via video. This approach to learning emphasises the importance of language to develop thinking and thus there needs to be a clear rationale for the choice of activities set for learners in breakout rooms – that is, if it does not require collaboration, this could, instead, be included as an asynchronous, individual task. The types of activities that can effectively develop learning include discussion; problem solving; creating scenarios for other groups to respond to; comparing and contrasting experiences from professional practice; generating ideas for mind-maps. Problem-based learning is a recognised pedagogical approach (Barrows and Tamblyn, 1989) and is particularly useful for linking theory and practice in relevant ways in professional training. Learners are presented with a real-life scenario which they have to respond to. Discussion in online breakout rooms of possible responses, what additional information is required, identification of risk and agreement on an approach enables learners to practice professional behaviour in a low-risk environment and can develop decision-making and communication skills.

The benefit of learning with others leads to the co-creation of knowledge and often incorporates a more diverse range of ideas, attitudes and experience than learning alone. Synchronous tools lend themselves well to online collaboration. Many of the discussion-based activities outlined could take place asynchronously but it should be noted that the process takes longer due to learner availability and the time frame in which they might respond.

An extension of virtual learning environments and problem-based activities platform and includes aspects of playing out scenarios in virtual worlds and serious gaming afforded by newer digital technologies. These are particularly powerful when training scenarios are very complex or are high-risk situations for new trainees. Focusing on police training, serious gaming was shown to effectively

develop learning which was transferable to real work tasks (Caserman et al. 2018). Decisions made in a virtual world followed by reflection and discussion of their effectiveness can be applied to experiences in the real world.

Communities of practice

Social models used to explore situated learning provide a way of understanding participation in practice. That is, learning is collaborative and not an individual pursuit. The way in which individuals make sense of their own professional identity can be argued to develop through experience rather than a theory and is defined as the professional knowledge, skills, attitudes, values and beliefs shared in a professional team (Adams et al. 2006). Stemming from anthropological roots, 'Communities of Practice' (Scribner and Cole, 1981) highlight how an individual might become part of a group through shared use of language or repertoires. These informal dimensions of learning in groups that are thought to shape the individual include the expression of their identity (Lave and Wenger, 1991). Learning through social interaction has been applied to the socialisation of new police officers (Charman, 2017) to reflect the historic nature of their learning 'on the job' rather than through development of theoretical knowledge.

It could be argued that socialisation into a new professional community is best developed when working alongside others during practice-based elements of blended learning programmes. However, digital tools such as synchronous breakout rooms or videoconferencing can help to support and develop communities of practice online which can extend beyond initial training into an individual's career. Such tools can link individuals to wider expressions of professional communities. For example, individual trainees from specific placement settings can share their experience to form a wider understanding of what it means to become a professional. More experienced trainees or newly qualified individuals who may not be geographically close can more easily to link to new trainees for mentoring purposes. Busy experts from a range of settings including, for example, police officers from other regions (or countries) can help to develop communities of practice through contribution to online teaching and learning programmes more easily than travelling to a venue for a set time. Examples of possible contributions include pre-recorded presentations, webinars or answering questions that trainees have previously posted online. The values and attitudes associated with a particular profession and reflections on the changing nature of being a professional can thus be supported and developed remotely through digital tools and forums such as professional associations, social media groups or Twitter posts and can promote socialisation and a sense of belonging.

Self-regulated learning

Self-regulated learning, which was first studied in formal, offline education contexts, refers to 'self-generated thoughts, feelings and actions that are planned and cyclically adapted to the attainment of personal goals' (Zimmerman, 2000, p. 14). Zimmerman identified three main phases of self-regulated learning - forethought, performance and self-reflection - all of which link well to professional training. It is claimed that web-based environments require students to exercise a high degree of self-regulation to succeed (Dabbagh and Kitsantas, 2004). Littlejohn et al. (2016) identify the key aspects of self-regulated learning to include amongst other things motivation and goal setting, setting task values and strategies, evaluation of learning and satisfaction, and self-efficacy.

Course designers can support some of these aspects through careful choice of purposeful and engaging activities. Clear instructions and guidance help learners to understand the expectations on

them and can equip them with strategies to engage meaningfully with the learning content. A key factor embedded in the theorisation of self-regulation is the concept of self-efficacy which is person's belief in their ability to succeed in a particular situation. Bandura (1994) described these beliefs as determinants of how people think, behave, and feel and can influence success and resilience in learning. The components of blended programmes where learners are independently accessing online content can lead to a sense of isolation. Increasing online social presence through question forums, discussion groups or one-to-one tutorials provides a space where affective dimensions of learning can be acknowledged, and support provided. Relevant and timely feedback on contributions to discussion boards, ideas in group discussions in breakout rooms or uploaded assessment tasks can be used to boost confidence, identify success and develop learner resilience. Learning how to learn, managing feelings about oneself as a learner and willingness to persevere are useful tools for lifelong learning as trainees move to new fields and encounter new situations throughout their careers.

Theories of reflection

Reflecting on practice is commonly embedded in professional training programmes to link theoretical and practical elements and to record individual development. The College of Policing identify its value: 'Undertaking reflective practice on a regular basis can increase your self-awareness and emotional intelligence as well improving your decision-making abilities. It could also help you to form more effective working relationships and to better cope with stress.'

At the heart of Kolb's (1984) experiential learning theory is a conceptualisation of learning as 'the process whereby knowledge is created through the transformation of experience.' The four stage cycle includes (1) concrete experience which might be a first-time encounter or reinterpretation of previous experience; (2) reflective observation of the new experience where inconsistencies between experience and understanding can be noted; (3) abstract conceptualisation where new ideas emerge or modification of existing concepts can take place; and (4) active experimentation where the learner applies their ideas to a real-world context.

Gibbs' (1988) five stage cycle also focuses on learning through experience including: description, feelings, evaluation/analysis, conclusion and action plan. Given the challenge of new learning and many potentially difficult or traumatising experiences that might be encountered in practice, the stage focused on reflection of thoughts and feelings can be particularly valuable.

Blended models of learning lend themselves well to such cycles of reflection-on-practice. Using online tools to support and record reflection can be particularly useful when learners are undertaking placements so are not available for face to face sessions. Activities and digital tools including blogs, reflection logs, annotated images, short video presentations, question boards and discussion forums can be used to develop the process of reflection on and for practice. These can be completed at a time suitable for each individual and uploaded to a forum for their tutor/peers to read and perhaps comment on. Christopher (2015) recognises how critical reflection can actively acknowledge the affective impact to the role of a police officer, can assist in rationalising events and reduce personal repercussions. Digital technology can enable discussion of difficult situations and pastoral oversight through synchronous one to one/small group video-conferencing tools whilst not being able to meet face to face. In a study with Metropolitan police force trainees, Wingrave (2011) identifies that whilst useful, the process of reflection in itself does not necessarily bring about change of practice. However, using online tools to record individual reflections provides an accessible shared document where tutors and trainees can trace development and review individual action plans throughout the programme in order to promote change.

Based on the learning theories discussevidence presented in the three individual reports that follow, we posit a fledgling theory of change to inform a BL approach to police learning. We hope this will provide a start to the conversation on introducing BL in police education as part of the larger reform of police L & D in England and Wales.

Theory of Change for BL

A theory of change simply describes how and why an initiative works (Weiss 1995). It answers questions such as what are the inputs required, what activities need to be undertaken to achieve interim outcomes so that it might lead to wider impact on behaviour and society at large. Thus, we attempt to identify the factors that are essential for BL to work and the underpinning assumptions that are required for the intervention to work. We also identify what activities must be undertaken in order to ensure that identified outcomes are achieved in the short or medium term, and three possible mechanisms by which these outcomes would be achieved. Finally, a theory of change also tries to identify the ultimate goals or impact that the intervention should or attempts to achieve.

Figure 1: Theory of Change for Blended Learning

Inputs
- Design team
- L & D practitioners
- Technology
- Curriculum

Outputs
- Assessing learners
- Human centred use of tools
- Scaffolding
- Integration of theory and practice

Outcomes
- Autonomous learner
- Reflective practitioner
- Critical thinking skills
- Informed practice

Impact
- Learning organisation
- Responsive policing
- Better service to public
- Increased public confidence

Unknowns
- Continued support of senior leadership.
- Adequate resourcing.
- Learner self efficacy.
- Organisational support for independent learning.
- Instructor flexibility and willingness to change.

Mechanisms
- Self regulated learning
- Delivery methods matched to content
- Democratisation of learning – learner led

Assumptions
- Availability of appropriate technology and equipment
- Instructors and learners upskilled and motivated
- Opportunities for socialisation made available

Inputs

In order for Learning and Development in police forces to successfully adopt a BL approach it requires a design team, instructors, educators, availability of appropriate technology to host the virtual and blended components of the programme and a fully developed curriculum. It is evident that merely changing the form of training provision (from traditional to BL) will not lead to expected outcomes, it is important to ensure that the content that is being delivered is well thought out and informed by evidence. Since it is important that the blended programme be well designed, it is important that L &

D is well resourced with design experts with technological knowhow, subject matter experts and instructors with pedagogic expertise

Outputs

These refer to actual activities to be undertaken in order to ensure that the desired outcomes are achieved. In this case we feel that the delivery and implementation of BL courses, should begin with an assessment of the learners, their motivation and baseline self-efficacy in order to ensure that their learning is appropriately scaffolded with instructor support on the substantive and technological fronts. Further, the virtual aspects of the BL approach ought to effectively incorporate the use of human centred tools to encourage participation and ultimately support the effective integration of theory with practice through well designed exercises (such as role play, case studies, group work etc.) in face to face interactions.

Outcomes

Enumerating the desired outcomes is important in ensuring that the right actions are taken in order to activate the appropriate mechanisms for engendering change. The interim outcomes of the BL approach are to ensure that the learner is enabled to become a self-regulated autonomous learner, and a reflective practitioner with critical thinking and problem solving skills. The aim is to ensure that subsequently officer behaviour and professional practice in the operational context is thus informed by the theory and the requisite knowledge of how to apply it in a given situation.

Impact

The whole effort to reform traditional police training and education methods through the incorporation of BL approaches is geared towards the long term goals of developing a learning organisation peopled by reflective practitioners with the aim of providing better service to the public. Consequently, one long term goal of improved training would be to facilitate provision of better service to the public, so as to enhance police legitimacy and public confidence in the police.

Assumptions

The posited theory of change is accompanied by a set of assumptions, primary amongst those being the fact that instructors are motivated and have the necessary skills to work with virtual and blended media. Secondly, there is appropriate technology and support in the form of connectivity and equipment. Finally, it is assumed that the course design will incorporate adequate opportunities for socialisation which might be partially virtual, but would necessarily incorporate some in-person interactions between students and instructors, as well to address concerns about socialisation and exposure to the essential aspects of police culture.

Mechanisms

Finally, we identify three mechanisms from the literature which are considered key to ensuring that the BL approach will lead to the desired outcomes.

The first mechanism is the development of self-directed learning – if individual learners take responsibility for their own learning, it will lead to intended individual outcomes (become an autonomous learner) and organisational outcomes (evolution into a learning organisation).

- The second mechanism is matching the method of delivery of knowledge to support different kinds of learners and different kinds of knowledge as evidenced in the literature, in order to elicit the desired outcomes of developing the critical thinking and problem solving skills of a learner.

- The final mechanism is the democratisation of learning – a concept that can be quite difficult in a very hierarchical organisation like the police – but allowing the L & D process to be learner led, with appropriate scaffolding from the instructors might be the way to ensure that the learning lands appropriately. Involving officers in the design and development of learning materials will enable to take ownership of their learning. We admit, this might be a radical departure for L & D departments from the way training is conceived and conducted but working towards developing more it might be a step in the right direction for the professionalization agenda as the evidence in other professions such as medicine or nursing indicates. This will enable officers to be life-long learners outside of the educational setting and is critical for the growth of confidence and professionalism.

Measurement

Finally, we propose that a number of quantitative and qualitative measurement tools can be used to gauge both interim and final outcomes:

For interim outcomes we suggest
- A baseline survey to elicit learners' motivation for self-regulated learning at the outset of the study programme – and compare it with their ability to be autonomous learners by the end of the programme.
- Assessment outcomes to measure learning and reflective practice.
- Surveys and interviews to measure learner satisfaction.

For final outcomes we suggest the following measures can be used:
- Public surveys to measure public satisfaction and confidence in the police
- Number of complaints against the police
- Qualitative assessment of how the organisation responds to particular challenges and learns from mistakes made.

This theory of change is introduced as a starting point for the change programme in police L & D and to guide any subsequent evaluations of the BL programme which is being rolled out nationally.

Blended learning for professional development: emerging issues

'Policing has moved rapidly and inexorably from a 'craft' to a technocrat profession that requires a more rounded, better-educated officer - a critical reflective practitioner - to successfully fulfil the present day role and responsibilities.' Christopher (2015, p336). Regardless of the specific defined priorities for police training and ongoing professional development that are agreed, it seems likely that digital technology will play a part in future L & D programmes. Cost implications, efficiencies of time and the sharing of good practice between regions are all contributing reasons for the propagation of BL. Furthermore, the ways in which many individuals and organisations have adapted socially and professionally in response to the COVID-19 pandemic have normalised online communication and connectivity leading to a greater acceptance of its potential.

Although the tools available for face-to-face and online learning look different, the principles underpinning good teaching and learning apply to both contexts. The emerging issues for designing blended professional programmes centre on:

- Understanding how online and face to face components fit together as a blended and connected whole rather than leaving the learner to make sense of fragmented course content

- Having a clear rationale for why certain theoretical approaches and related activities have been chosen - whether online or face to face.
- Understanding and overcoming the challenges involved in adopting a blended learning approach to police learning and development for organisations.

With the increased number of routes into policing, communication between HEIs, police forces and other training institutions is perhaps more important than ever. It is within this partnership context that BL can be designed as an effective way to support the development of new and serving police officers. We conclude that principles of good teaching and learning transfer across various media and models of learning. Ineffective or dull face to face teaching, or inadequate learning and assessment of learning will not be transformed when moved online simply because of the availability of digital tools. For any context, whether face to face, online, or a blend of the two, a clear understanding of how learners learn, and which activities can best support learning is crucial. Consequently, this report aims to address some of the issues identified above.

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Chapter 2: Rapid Evidence Assessment: What do we know about Blended Learning to inform police education?

Dr Jyoti Belur, Dr Helen Glasspoole-Bird, Dr Clare Bentall and Julian Laufs

Introduction

Recent developments in police recruitment for England and Wales (E & W) have meant that Learning and Development (L & D) departments in all police forces have had to rethink their recruit and in-service officer training capacity. The National Uplift Programme which envisages the recruitment of 20,000 additional officers over three years (2020 to 2023) combined with the roll out of the graduate entry Police Educational Qualifications Framework (PEQF) in 2018 have demanded radical changes in police training.. There has been a move towards adopting more blended learning (BL) methods to cope with some of the capacity issues as well as being the next step in improving the existing learning programmes in police organisations and widening their reach. The onset of lockdown restrictions resulting from the pandemic in March 2020 in E & W added an urgency and impetus to move the training of new recruits and in-service officers online, almost overnight. This has been a time for great change in police forces as they have seen the opportunities and possibilities afforded by remote learning and there is greater appetite at the national and strategic levels to introduce new virtual and blended learning methods.

This research is part of a wider project to introduce blended programmes in police learning and development. The National Learning and Development programme to introduce virtual and blended learning is premised on the fundamental assumption that BL is as good as, or an improvement over, traditional training in terms of effectiveness. It is also considered to be more cost and resource effective. In pursuance of an evidence-based approach, this Rapid Evidence Assessment is aimed at looking at the evidence of what works in blended learning.

Defining blended learning

There is a plethora of definitions for the terms virtual and blended learning (as discussed earlier in this report) however, we have chosen to interpret blended learning as that which incorporates - as part of a deliberate design - elements of both online learning and face-to-face traditional methods. The following definitions explain some of the key terms relied upon:

Traditional learning:
This term more often than not envisages learning taking place in a classroom in a face-to-face situation, where content and learning material is delivered by an instructor to the students. This allows for interaction between teacher and students and between students amongst themselves.

Virtual learning:
The term 'virtual' is an ambiguous one. It refers to, and is often called, 'online learning,' 'e-learning' or 'distance learning' where the tutor and learners are not physically together. Virtual learning requires the learner to access content uploaded to a web-based platform sometimes referred to as a

Virtual Learning Environment. It may include video conferencing functionality which could be conceptualised as 'virtual face-to-face.' Thus, there are two aspects to virtual learning:

- *Online synchronous* - whereby learning takes place with the learner(s)/tutor or learner(s)/peer(s) are available at the same time. This might be facilitated by live video conferencing for a 'virtual face-to-face' experience and tools such as live chat functionality.

- *Online asynchronous* - whereby learning takes place at a time chosen by the learner. Learning content and activities are accessed via the virtual learning environment (VLE). Interaction between learner(s)/tutor or learner(s)/peer(s) is not done in real time.

Blended learning:

The term implies "a formal education programme in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path and/or pace; and at least in part at a supervised brick-and-mortar location away from home." (Staker and Horn, 2012: p.3).

We have chosen to adopt the above definition for blended learning, thus the term 'virtual and blended learning' becomes redundant and we will henceforth use the term 'blended learning' (BL) which would incorporate both online and traditional in–person learning methods. Following this, the REA was focused on comparing whether blended learning is more effective as compared to only face-to-face or only online learning.

Methods

It is key for any REA to follow a number of pre-defined steps. These include four broad stages: (a) identifying a research question, (b) defining structured search and selection criteria and data sources, (c) setting and executing diligent filtering stages and ensuring inter-rater reliability, and (d) synthesising and analysing the findings (Berry, Briggs, Erol, & van Staden, 2011). These stages are discussed as follows:

Research Aim

A scoping exercise revealed a number of studies on various learning methods including blended learning. However, as these were largely descriptive in nature, a decision was taken to review the empirical evidence with respect to the effectiveness of BL as a teaching and learning method as compared to other dominant learning methods, namely the traditional face-to-face classroom teaching and online or digital learning methods. Thus, the key research questions this review seeks to answer are:

1. How does blended learning compare with traditional face-to-face learning and online learning?

2. What factors contribute to the success of blended learning?

Expecting the relevant studies to stem from a variety of fields, the research question was deconstructed to define key and search terms. Scoping searches were used to further refine the relevant search terms that were considered suitable to identify studies related to the effectiveness of BL. These search terms were discussed with subject matter experts and underwent multiple reviews to refine the results. Three categories of search terms were used to cover the type of learning method, the learner, and the outcome measured.

Terms related to the type of training provided, including 'virtual', 'hybrid', 'blended', 'e-learning', 'digital' and 'remote' as well as terms such as 'learning', 'education', and 'training'

AND

Terms related to the learner (i.e. recipients of the training), including terms such as 'adult', 'professional', or 'student'

AND

Terms related to the (desired) outcome, including 'behavio?r change', 'attitude change', 'skills enhancement', or 'upskill*'[1]

After a preliminary review of the results, the search terms were refined to exclude results related to primary schools, children, language learning, and those describing technical applications. This was done to simplify the searches which yielded an overwhelming number of results related to the previously mentioned categories.

Inclusion/Exclusion Criteria

The results were screened against the following pre-set inclusion and exclusion criteria:

- Time restrictions: Only studies published in or since 2016 were included to ensure practical relevance to BL as the landscape of virtual and blended learning is changing rapidly.
- Language restrictions: Only studies available in English were included for practical reasons.
- Geographic restrictions: Only studies conducted in contexts similar to the UK were included as they were considered relevant to education in this context. Thus, studies conducted in the USA, UK, Europe, Australia and New Zealand were considered relevant to the review.

In addition to these basic criteria, the following set of selection criteria was used for screening on title and abstract:

- Studies had to be empirical – using either qualitative and/or quantitative data.
- Studies had to compare two or more types of learning methods or different types (formats) of courses using the same learning method.
- Studies had to report a measured outcome – this could either be student satisfaction, engagement, or knowledge.
- Studies had to be focused on adult learning (including university students, adult learners in community or other settings, or in a professional context).

We were open to including studies that adopted any of these research designs – randomised controlled trials (RCTs), quasi-experimental, or before-and-after measures. We also included studies that used either a qualitative, quantitative, or mixed methods approach.

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[1] ? and * are Boolean operators to cover all spellings and endings for the chosen terms.

After the inclusion criteria were applied, the only exclusion criterion applied was if a study was found unsuitable in terms of relevance for BL in police education on the following grounds:

- It focused on measuring the impact of specific technological tools or software, (e.g. Tracking eye movements to monitor learning)
- It focused on measuring impact of a learning method specific to a particular subject (e.g. using AI programmes for teaching quantum physics)
- It focused exclusively on using social media such as Twitter or Facebook as a teaching tool (as these were not considered relevant for police training)

In the end, 92 [87 studies from the search process plus five studies identified from a previous systematic review on police training by the College of Policing (Dryer-Beers et. al. 2020)] studies were included in the final review. A detailed key to inclusion and exclusion stages can be found in Figure 1.

The Search Process

Searches were carried out across five databases, namely Scopus, Web of Science, the British Education Index, as well as ERIC (Education Research Information Center), and ACM Digital Library. In addition, grey literature search engines (British Library EThOS and Advance HE) were searched for grey literature. Furthermore, nine studies from the previous review were included as they dealt with relevant topics on BL (Dryer-Beers et al, 2020). The sifting process was managed using the EPPI Reviewer 4 software.

Three researchers screened the studies on title and abstract using the first set of inclusion criteria. Inter-rater reliability was measured initially when all three coders screened the same randomly selected 100 studies and was found to be at 69.7%. Disagreements were resolved through discussion for clarifying doubts and improving shared understanding of the inclusion criteria. At this point the code book was refined. An equal number of studies were randomly allocated to the three researchers for screening on title and abstract. Good inter-rater reliability was evidenced by the fact that the studies sifted through for inclusion in the next round of screening were equally distributed in the three randomly allocated lots screened by the three researchers. At the end of the first round of screening on title and abstract 769 studies had met the inclusion criteria and the scope of the review was further refined to focus purely on studies that compared two or more types of learning methods or compared different course designs using the same learning method. For the second round of screening on title and abstract the studies were again randomly reallocated to the three coders and the refined inclusion criteria was applied. Following this round of screening, a total of 115 studies were found eligible for coding on full text. This third round of screening on full text was done by two researchers and ultimately 92 studies[2] (of which 10 studies were systematic reviews or meta-analyses) were included and all primary studies (n = 82) were quality assessed.

Quality Assessment

All 82 studies reporting primary evaluations were quality assessed by 2 researchers. The first 10 studies were jointly assessed by the researchers in order to establish shared understanding of the tool and assessment criteria. We used a bespoke quality assessment tool developed earlier for a similar study (see Belur et al. 2020) to assess qualitative, quantitative and mixed approaches. Studies were

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[2] See Appendix B for full list of studies that were quality assessed.

given quality ratings based on three QA tools[3] (and were rated as weak moderate or strong according to the scoring system laid down by each tool.) The tools were combined to create a bespoke instrument using MS Excel with standardised data input and logic rules so as to automate the scoring process[4]. [Please see Appendix A for exact scoring for each of the studies included in the review]. Thus, of the 82 studies, eight studies scored as strong studies, 24 as moderate and 50 studies were considered weak. As a result, the REA reports findings from a total of 42 studies[5] – including 32 strong and medium studies and 10 systematic reviews or meta-analyses as shown in Figure 1 below.

Synthesis Approach

As the included studies covered a thematically and methodologically highly diverse spectrum, they were too heterogeneous in terms of outcomes measured to conduct a meta-analysis. Instead, the review followed the analysis methods discussed by Thomas and Harden (2008). As such, the synthesis of the findings was conducted in three stages:

- methodological quality assessment and coding of the results and the extraction of information,
- the clustering of the studies in descriptive themes, and
- the construction of analytical categories (Hoon, 2013; Thomas & Harden, 2008).

The studies were synthesised narratively to answer both research questions. The first research question was subdivided into three parts comparing BL with traditional learning, BL with digital learning, and comparing digital and traditional learning methods.

In answering the second research question a number of themes arose that were related to improving engagement, satisfaction, and learning outcomes. These were thematically coded under the following headings: improving the motivation of both the learner and instructor; variety of tools used to increase engagement and learning; encouraging greater learner participation; improving responsiveness of trainers to learner needs; and encouraging learner autonomy. The step of creating distinct analytical categories and 'going beyond' the content of the original studies (Britten et al., 2002) was at times rather difficult, as many of the themes/outcomes were highly interconnected and influenced more than one of the intended outcomes of improving engagement, satisfaction and learning. (Thomas & Harden, 2008). For example, social presence may be important for engagement but as such may be equally as important to achieving learning outcomes. While the themes are practical and useful, they are to some extent overlapping. This can be attributed to the complexity of the education and learning process which makes it hard to distinguish between clear outcomes.

When combined, these thematic findings highlight some of the guiding principles underlying BL design factors that could potentially enhance learning outcomes. Thus, we focused on identifying personal factors that related to the learner and instructor, and pedagogic factors that related to the design of the learning programmes. The five themes identified in the first round of synthesis were reconfigured in the discussion section with the intention of informing how BL could best deliver intended learning outcomes for police education.

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[3] The Mixed Methods Appraisal Tool (Pluye et al., 2011) for appraising mixed-methods studies; the Critical Appraisal Skills Programme Qualitative Checklist (CASP, 2017) for appraising qualitative studies, and the Effective Public Health Practice Project Quality Assessment Tool for appraising quantitative studies (EPHPP, 2017). The bespoke instrument is available from the authors on request.

[4] A different scoring system to that recommended by authors was implemented for use with both the CASP and MMAT tools. For details see Belur et al. 2020.

[5] See Appendix A for full list of included studies
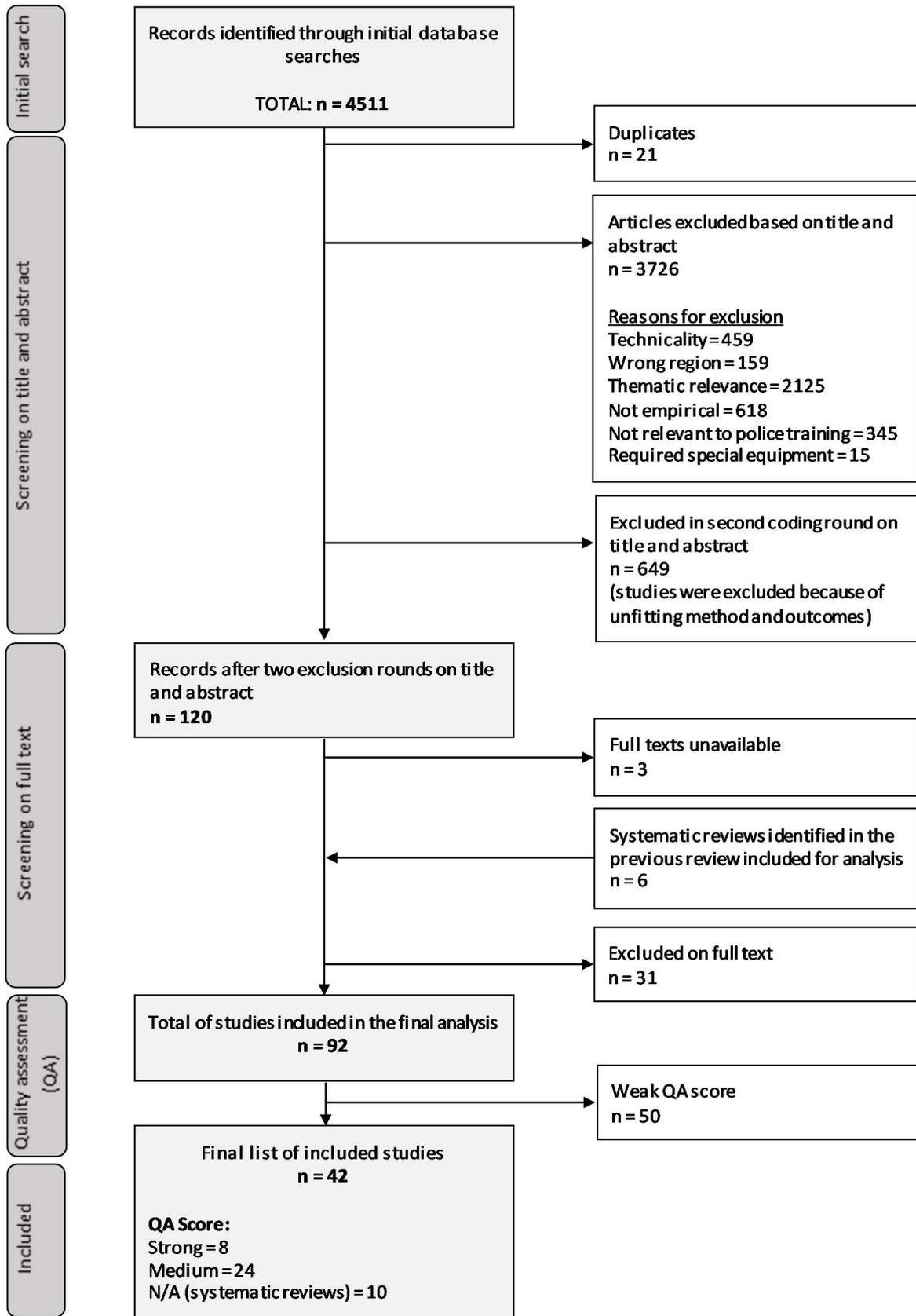
Figure 1: Prisma flow diagramme of search process

Results

Of the 42 studies included in the REA, six studies (including two systematic reviews) compared blended learning to face-to-face teaching; one study compared blended learning to virtual methods; 10 studies (including two systematic reviews) compared virtual learning to face-to-face teaching; five studies (including two systematic reviews compared blended learning with both virtual learning and face-to-face learning. The remaining studies focused on different aspects of a single method of learning – mainly different types of digital delivery (10 studies including one systematic review) as well as blended or flipped learning (three studies including one systematic review).

Of all included studies 21 studies (50 %) were located in the USA, 3 studies (~7 %) were in the UK, 12 studies (28.5 %) were from European countries and 6 studies (~14 %) from other countries (Australia, Canada and one systematic review from China[6]).

A breakup of the research designs used by the studies indicated that 10 of the 42 studies (23%) were systematic reviews or meta-analyses; 18 studies (42%) used a quasi-experimental design; eight studies (19%) were RCTs; five studies (11%) used a before-and-after design and only one study had an after-only design. Almost all the studies were focused on university courses (with a few associated with a professional degree) with only one exception of a course that was industry based (e.g. Beinicke and Bipp 2018, reported on the outcomes of a course delivered to corporate vocational trainees).

RQ 1: How does blended learning compare with traditional face-to-face learning and online learning?

The first research question explored the effectiveness of BL as compared to other standalone learning methods. Effectiveness of training is measured at various levels in increasing order of impact – learner satisfaction, learner engagement, knowledge gain, and behaviour change (Kirkpatrick & Kirkpatrick 2006). We found that most studies reported on one or more of the first three levels of effectiveness. It is presumed that higher learner satisfaction and engagement will be linked to better learning outcomes for students. Although this might be pedagogically sound and make logical sense, our study did not find that this link was automatic or necessarily positively associated. Some studies reported higher student satisfaction with a teaching method, but it was not necessarily associated with higher learning as measured by exam grades (Ebner and Gegenfurtner 2019). Similarly, some studies indicated that although students did not feel confident in their subjective measurement of success at the end of the online course, their learning over a period of 8 to 10 weeks was just as effective as that of students in face-to-face classrooms (Beinicke and Bipp 2018). In this section we are synthesising the findings from the studies comparing two or more types of learning formats mainly on learning and satisfaction outcomes.

Findings with respect to this research question were subdivided into three parts:

BL compared with traditional face-to-face teaching

Eight studies compared BL with traditional face-to-face learning methods. The evidence regarding this was mixed - with four studies, (including three systematic reviews) finding BL to be more effective than traditional face-to-face methods (Webster et al. 2020, Liu et al. 2016, Vo et al. 2017, Bolsen et

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[6] This study was an outlier, since the systematic review included studies conducted from countries of interest.

al. 2016)) for knowledge gain; one study finding it marginally less effective than face-to-face teaching (Monk et al. 2020), two studies saying students performed equally as well as traditional learning (Littenberg-Tobais & Reich 2020, Weightman et al. 2017) and one study saying that BL was better than face-to-face teaching in terms of long term memory retention but less so as compared to digital learning (Michael & Michael 2019).

However, in terms of the actual outcome measures reported, two studies report an actual improvement in learning grades in a BL environment as compared to traditional methods (Webster et al. 2020; Vo et al. 2017). In addition, the number of successful completions in the BL format was higher than the traditional format (Webster et al. 2020) mainly because it allowed students to learn at their own pace. Further, BL was found more advantageous for female students and led to much improved scores for STEM disciplines over their male counterparts and the non-STEM subjects (Webster et al. 2020; Liu et al. 2016). The implications of these findings will be discussed later in the paper. In contrast, Monk et al. (2020) found that male students tended to do better in BL settings as compared to face-to-face settings. The explanation for this apparent contradiction can be located in the description or type of blended setting since the BL course where females did better than male learners was described as being collaborative and encouraged group working which is said to suit the temperament of females more (Webster et al. 2020), whereas the blended part of the course that Monk et al. (2020) are evaluating which differed from the fully face-to-face format consisted of asynchronous individual learning online and not collaborative tasks. Thus, the design and structure of the course plays a very important role in how the course is perceived and the impact it has on learners. Other reasons for why BL might have an advantage include the ability for students to review material available online flexibly and multiple times (Liu et al. 2016); or because it optimally blends both kinds of learning modalities to suit the requirements of different students (Michael & Michael 2019).

Contrarily, Monk et al. (2020) found that the average marks in a blended class were lower compared to its traditional counterpart, but not significantly so. However, students preferred the face-to-face format compared to the blended one mainly because they perceived classrooms to be better for asking questions and receiving instant responses from the instructors, as well as being a less distracting environment than being online (Monk et al. 2020).

BL compared with online learning

Only one study compared BL directly with online learning (Phillip & O'flaherty 2019) but four others (including a systematic review and a meta-analysis) included a comparison of BL with online as well as traditional classroom teaching - in essence, comparing all three types of learning formats.

Two studies found no difference between BL and online learning in terms of learning outcomes (Phillip & O'flaherty 2019, Weightman et al. 2017), and three studies identified the superiority of one form of BL - flipped instruction (which they considered to be blended even when delivered purely online or only face-to-face) over either standalone formats (Liu et al. 2016, Michael & Michael 2019, Bolsen et al. 2016)

The only study that compared blended courses with online flipped learning concluded that students who were previously used to attending face-to-face sessions were less accepting of the online aspect of the course, but there was overall no difference in the learning outcomes between the two types of delivery (Phillip & O'Flaherty 2019). The study concluded that regardless of the medium - online or face-to-face, - it was the flipped aspect of learning that was most effective. Similarly, Weightman et al. (2017) found no statistically significant difference in terms of student learning outcomes between

all three formats of learning. Also 14 of 19 studies reported no student preference for any one particular format and the remaining studies reported advantages and disadvantages of various formats without students expressing a preferred option. The authors conclude that consequently, the choice of format is totally dependent on educators based on personal preference or contextual conditions.

Liu et al. (2016) on the other hand found that BL resulted in better outcomes than either online or face-to-face learning methods by themselves. They suggest one of the reasons BL might be more effective than purely online learning might be because blended learners are more engaged and less likely to experience isolation or reduced interest in the topic. Bolsen et al. (2016) found that the BL courses resulted in the best outcomes for students in terms of course content and knowledge as compared to the other two formats. However, their findings suggest that although overall BL and online learning were superior to traditional face-to-face learning, there was a greater drop-out rate in the online only learning format. Michael and Michael (2019) found that each learning method had a different impact on learner memory with online learning being most suited for long term memory.

Face-to-face compared with online learning

A total of nine studies (including one systematic review and one meta-analysis) compared traditional face-to-face learning with online learning and five studies (including one systematic review and one meta-analysis) compared face-to-face with online as well as some form of blended learning.

Although a number of studies found that there was little difference between learning outcomes for the face-to-face and online modalities (Lucero 2017, Van der Beek et al. 2020, Stohr et al. 2016, Butz and Stupnisky 2016, Soper 2016, Ebner and Gegenfurtner 2019, Gegenfurtner and Ebner 2019, Weightman et al. 2017), the findings were a bit more nuanced when the subject matter, the type of learner and student satisfaction or preference were considered, as discussed below.

Three studies claimed that the learning outcomes were better for face-to-face students as compared to fully online courses (Stephan et al. 2019, Mitra and Beenen 2019, Callister and Love 2016). Additionally, a number of studies reported students preferred face-to-face teaching over the online format (Stephan et al. 2019, Ebner and Gegenfurtner 2019, Gegenfurtner and Ebner 2019).

Although only two studies claimed that online learning led to better learning outcomes for students as compared to traditional face-to-face teaching (Beinicke & Bipp 2018, Bolsen et al. 2016), some studies reported advantages associated with online learning, in that it was more cost and time effective (Soper et al. 2016) and could use off the shelf online materials for particular courses (Bolsen et al. 2016). However, other studies seemed to suggest that online training can only be effective if properly resourced and supported (Stephan et al. 2019, Stohr et al. 2016, Bolsen et al. 2016, Butz and Stupnisky 2016) and incorporated all the elements of a good face-to-face teaching (Van der Beek et al. 2020, Lockman and Schirmir 2020).

The findings indicate that the preference for whether instructors should choose face-to-face or online methods would depend on the kind of learner and the type of content being taught. Digital methods were found to be more suitable for students with high self-efficacy, autonomy and self-regulation (Lucero 2017, Beinicke and Bipp 2018, Mitra and Beenen 2019, Bolsen et al. 2016, Stohr et al. 2016). Furthermore, online or virtual learning methods were better suited to deliver knowledge that was to be retained over long term or for what they term as factual or declarative knowledge (Beinicke and Bipp 2018, Michael and Michael 2019). Alternatively, face-to-face methods were especially suited for students with low self-efficacy to begin with (Lucero 2017) and for topics that required greater

interaction with the instructor (Callister and Love 2016), as well as for teaching procedural knowledge or application of theory (Beinicke and Bipp 2018).

The evidence thus indicates that whilst BL has distinct advantages and can in some instances be more effective than either traditional face-to-face or online learning methods by themselves, it is not unequivocal about the superiority of any one learning method over the others in terms of knowledge acquisition. The evidence leads us to concur with Lockman and Schirmir (2020) who found that learning outcomes in all three methods are roughly similar and the focus should be on identifying whether specific practices or elements are more productive in particular methods. Similarly, Beinicke and Bipp (2018: 524) conclude that, "it is not the training setting or delivery media per se that leads to higher levels of trainings success in the long run but in order to be effective, trainings and their theoretical framework should be designed taking especially the type of learning content… [*and we add - type of learner*] into account". Thus, the discussion section will focus on identifying those aspects of all three types of learning methods that might possibly be useful for, and relevant to, designing a BL approach for police education that incorporates elements of both face-to-face and virtual learning.

RQ 2: What factors contribute to the success of blended learning?

The evidence indicates that the effectiveness of any form of learning, especially blended forms of learning, is dependent on course good design that caters to all types of learners, and appropriate tutor support. We therefore highlight some of the key themes in the research evidence that have implications for the design of BL for police forces that incorporate a judicious blend of both face-to-face and online delivery methods. These relate to the nature of the learners, the strengths and skills of the instructors (learning and development practitioners), and design considerations before, during and after delivery.

Learners

The studies clearly illustrate that learner motivation is an important factor for all learning, but it also affects learners' preferences for traditional, online or blended options. The studies conclude that learners with high confidence in their own ability to manage their learning, who have an orientation towards reflection and experimentation, may well choose and perform better in fully online learning environments. Mitra and Beenen (2019) found, for example, that these learners had more intrinsic motivation, a higher level of interest in the content of a course, than the more performance-oriented learners who chose a traditional face-to-face mode of learning. Both extrinsic and intrinsic motivations play a role in shaping learning. For example, learners with a performance / goal orientation can do well, as they are motivated by the desire to get good grades and to compare well to their peers. Performance can be more obvious in the face-to-face environment, which might explain the preference for this mode for learners with this orientation. Learners who have an orientation towards mastery (i.e. mastering the subject) are more concerned with doing the best they can. Being less concerned with performance in relation to others may explain why they are happier with an online learning environment where they have more obvious responsibility for their own learning. As Mitra and Beenen (2019) conclude, taking different types of motivation into account in course design is important. Their results also suggest that incorporating strategies for increasing intrinsic motivation, and mastery, rather than performance, orientation (i.e. getting learners to think less about how well they are doing and more about the learning itself) will help learners benefit more from the virtual learning environment.

Linked to motivation are learner self-efficacy and self-regulation. Self-efficacy, which indicates judgements about one's own abilities to complete a task and to what level of competence, correlates strongly with learning (see Beinicke and Bipp 2018 for a discussion of relevant literature). Learners with high self-efficacy and the ability to self-regulate their learning cope well with the independence and flexibility of virtual learning, particularly with asynchronous tasks, where they have to manage their own time and decide for themselves how much work to do for a particular activity. In fact, some of the studies suggest that these learners may well choose a fully online learning option because they already have confidence in their own abilities to manage their learning (see e.g. Lucero 2017, Mitra and Beenen 2019). In contrast, learners who are less accustomed to this way of working and feel less confident in taking responsibility for their own learning, may prefer the familiarity of a face-to-face in-class experience. There are also examples of these students feeling more anxious or angry in the online environment as it takes more effort and time to do the work (Stephan et al. 2019). It is crucially important, therefore, that thought is given to how to support learners to develop self-regulation (Beineke and Bipp 2018). Where scaffolding and support for learners to develop these skills is not included, there is an inbuilt risk that the more independent learners do better, and less confident learners do worse within the BL environment (see Stohr et al. 2016)

When designing BL courses, learning and development practitioners therefore need to consider their learners' motivations, their levels of self-efficacy and their ability to regulate their own learning. This may be linked to their previous experience of learning, their previous success and levels of confidence in their ability. For example, those with lower confidence in their abilities may want more tutor – learner interaction (Jaggers and Xu 2016). Understanding these will help inform decisions about which mode to use for which aspect of a course, and what types of activities and learner support to include. It is important also to note that where learners have moved from face-to-face to online, there is less acceptance of this format (Phillips and O'flaherty 2019), a particular consequence of the current pandemic, for example. Introducing virtual elements of a BL course early is therefore important to gain acceptance of this mode of learning.

There are many types of support instructors or tutors can provide. For example, the evidence shows that in BL regular responses and messages from tutors build the confidence of learners who prefer tutor - learner interaction. A clear, published timetable for activities, with deadlines, plus websites or virtual environments that are easy to use and understand, and a predictable pattern to the design of the learning, all help learners manage their learning (see Webster et al. 2020). Clear timescales for activities act as formative assessment opportunities, which have a positive impact on final assessment as they reduce learner control to some extent but thereby avoid learner procrastination (Ee et al. 2018). Explaining the reason for a type of activity, and why an activity may be offered in a virtual rather than face-to-face form, also helps learners understand what type of engagement is expected of them (see Betihavas et al's (2016) discussion of preparation for the flipped classroom). For example, Monk et al. (2020) report learners felt the need for more self-regulation and time management strategies on a course where the virtual activities were purely asynchronous online activities with no opportunities for collaboration. They concluded that although a blended approach is as successful as face-to-face, this only works if the online activities are well designed and relevant.

Although learners may start with different levels of self-efficacy, a good course will increase all learners' ability to regulate their own learning, so that they are better prepared for a professional life where ongoing learning is required. The evidence shows that a judicious blend of face-to-face and virtual can help achieve this. For example, as Webster et al's (2020) study shows better outcomes with a mix of pre-recorded or pre-written materials which can be accessed by the student independently

at their own speed, combined with opportunities for peer learning and interaction with tutors in a face-to-face environment.

Incorporating virtual informal spaces where students can socialise and collaborate for group activities also support learning, particularly as they highlight the value of peer learning (Butz and Stupnisky 2016). The presence of the tutor online supports the development of a sense of community amongst learners (Cho and Tobias 2016).

Instructors

As with learners, instructors have different preferences and skills (see Michael and Michael 2019), and this preference may well influence the efficacy of a particular mode of teaching and learning. Not all have experience or confidence with BL and therefore there can be a benefit of making the best use of a tutor's skills in deciding how to design and run a course. However, given that there is evidence of the value of a blended approach for learners through activities such as a flipped lecture or classroom (see Goedhart et al. 2019), supporting instructors or tutors to develop their skills and open their minds up to non-traditional methods will have long term benefits for learners. Where a decision has been made to move to BL, then supporting tutors to develop skills for online teaching, as Phillips and O'flaherty (2019) recommend, will help tutors develop a more learner-focused, mentoring type approach to supporting learners. Tutors may also find that moving to activities such as a flipped classroom, takes some of the pressure off, allowing them to be more responsive to learners (Goedhart et al. 2019). Webster et al. (2020) also note that the inclusion of the face-to-face interaction with the tutor and group work can be important as part of the blended approach but require the tutors to not only set up in-class activities to facilitate interaction between learners and with tutors, but also be prepared to relinquish control over the activities.

Course design – before

In thinking about course design, learning and development, practitioners need to consider what to do to prepare learners for the learning. In contexts where learners are used to and expect a face-to-face learning experience, being clear about what is expected and required in a virtual and blended environment is important. Learners need to spend their time on the learning, not on trying to make sense of a virtual platform or struggling with a piece of software. As with all course design, constructive alignment - where learning outcomes, learning activities and assessment align - should govern design. Learners need to understand the links between the activities they are engaged in and the learning outcomes and assessment for the course. For example, as Cho and Tobias' (2016) study shows, just including discussion spaces in a BL environment and hoping this will achieve learning is not sufficient, if it is not clear how the discussion links to the learning outcomes. For example, discussion makes sense when learners are being asked to 'co-create' and collaborate and receive appropriate and timely feedback from the instructors.

Managing expectations so that learners are not disappointed is also important for their motivation and ongoing engagement. The model of a flipped classroom where there are pre-class activities that can be done at the learner's own pace leads to deeper learning, though again not all learners will perceive it as effective. The combination of activities done at the learner's pace, (that is, self-regulated), prior to in class activities and usually involving peer learning, help with focus and quality of study (Goedhart et al. 2019).

IT preparedness was identified as one of the most important issues for both instructors and learners by a number of studies which considered access to, and skills in using, the technology as being crucial to the success of BL (see Van der Beek at al 2020, Mitra and Beenen 2019). Face-to-face and virtual learning environments can both be effective, but however successful a learner has been in their previous learning, they will struggle if they are not supported to learn how to use the software and virtual learning platforms that are required for a particular course. Familiarity, and early introduction to virtual elements on a course are important (Phillips and O'flaherty 2019). Similarly, tutors need support and training to understand what the software and platforms can do, to be able to design effectively for their use. In terms of preparation for particular pedagogical models, such as the flipped classroom, this can be more resource intensive, with tutors having to prepare the pre-class materials but also then facilitate in class interactive activities. However, as resources can be re-used, this initial time investment may need to be repeated only when materials need updating (Betihavas et al. 2016).

Course design – during

The evidence also illustrates that there are a number of considerations learning and development practitioners need to take into account during the learning in order to increase engagement, satisfaction and learning.

It is also important how and when the tutor interacts with learners, particularly in the virtual environment, both asynchronously and synchronously. Learners need regular messaging and input from tutors, whether this be to help them understand an activity, prompting them to participate (see Abbott and Provident 2016) or to comment on their learning. A caring environment, tutor enthusiasm and opportunities to interact with a tutor all contribute to increased learner presence and engagement (see Jaggers and Xu 2016). The studies illustrate that instructors do not necessarily need to provide a lot of input into students' discussions to ensure learning, but learners do need to feel that the instructor is present and engaged (see for example Cho and Tobias 2016). Building a sense of an online community and generating opportunities for student interaction is key (see Callister and Love 2016).

Though engagement with the instructor increases interest and motivation amongst learners, it is also important to increase the interaction between learners. Learners with less confidence, who prefer a traditional face-to-face setting, may rely on instructor – learner interaction (Jaggers and Xu 2016) and will need encouragement to see the benefit of peer learning, which they argue is a key element of well-designed virtual learning.

The studies show this can be achieved, for example, with the use of games either as a type of warm-up exercise for learning, or as a more focused learning activity (see Karay et al. 2020, Fu et al. 2016). The use of short videos or animations or narrations and text all can contribute to maintaining learner interest (Dousay 2019). Similarly mixing virtual practice opportunities, such as simulations (see Matilla et al. 2020), or virtual internships (Theelen et al. 2020), with other learning in a blended learning environment can improve both confidence and preparedness for the real professional environment. The simulation of the authentic professional environment where learners can see consequences for actions, provides learners with a more realistic sense of what they will face in their professional roles (Theelen et al. 2020). Choice of activity is a key stage in course design and needs to link to the type of content being learned, particularly in relation to declarative and procedural knowledge.

Van der Beek et al. (2020) demonstrate how moving from course content focused on declarative knowledge (i.e. factual content) to procedural knowledge (i.e. how to implement that knowledge) is

important in courses designed for professional education. The implementation phase is essential. Beineke and Bipp (2018) make a similar point that considering the type of knowledge and how best to deliver that knowledge is an important element in course design. For example, their study suggests that learning procedural knowledge (applying declarative knowledge), for a professional setting, will require trying out realistic scenarios, being able to interact in real time with colleagues and tutors, making mistakes and trying again, all of which is arguably easier within a face-to-face environment. An example of this is illustrated in Callister and Love's (2016) study where learners learned negotiation skills more effectively in the face-to-face environment.

Course design – after

The success of a learning programme depends primarily on meeting the learning outcomes in the short and long term, which, one might suggest would be greater if the learner is both engaged and satisfied with the learning programme. However, engagement and satisfaction are not only instrumental to learning, but can be ends in themselves in order to measure the success of a course. Furthermore, although engagement, satisfaction and learning are linked, they are not necessarily mutually dependent. It is possible that a learner is not fully satisfied, i.e. has not enjoyed all aspects of the learning experience or the mode of learning, but has learned a great deal and succeeded in the final assessments (see Betihavas et al. 2016 for an example of this in relation to the flipped classroom model). There is a balance therefore to be struck between trying to improve engagement, and feelings of satisfaction, but with the ultimate priority to achieve the learning that is required in order for the learner to operate successfully as a professional. Feelings of satisfaction might be negatively influenced by the increased workload from groupwork and virtual learning activities that require self-regulation, but still have positive overall learning outcomes (Betihavas et al. 2016). Alternatively, Lee (2016) reports higher satisfaction amongst learners on a course who were given the opportunity to choose how to learn and decide what order to do activities. This did not necessarily lead to better learning outcomes but did increase satisfaction with the learning experience.

Furthermore, the way assessments are designed can also lead to improving learning outcomes. This refers to both formative and summative assessments. For example, Karay et al's (2020) study reports that when learners can be encouraged to see formative testing as a learning experience, and if these tests are designed to be done at the learner's convenience with the use of resources, they have a greater impact on learning. On the other hand, Ee et al. 2018 suggest that giving learners a flexible window within which to complete assessments, but still have some kind of deadline, helps with keeping the learners on track and also with self-regulation. Additionally, having flexibility may improve learning outcomes, but even if there is no difference in learning outcomes, greater flexibility contributes to a perception that learners are in control and leads to greater satisfaction with the learning experience (Lee 2016).

Discussion

The evidence indicates that all three types of learning methods face-to-face, virtual, and blended learning environments are effective in achieving knowledge acquisition. But the studies also show that a blended learning approach can lead to improved outcomes for learners (e.g. Beineke and Bipp, 2018, Bolsen et al. 2016, Lui et al. 2016, Vo et al. 2017, Webster et al. 2020), as the BL environment can provide the optimum conditions for the different types of learning required.

The national agenda in E & W to support and encourage a BL approach to learning and development of recruit, as well as, in-service police officers is intended to improve the training and education provision to police officers, and is part of the wider professionalization agenda. The movement towards adopting a BL approach to police L & D predates the pandemic, and was intended to address two important issues – delivery of more effective training which is also cost and resource efficient, as well as coping with the enhanced training requirements following on from the introduction of the PEQF and the National Uplift Programme. The impact of the lock down restrictions during the pandemic in 2020 made it necessary for organisations to move all or most of their training online, and demonstrated that it is possible to do so further fuelling the general appetite for more flexibility in training that BL can offer.

A note of caution must be introduced, if police organisations adopt BL by default which means randomly assigning parts of the curriculum to virtual or face-to-face sessions more out of necessity (as in the case of the pandemic), and/ or convenience (saving resources, time and costs) the results may not be significant. The true impact of BL, as the evidence presented above shows, emerges from good design and delivery. However, merely stating this, although helpful, does not provide any direct guidance on how course designers might begin making decisions about what parts of the curriculum might be best delivered via online platforms and others in face-to-face sessions

The findings of the REA indicate that four factors ought to be considered before decisions are made about which methods of learning would be most appropriate to deliver what type of content and for which type of learner. They depend on the answers to a series of questions

- What is the type of knowledge being delivered?
- For what purpose?
- Does the content require memorisation or assimilation? and finally,
- What are the needs of the learners?

Thus, decisions have to be made about whether the content is declarative (i.e. facts and concepts which need to be remembered and understood) or procedural (i.e. application of theory which need analysis, evaluation and problem solving skills) and whether the learner has self-efficacy (can learn autonomously) or requires a great deal of support from the instructor (needs interaction to learn). Based on the finding from the wider evidence we have come up with a simple initial set of questions that might help L & D professionals to make preliminary decisions about how a blended approach might work. This simple tool (which is not exhaustive) considers the content of the course, the purpose of the knowledge transfer, what tools are required to deliver the highest learning impact taking into account the type of learner involved.

We hasten to add that this tool comes with a caveat that this is purely a starting point for decision making for L & D practitioners, it would additionally involve wider discussion and collaboration between subject matter experts, pedagogy experts, technical designers and the learners themselves.
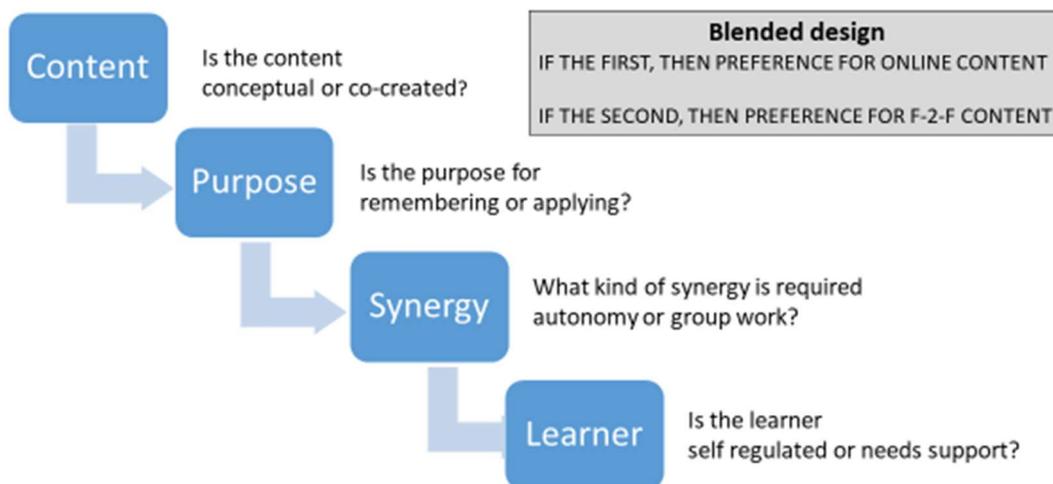
Figure 2: Toolkit to guide BL course design

In making decisions about the course content, most L & D departments in E & W are familiar with Bloom's Taxonomy[7], where the lower levels of the pyramid (remember, understand,) could roughly equate to declarative knowledge and the higher levels (evaluate, create) referring to procedural knowledge aspects of the course, with the interim levels (apply and analyse) spanning both kinds of knowledge. Similarly, it would be useful if L & D departments invested in enquiring into the type of learner, their motivation and their needs prior to designing a course. Additionally, the design of a course is more nuanced than simply putting a chunk of learning material online for students to consume at their own pace followed by face-to-face sessions to discuss cases or conduct reflective practice exercises. It requires appropriate scaffolding at each level of the learning process so that a truly blended approach will support online learning with the help of focused tutorials and perhaps record face-to-face sessions and relevant material be made available online to students to go over as many times as they require in order to consolidate learning. Providing appropriate instructor support at each level is key to the success of a BL approach.

A visualisation of the resulting architecture of a BL programme by design that incorporates Bloom's taxonomy (which most L & D departments in E & W are familiar with) and the findings from the literature distilled very simplistically in Figure 3 below as the first step towards how BL could employ virtual and face-to-face learning methods most effectively so that the sum is greater than the parts and the synergies of the two methods produce better outcomes.

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[7] For details on Blooms Taxonomy see https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/
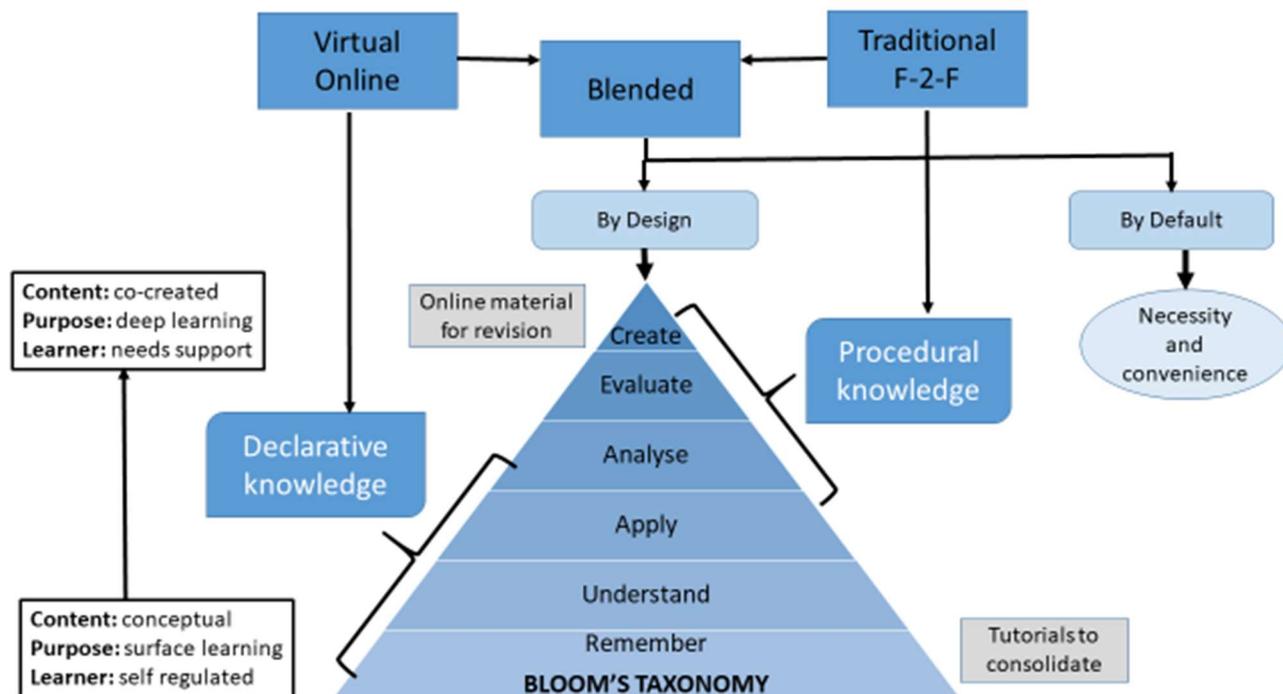
Figure 3: Architecture of BL approach using Bloom's Taxonomy

Additional points to consider

Although the findings of the REA are encouraging for police organisations to adopt a BL course design for police training, there are a number of important points to note:-

- The first is that learners' perceptions may be that they learn more in the face-to-face environment, reflecting their preference for that mode, even though this is not necessarily reflected in objective measures of learning. Therefore, course designers need to think about how and when they measure learning, give feedback to learners on performance and mastery, taking into account that the evidence shows more learning gain over time within a BL environment.

- The second point is that, given not all learners are equally equipped to cope with the self-regulation demands of the virtual elements of a course, there can be greater variation in individual learning outcome for learners, if learners are not suitably supported.

- Thirdly, although moving substantial sections of the training on to virtual platforms might be cost, time and resource effective in the long run, it requires adequate resourcing up front in order to design a course and to provide the necessary support for individual learners.

- Fourthly, it is important for L & D departments to ensure that they provide adequate opportunities for officers (especially recruit officers) to socialise to ensure learners do not suffer the same degree of isolation from other learners as in a purely online format and are exposed to the positive aspects of police culture and working practices.

- Fifthly, the design of assessments needs to align, as stated above, with the learning outcomes and the learning activities. Thus, assessment design in the BL environment needs to consider how the co-creation and collaborative activities are reflected in assessments of learning.

- Finally, it is important that L & D departments have a well-developed evaluation plan in place to assess the impact of BL and to ensure that they are collecting feedback from trainers and learners to inform the next round of L & D activity.

Limitations

Although the search terms uncovered a large number of studies, there were few high quality studies to make up the evidence base on the topic. We suggest two explanations for why this might be so – firstly, the low quality rating to a large number of studies that met our inclusion criteria (50 out of 82) is either the artefact of the Quality Assessment Tool we were using – which may not have been suitable for assessing, especially the quantitative studies, in the domain of educational research. Alternatively, there might be practical and ethical issues with conducting experimental or quasi experimental studies in the field of education and researchers are perhaps limited in their ability to adopt a rigorous methodology for the purposes of building an evidence base.

Secondly, there might have been other relevant studies uncovered, had we completed forward and backward searches of the bibliography of included studies, however due to lack of time and resources, this could not be done.

Finally, the REA was specifically aimed at informing the BL programme for police organisations and therefore only what we considered relevant evidence has been analysed in detail.

Conclusion

In conclusion, the evidence indicates that purely adopting a BL approach to replace traditional teaching methods will not guarantee better learning outcomes or greater satisfaction for the officer learners. Instead, the adoption of BL offers the opportunity for improved learning and a better experience for learners, provided it is adapted to suit the learner requirements and the type of knowledge being delivered. There is a need for L & D teams in police forces to understand the needs of their learners up front, gauge their level of self-efficacy prior to commencing the training programme, set their expectations about the modalities of the learning programme early on, equip them with adequate tools and skills to work in a blended learning environment, pay careful attention to the design of the course and the assessment of outcomes, and finally, provide adequate opportunities for peer interaction and appropriate feedback from instructors throughout the learning process.

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Appendix 2A – List of included studies (n = 42)

No.	Author	Year	Description of course/courses being evaluated	Type of study	QA score
1	Littenberg-Tobias & Reich	2020	Blended vs. face-to-face	Quasi-experimental	Medium
2	Monk et al.	2020	Blended vs. face-to-face	Quasi-experimental	Strong
3	Webster et al.	2020	Blended vs. face-to-face	Quasi-experimental	Medium
4	Vo et al.	2017	Blended vs. face-to-face	Systematic review	NA
5	Ee et al.	2018	Different types of blended delivery	Quasi-experimental	Medium
6	Alessio et al	2018	Different types of digital delivery	RCT	Strong
7	Asiri et al.	2019	Different types of digital delivery	RCT	Medium
8	Brasier et al.	2019	Different types of digital delivery	RCT	Medium
9	Cho & Tobias	2016	Different types of digital delivery	Quasi-experimental	Medium
10	Dousay & Trujillo	2019	Different types of digital delivery	Quasi-experimental	Strong
11	Jaggars & Xu	2016	Different types of digital delivery	After only	Medium
12	Kapp et al	2020	Different types of digital delivery	Quasi-experimental	Strong
13	Lee et al.	2016	Different types of digital delivery	RCT	Medium
14	Lockman & Schirmer	2020	Different types of digital delivery	Systematic review	NA
15	Abbott & Provident	2016	Different types of digital delivery	Before and after	Medium
16	Phillips & O'flaherty	2019	Virtual vs blended	Quasi-experimental	Medium
17	Beinicke & Bipp	2018	Virtual vs. face-to-face	RCT	Strong
18	Butz & Stupnisky	2016	Virtual vs. face-to-face	Quasi-experimental	Strong
19	Callister & Love	2016	Virtual vs. face-to-face	Quasi-experimental	Medium
20	Lucero et al.	2017	Virtual vs face-to-face	Quasi-experimental	Medium
21	Mitra & Beenen	2019	Virtual vs. face-to-face	Quasi-experimental	Strong
22	Stephan et al.	2019	Virtual vs. face-to-face	Quasi-experimental	Medium

23	Van Der Beek et al.	2020	Virtual vs. face-to-face	RCT	Medium
24	Stöhr et al.	2016	Virtual vs. face-to-face	Quasi-experimental	Medium
25	Ebner & Gegenfurtner	2019	Virtual vs. face-to-face	Meta-analysis	NA
26	Gegenfurtner & Ebner	2019	Virtual vs. face-to-face	Systematic review	NA
27	Soper	2017	Virtual vs. face-to-face vs. self-study	RCT	Medium
28	Bolsen et al.	2016	Virtual vs face-to-face vs blended	Quasi-experimental	Medium
29	Michael & Michael	2019	Virtual vs face-to-face vs blended (flipped)	Quasi-experimental	Medium
30	Liu et al.	2016	Virtual vs face-to-face vs blended	Meta-analysis	NA
31	Weightman et al.	2017	Virtual vs face-to-face vs blended	Systematic review	NA
32	Betihavas et al.	2016	Flipped classroom	Systematic review	NA
33	Chen Fei et al.	2017	Flipped classroom	Systematic review	NA
34	Goedhart et al.	2019	Flipped classroom	Before and after	Medium
35	Fu et al.	2016	Game based learning	Systematic review	NA
36	Karay et al.	2020	Mobile testing for formative assessments	RCT	Medium
37	Mattila et al.	2020	Online simulation tool	Before and after	Strong
38	Theelen et al	2020	Virtual internships	Before and after	Medium
39	Park & Kim *	2016	Virtual tutee system for academic learning	Quasi-experimental	Medium
40	Benson et al. *	2019	Academic integrity in e learning module	Before and after	Medium
41	Chen et al. *	2018	Various learning tools for computer studies	Meta-analysis	NA
42	de Hei et al. *	2020	Intercultural competence in classrooms	Before and after	Medium

*Studies were coded but findings were not relevant to the research questions.

** Studies were basically reporting findings based on the same data as another study by the authors included in the REA.

Appendix 2B: List of all included studies with quality assessment scores (n = 82)

NoNo	Item	Year	Type of study	QA Score
1	Abbott & Provident (2016)	2016	Before and after	Moderate
2	Akcaoglu & Lee (2016)	2016	Quasi-experimental	Weak
3	Alessio et al. (2018)	2018	RCT	Strong
4	Asiri et al. (2019)	2019	RCT	Moderate
5	Beinicke & Bipp (2018)	2018	RCT	Strong
6	Beinicke & Kyndt (2020)	2020	Quasi-experimental	Weak
7	Benson et al. (2019)	2019	Before and after	Moderate
8	Betihavas et al. (2016)	2016	Systematic review	NA
9	Bolsen et al. (2016)	2016	Quasi-experimental	Moderate
10	Bookallil & Rolfe (2016)	2016	Quasi-experimental	Weak
11	Brasier et al. (2019)	2019	RCT	Moderate
12	Broadbent et al. (2020)	2020	RCT	Weak
13	Brooks & Young (2016)	2016	Quasi-experimental	Weak
14	Butz (2016)	2016	Quasi-experimental	Strong
15	Callister & Love (2016)	2016	Quasi-experimental	Moderate
16	Carenys et al. (2017)	2017	Quasi-experimental	Weak
17	Cesareni et al. (2016)	2016	Quasi-experimental	Weak
18	Chen Fei et al. (2017)	2017	Systematic review	NA
19	Chen et al. (2018)	2018	Meta-analysis	NA
20	Chingos et al. (2017)	2017	Quasi-experimental	Weak
21	Cho & Tobias (2016)	2016	Quasi-experimental	Moderate
22	Collins et al. (2019)	2019	Quasi-experimental	Weak
23	Coymak (2019)	2019	RCT	Weak
24	Curtin (2016)	2016	After only	Weak
25	Dang et al. (2019)	2019	Other (opinion survey)	Weak

26	de Hei et al. (2020)	2020	Before and after	Moderate
27	De-Marcos et al. (2017)	2017	Quasi-experimental	Weak
28	Dolch (2020)	2020	Quasi-experimental	Weak
29	Dousay & Trujillo (2019)	2019	Quasi-experimental	Strong
30	Ebner & Gegenfurtner	2019	Systematic Review	NA
31	Ee et al. (2018)	2018	Quasi-experimental	Moderate
32	Fabbri (2020)	2020	Quasi-experimental	Weak
33	Ferrari et al. (2019)	2019	Quasi-experimental	Weak
34	Francescucci & Rohani (2019)	2019	Quasi-experimental	Weak
35	Fu et al. (2016)	2016	Systematic review	NA
36	Gegenfurtner & Ebner	2019	Systematic review	NA
37	Gilar-Corbí et al. (2018)	2018	RCT	Weak
38	Glassman & Worsham (2017)	2017	Before and after	Weak
39	Goedhart et al. (2019)	2019	Before and after	Moderate
40	Grieve et al. (2016)	2016	Other (opinion survey)	Weak
41	Guerra-Martín et al. (2017)	2017	Other (opinion survey)	Weak
42	Ha & Im (2020)	2020	RCT	Weak
43	Halpern (2016)	2016	Before and after	Weak
44	Harjoto (2017)	2017	Quasi-experimental	Weak
45	Hernández-Sellés et al. (2020)	2020	Other	Weak
46	Vo et al. (2017)	2017	Systematic review	NA
47	Holtz et al. (2020)	2020	RCT	Weak
48	Jaggars & Xu (2016)	2016	After only	Moderate
49	Jarrett-Thelwell et al. (2019)	2019	Quasi-experimental	Weak
50	Kapp et al. (2020)	2020	Quasi-experimental	Strong
51	Karay et al. (2020)	2020	RCT	Moderate

2	Lee et al. (2016)	2016	RCT	Moderate
53	Lee et al. (2020)	2020	Other	Weak
54	Levin et al. (2018)	2018	After only	Weak
55	Lin et al. (2016)	2016	RCT	Weak
56	Littenberg-Tobias & Reich (2020)	2020	Quasi-experimental	Moderate
57	Liu (2019)	2019	Before and after	Weak
58	Liu et al. (2016)	2016	Meta-analysis	NA
59	Lockman & Schirmer (2020)	2020	Systematic review	NA
60	Lucero et al. (2017)	2017	Quasi-experimental	Moderate
61	Martin & Ertzberger(2016)	2016	Quasi-experimental	Weak
62	Mattila et al. (2020)	2020	Before and after	Strong
63	Mehall (2020)	2020	Quasi-experimental	Weak
64	Michael & Michael (2019)	2019	Quasi-experimental	Moderate
65	Mironova et al. (2016)	2016	RCT	Weak
66	Mitra & Beenen (2019)	2019	Quasi-experimental	Strong
67	Monk et al. (2020)	2020	Quasi-experimental	Strong
68	Montgomery et al. (2019)	2019	Before and after	Weak
69	Park & Kim (2016)	2016	Quasi-experimental	Moderate
70	Peng & Abdullah(2018)	2018	Quasi-experimental	Weak
71	Phillips & O'flaherty (2019)	2019	Quasi-experimental	Moderate
72	Pisoni (2019)	2019	Other	Weak
73	Pisoni (2020)	2020	Quasi-experimental	Weak
74	Ranalli & Moore (2016)	2016	Quasi-experimental	Weak
75	Roth et al. (2020)	2020	Quasi-experimental	Weak
76	Ryan et al. (2016)	2016	Before and after	Weak
77	Seifert et al. (2020)	2020	RCT	Weak
78	Sellnow-Richmond et al(2020)	2020	Quasi-experimental	Weak

79	Smith et al. (2016)	2016	Quasi-experimental	Weak
80	Soper (2017)	2017	RCT	Moderate
81	Stanley & Zhang (2020)	2020	RCT	Weak
82	Stark (2019)	2019	Quasi-experimental	Weak
83	Stephan et al. (2019)	2019	Quasi-experimental	Moderate
84	Stiller & Bachmaier (2019)	2019	Before and after	Weak
85	Stöhr et al. (2016)	2016	Quasi-experimental	Moderate
86	Swart & MacLeod(2020)	2020	Quasi-experimental	Weak
87	Theelen et al(2020)	2020	Before and after	Moderate
88	Topchyan (2016)	2016	Before and after	Weak
89	Van Der Beek et al. (2020)	2020	RCT	Moderate
90	Ward et al. (2016)	2016	Quasi-experimental	Weak
91	Webster et al. (2020)	2020	Quasi-experimental	Moderate
92	Weightman et al. (2017)	2017	Systematic review	NA

Appendix 2C: References for all 82 studies that were Quality Assessed

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Chapter 3: A review of current practices in virtual and blended learning for professionals

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Introduction

Three factors have encouraged the adoption of more virtual and blended learning (BL) approaches in police learning and development in England and Wales: the introduction of degree level entry routes to joining the police as a result of the PEQF; the national Policing Uplift Programme (PUP) which aims to recruit 20,000 new police officers in the next three years between 2020 -2023; and the effect of the Covid-19 pandemic which has disrupted normal ways of working, with the last of these being the main catalyst. The net result of these three developments has put tremendous pressure on police learning and development functions in terms of capacity and quality of delivery and has provided the impetus for a rethink of the way learning is delivered in the 43 police forces in England and Wales.

This research is part of a wider project to increase the capability of police forces to deliver blended and virtual learning and assessment to recruits and the existing workforce. The focus of the work reported here is to support the delivery of additional police recruitment through improved virtual leaning capability. The intention is to deliver additional significant opportunities and benefits to police learning and development in tandem and over time, creating a valuable legacy. The report outlines the findings from interviews with non-police professionals running virtual and blended learning programmes. The report contributes to answering the following research questions:

- Does BL contribute to improving training in a professional context?
- What are the essential principles underpinning the design and delivery of training using BL methods?

After briefly outlining the methods used to collect and analyse the data, the findings are presented thematically. The first sections answer some more factual questions around the terminology professionals use to describe virtual and blended learning, the types of models they employ, the type of platforms and tools they use. Then the report moves on to the issues that arise in designing and running virtual and blended learning, with the aim of identifying what needs to be considered when designing virtual and blended learning for professionals in training. The report concentrates on those aspects that are applicable to professional training of police officers.

Methods

This report is based on semi-structured interviews with 14 educators running a variety of initial, post-graduate and continuous professional development (CPD) programmes for professionals in training. Ethical permission was granted by UCL's Department of Security and Science Ethics Committee.

These 14 respondents were identified by searching for virtual and blended learning programmes in the UK in professions that have similarities with police in terms of education provision: medicine, dentistry, nursing and other healthcare professions, youth work, social work, and teaching. The programmes include those run through higher education institutions (HEIs) and some post-graduate CPD programmes run out of Health Education England (HEE). Furthermore, identification of experts with specialist knowledge on BL methods based on the researchers' personal contacts added to the list of potential interviewees. Interviewees were approached via email with a request to participate in the research. On receiving interest in participating they were sent an information sheet and consent forms prior to setting up the interview. A wider sample of X programmes were identified and contacted, out of which 14 agreed to be interviewed. A list of the respondents is provided in Table 1 below.

Table 1: Description of Respondents

Participant number	Role
1	IOE/UCL and freelance CPD work for NHS/HEE
2	University initial teacher education
3	HEE CPD health professional training
4	University online college for qualified nurse development
5	University physiotherapist training
6	Medical professionals training – doctors – virtual patients
7	University initial teacher education
8	University training doctors
9	University lecturer – digital pedagogies
10	University – youth and community MA/professional
11	HEE CPD coaching with health professionals
12	University teacher education/undergraduate non-professional
13	University initial nurse training
14	University training teachers of deaf children

Interviews were conducted virtually via Teams and recorded with the consent of the participants. The recordings were anonymised and transcribed, with thematic data analysis carried out using the qualitative software programme NVIVO. Each researcher coded 1 interview initially, and then agreed sets of codes for the remaining interviews. Some codes were derived from the research and interview questions. Others arose from the data. If additional codes were identified these were then agreed and applied to all the interviews. These codes are reflected in the themes in the findings below.

Findings

The first part deals with the terminology used, the type of design of virtual and blended learning, why those models are chosen, and the types of platforms and tools used. This provides a context for the issues that are discussed in the second more substantial part of the findings. Each part of the report includes recommendations.

Terminology used for virtual and blended learning

The terminology associated with virtual and blended learning used by participants reflects the ambiguous and evolving nature of terms in current use, with participants not always sure which terminology to use, or using them interchangeably.

The range of terms used includes:

- distance
- blended
- online
- e-learning
- virtual
- dual delivery or hybrid[8]

Terminology changes as technology develops, and in response to circumstances. For example, in the context of the pandemic, one institution has developed what it refers to as a dual delivery / hybrid model where learners are on a rota of either attending face to face or online synchronously (P10). Similarly blended, which has usually meant a mix of face to face and online learning within one programme, can be used to mean a mix of synchronous and asynchronous learning (P11), in a context where all learning has moved online. One respondent also argues that e-learning is now a bit redundant as all learning involves using electronic tools.

The main issues to bear in mind in relation to terminology are -

- Clarity and consistency in communication and usage, and
- An understanding of how this relates to the design of the learning activities.

As P6 summed up: 'Then you will understand how the pedagogy translates. You have to start by defining what you are talking about.' This pedagogical understanding can then lead to a rationale for the overarching programme design and the choice of activities within it. Thus, clarity of understanding what the terms, for example, blended or hybrid mean is required if the designers, teachers, assessors and students have to align efforts and expectations accordingly.

For the purposes of this report we use 'virtual and blended learning' as an umbrella term for the different models, as this is the terminology used within the Police project. However, the term 'virtual' is less often used by respondents, particularly in isolation, and for some has a very specific meaning related to virtual worlds such as in gaming or virtual reality. Therefore, we also use the older term of 'online' learning for any learning largely relying on information and communication technology (ICT).

Models of virtual and blended learning

Respondents report a range of models of virtual and blended learning, including:

- Fully online programmes, fully asynchronous or fully synchronous*
- Fully online programmes with a blend of asynchronous and synchronous learning

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[8] See Introduction - Synchronous means the learners and instructors are working together simultaneously live: for example doing a normal class but through video conferencing. Asynchronous means the learners and instructors are not working online at the same time

- Blended programmes, with face to face and online components
- Blended programmes with self-study and online components
- Blended programmes as 'dual delivery' or hybrid with face to face and simultaneously synchronous learning elements.

A list is provided in Appendix 1 with detailed examples.

Recommendations
- Decide on what term to use and ensure all involved understand what is meant by it in order to secure consistency in design and delivery.
- Make sure L and D practitioners designing activities and delivering training understand what the pedagogical implications of the chosen terms and modes of delivery are.

Types of platforms and tools used

Respondents report using a range of different learning platforms. This include virtual learning environments (VLEs) designed specifically for learning:

- Blackboard
- Moodle (including UCL eXtend)

And video conferencing platforms

- Zoom
- Webex
- Microsoft Teams

Each platform has varying functionality, with the VLEs offering asynchronous and synchronous tools, including:

- Repository of course content
- Links to text-based materials, such as articles, e-books, web pages or video resources
- Discussion boards
- Wikis
- Video clips – such as recordings of lecturers / teacher input
- Interactive tools such as quizzes
- Video-conferencing facilities

The video conferencing platforms primarily offer synchronous video communication between individuals, with some additional features such as:

- break out rooms
- opportunities to share screens
- whiteboards with annotate functions
- chat functions
- reactions and hands up functions

The rationale for the choice of platform is not always a pedagogical one, and generally made at institutional level, so respondents were concentrating on making best use of whatever was available and had been chosen for the institution. For example, P10 describes an institutional decision to use Teams for all aspects of work within the university, including teaching, and therefore to phase out use of Moodle, despite Teams not originally being designed as a VLE. This has meant that the IT support

staff have been continually working on Teams in order to try to provide some of the opportunities available through a VLE, to make it more suitable as a learning platform.

Respondents did not comment much on the value of particular VLEs or video-conferencing options, either for teachers or learners. However, P3 did describe how they changed to Zoom as a result of finding their original option was not suitable for what they needed:

> "We got feedback very quickly from the participants and the facilitators that it didn't work because you could only see four people at a time, and if you're trying to do a small group discussion and you can only see four people, it stilts the discussion, it doesn't allow it to flow nicely. And so, we moved to Zoom because at the time that was the only platform offering large enough spaces where you could see everybody still. And that's worked much, much better."

There is though some benefit of institutions having a uniform approach as it may encourage collaboration and sharing of experience and expertise.

Rationale for choice of model
The rationale for the choice of a virtual and blended learning model is complex, but is closely linked to what respondents point to as benefits and challenges of virtual and blended learning. There are practical considerations such as availability and geographical location of learners and responses to circumstances, including the current pandemic. However, there are also decisions made on what constitutes best practice and which aspects of professional learning are best served by online or face to face learning. The following section highlights these issues, showing how they influence choices over model and balance of online and face to face learning.

Response to Covid 19: the rise of synchronous teaching and learning
A main impetus for many of the programmes was the current pandemic, particularly for synchronous learning. Although video-conferencing and live streaming technology was available before March 2020, respondents reported that programmes had previously tended to be run face to face or completely online as asynchronous distance learning models. With the onset of the Covid 19 pandemic, programmes had to shift online, and many participants stated their rationale for synchronous components of programmes was to provide the same content that had been face to face previously. This then prompted further reflection on how best to provide that synchronous element, and issues around student engagement, collaboration, suitability of learning and teaching activities, ethical considerations around use of video-conferencing – all issues that are addressed in more detail in the rest of the report.

Recommendations
- Think about what functions L and D practitioners teachers need to teach effectively
- Consider the pedagogical value of different platforms, even if platforms are intended for wider use also
- Aim for platforms with a variety of functionalities
- Be prepared to update or consider alternative platforms if learning aims cannot be achieved

Accessibility and flexibility

Accessibility and flexibility are identified as key benefits of virtual and blended learning. Programmes can be accessed, whether synchronously or asynchronously, by anyone with sufficient equipment, anywhere. This increases the range of learners that can be recruited resulting in a richer learning experience for all with a more diverse learner base. With no specified time to be online, learners, particularly busy professionals, can fit learning in around their other life commitments, and as they do not need to travel to study, courses can reach learners over a wide geographical area.

For example, several course designers anticipated that their cohorts would extend beyond the local region. P1 reported having learners based in Cumbria, Cornwall and Sheffield. Others were catering for their learners who include qualified professionals and trainees working different shift patterns.

> "We have webinars which are live and recorded so if the student is on a shift so they can't access it, they can review it afterwards or if they are in a different time zone or if they have any technical problems." (P4)

In contrast, P8 designed programmes around busy GPs and their preferences for fixed times for study. It should be noted though, that there are mixed views on the benefits of flexibility, particularly in terms of timing. For example, P2 questions why learning needs to be designed for a specific time, given the possibilities of asynchronous learning:

> "I get really frustrated about … saying to people "You have to be online at this time to do this session," because I find that very limiting. I find it limiting to me, and to the learners." (P2)

In contrast, P8 preferred more synchronous activities with specific, bounded time for learning, saying learners are trying "to shoehorn things in around the rest of their life, rather than giving dedicated amounts of time to something", which can make learning more 'stressful', though was also cognisant of the need to provide access to the material asynchronously also as a back-up.

Though accessibility and flexibility are key benefits and therefore important considerations in moving to virtual and blended learning, these benefits only accrue if this mode suits the learners. Respondents pointed to some groups that find the demands of participating in online activities difficult, such as learners with dyslexia or older learners less familiar with ICT (P3). In contrast, learning online may suit learners who are less comfortable in rooms full of people (P3) or who find the traditional face to face lecture an ineffective way to learn (P11).

Teacher control and democratising learning

Another potential benefit and therefore rationale for moving online is how it might affect the relationship between teachers and learners. Respondents commented on the degree of teacher and learner control over learning in the online space. Some were not sure whether the online learning space gave more control to the learner (P12) or whether the teacher had more control over what the learner is presented with, and whether the learner or teacher has more control over the participation online particularly in the synchronous environment.

However, others felt that the move to the online space democratised learning. P5 talked about 'the power differential between the students and the teacher' being more level, particularly in synchronous learning where both learners and teachers are all visible in the same way on screen. Some also felt it can feel more personal, for example with the use of platforms like Zoom that allow teachers to talk to learners in their home environment. P7 says she felt the teaching team were able to spot issues learners had more quickly. 'They are sat in their living room and I am sat in my living room. They feel a bit more open perhaps….' Though not all respondents agreed with this. Learners

may feel more comfortable having certain types of conversation in person, and though video can feel personal and might allow a learner to feel comfortable talking from their own home environment, P11 says about conversations about their practice that "People don't feel that comfortable about this sort of conversation online. They prefer to be either on the phone, or number one, in the room with someone really".

P7 also pointed to the benefits for learners in receiving similar learning experiences. Whereas real life placements vary and some learners are therefore potentially not getting as many opportunities within their placement, where these have been done virtually all learners are offered the same experience. Talking about trainee teachers, P7 said "that was nice for us because it meant there was a very level playing field to compare where they were at and what they were doing".

Cost and resource savings

Though arguably not the initial impetus for a move to virtual and blended learning, respondents noted that there are benefits in terms of cost and resource savings, which are likely to influence choices on the future design of programmes.

There are cost savings for room hire (P11), and solutions to the issue of teaching venues that were not entirely suitable in the first place. Learning online saves travel time to and from workplaces (P3), particularly for busy professionals, and allows staff to work from home, saving time and money also. P13 pointed out that institutions may decide this is a cheaper way of running programmes, and P7 argues that it frees up face to face facilities to be better used for those aspects of programmes that cannot be moved online. There are worries associated with this. P13 says, 'The worry is that commercially they'll go, "Well you only need one lecturer to do that," and actually you don't, you need two, two lectures at least to manage the online".

Suitability of course content to online or face to face delivery

Although the move online might have been prompted in some cases by the current pandemic, in many cases leaving respondents with less choice over their course design, respondents were aware of the arguments around the suitability of the online environment for course content, and within that the suitability of content for synchronous or asynchronous delivery.

Practical elements

The main consideration centred on the practical elements of professional courses. Courses have requirements, often from professional bodies, for learners to gain practical skills, which would normally be learned face to face on placements or at a university or similar institution. Respondents point to the challenges and sometimes unexpected benefits of moving these aspects online.

Course designers adapted face to face aspects of professional training programmes to online alternatives in various ways. Examples include learners uploading videos where they demonstrate particular tasks, or one cohort of trainee teachers undertaking a virtual version of a final teaching placement with 'a fake class of 35 fake children' (P7). P5 also noted how online learning offered some quality learning experiences that hadn't previously been thought of. Echoing the points made above about more equal learning experiences, P5 describes having a professional physiotherapist filming a home visit for the cohort to then discuss, rather than only one or two trainees on placement getting this experience.

P6 talked about the value in the synchronous virtual environment of interaction and immediate feedback, and if the design is good, then it can feel 'very real'. The use of simulated patients allows learners to engage with a case, and see what happens when they attempt treatment, without experimenting on a real person. This is particularly valuable as professional training in medicine has changed with learners not being on the ward as often as previously.

Despite the success of these examples, there are constraints and potential disadvantages. For example, placements usually involve mentors, and learners engage with other professionals on placements. This additional professional support is missing in online virtual environment, where learners may only have one tutor to support them. P3 noted the value of face to face work because 'ultimately becoming a professional is like your communities of practice. That socialisation within the profession is really important.'

There are also the requirements of professional bodies to consider, and the demonstration and assessment of professional competence, which might require learners to be physically present on placement. For example, P10 talks about the resistance from the professional body within social work to having all learning online, including the closure of previously fully online social work courses.

There are concerns around the loss of hands-on practice. This develops confidence (P13) and as P4 noted, "you can't be in the comfort of your own home throughout all your training and then be expected to go out there in the real world and operate." Some skills require specific technical equipment or interaction with people, which are hard to replicate online, such as learning how to measure blood pressure, social care (P13) balancing hearing gains for deaf children (P14) and teaching others (P1). Tutors need to see what the trainees do, to offer feedback and assess whether trainees can confidently demonstrate professional competencies.

Learning new professional skills and being able to apply these in context were therefore the main elements of courses that respondents argue should be retained in face to face mode, although they acknowledge that there are ways that some of this can be tackled in online environments. As P9 sums up, 'I think learning practical skills remotely is very difficult and you can to an extent, but then it's not going to replicate the real thing'.

Difficult professional and personal conversations

Linked to the discussion above about professional competencies, there are difficult topics where in person communication is key to learning and professional practice. This might include learners having to practise having difficult conversations with patients with long term or terminal medical conditions. As P5 argues, these conversations are difficult enough in person, and the virtual environment does not give a sense of the whole person and what they are trying to communicate. P6 also points out that simulated patients, though a long-standing and effective tool in clinical education, cannot replicate the sense a learner has of their patient watching them treat them.

Other examples where communication is arguably compromised are in the teaching of difficult topics related to professional behaviour, such as 'anti-discrimination'. P10 notes that in the online environment a learner who is challenged or feels upset may just 'switch off the microphone and disappear'. It is harder for the teacher to pick up on body language and when learners are upset by issues, or when they are 'being offensive or being offended', in comparison to face to face in a classroom.

Social interaction and collaboration

Another compelling rationale for maintaining face to face components on taught programmes focuses on the importance of social interaction and collaboration for learning. Social interaction in an online environment is different. With asynchronous activities there may well be no time when all learners meet each other in person, and they may not even know what other learners look like. Even with synchronous activities, the buzz of live human interaction when in physical proximity cannot be entirely replicated. P5 points out that "some of the subtleties of communication might be lost".

Another loss is in the informal elements of learning, such as "chat at lunch, chat at coffee" (P11), where relationships between learners are developed. P3 talked about the professional networking that goes on over breaks in face to face learning environments, which does not happen in the online environment. "They are all talking, they are all networking. If you are doing everything online, during the break times everyone goes and makes a cup of tea or puts the laundry out, so you lose that. You lose the dynamics within the group during group work."

Teachers also find it harder to get to know students. Although to some extent, social connections can be formed online through well-chosen icebreakers and a sense of community fostered through allocation to set learning groups, P5 reported that this took much longer than when face to face. P9 pointed out that this is easier with synchronous rather than asynchronous approaches.

> "There is still some value in synchronous teaching because one reason for doing that is to enhance the social presence or establish social presence quickly, and also establish a teacher presence quickly, so … synchronous teaching is extremely good at establishing social presence quickly, not better but quicker. And perhaps also better because you can see people, you are able to hear their voices and so on." (P9)

Where learners find ways of socialising, tutors may feel more isolated from their learners. P14 talks about learners forming exclusive WhatsApp groups without the tutor. P12 notes, "'I'd always probably want some face-to-face element to get to know them a different way because there's idle chitchat before sessions. You get a little bit on Zoom, but not when I'm in there."

Some of the consequences of these difficulties over social interaction are a loss of confidence and motivation for learning and learners having a social presence online, which we discuss in more detail below.

Learner motivation and social isolation

There are some issues that are inter-related which concern our respondents in relation to the move to virtual and blended learning. These are around learner motivation, the risks of social isolation from how learners choose to participate online, and the consequences for developing a sense of belonging to a professional community of practice. These concerns relate to both synchronous and asynchronous activities.

With synchronous activities, there are challenges in getting everyone to participate equally, using their cameras to be visually present and being willing to use their microphones to contribute verbally. As one respondent said,

"We can tell people to put their cameras on, but within 5 – 10 minutes they gradually all go off, which makes it hard for a teacher to know whether the learners are really engaging. The tendency will be to keep going through your materials and think, I hope they are listening". (P6)

There is a real worry on the part of respondents that they are never entirely sure whether their learners have not actually stepped away from the computer and are no longer present in any form in the class. As P13 said, "If you've got someone asleep in the corner, you would manage that in a classroom. Online, if they turn the computer on and have gone back to bed, I've got no idea".

Similarly, not all learners are happy to use their microphones to speak, despite learners commenting that they miss the social side of learning. There is the option of the chat function in most web conferencing and learners might choose to use that instead. Interestingly P13 said this also sometimes happens in breakout rooms where a group might be using a virtual whiteboard to contribute, but the teacher will find they are doing this silently as individuals, rather than discussing. This is concerning for P13 as communicating is a key skill within a professional environment such as teaching. This lack of spoken participation affects learners' confidence in their communication, which, as discussed above, is a crucial professional skill.

With hybrid activities, where part of the class is synchronously online whilst others are present in person there are challenges in providing all students with a similar experience, and similar

opportunities to participate. For example, those in the room cannot be easily heard by those joining online.

P2 speculates that some of the reluctance by learners to participate live is a result of the sudden change as a result of the pandemic, with second and third-year students who have studied face to face previously just wanting things to return to normal.

It might also be the form of activity. For example, P13 talks about learners telling her / him that they are becoming disengaged, particularly when they are facing a PowerPoint with an accompanying lecture.

It may also be the case that learners want to be more socially present online, but their home environment may not be best suited, particularly in the context of the pandemic where more families are finding themselves at home.

For asynchronous work, there is the challenge of motivating the learner to engage in learning without the real time interaction with a teacher or other learners. Respondents talk about now knowing whether learners really have read the materials or watched the videos, even if there are associated tasks for the learner to complete (P11), and difficulties in getting learners to engage in pre-reading in the asynchronous part of a course, prior to a synchronous session.

Then there are some learners that engage more than others. So 'the keen beans' might post something, but others do not engage as they would if they were conversing with a tutor live. Whilst this is an issue with all forms of learning, it is more difficult to notice the lack of participation in the online environment and therefore to find ways to involve that student more directly.

Asynchronous learning usually involves the learner taking responsibility for their own participation, and P2 points out that the sudden shift to online learning from often more passive lecture style approaches where learners sit and listen for fixed periods of time is difficult for learners to deal with.

There is a risk here of learners becoming socially isolated and not feeling part of a developing community of practice related to their profession. Though students may become isolated for reasons unrelated to the move to a virtual and blended approach, it is more challenging to support students in this environment. P13 describes students becoming "socially isolated, losing their confidence, losing their communication skills, becoming disengaged". Learners may not want to meet others. P3 notes that the opportunities for chance meetings with other students and exchanging contact details or discovering that they have a professional connection and arranging to meet up are not there in the same way in the online environment. "They switch their laptop off and that is probably it". P14 speculated that "it can feel lonely". There is some agreement that this is exacerbated by the current pandemic.

As P2 says "I think social isolation at this current moment is more prevalent because of the lockdown".

There are various barriers identified by respondents to learners being present online. These can increase the possibility of social isolation:

- Family commitments
- Illness
- Studying part-time and juggling other commitments
- Time of day of synchronous activities
- Not meeting other people in person, not being able to greet people in the normal fashion – e.g. shaking hands.

- Lack of sense of group dynamics and coherence
- Students choosing not to engage as much as others – being naturally shy or quiet
- Learners choosing to keep cameras and microphones turned off
- Lack of confidence in posting in online spaces – possibly language issues
- Students' expectations not matching the nature of online learning - for example, expecting to work more passively watching a lecture but finding they have more work to do.
- Materials and activities not interactive enough in their design
- Mis-reading task instructions and timelines, for example needing to post a contribution by a certain date

Examples of specific strategies respondents use to promote learner motivation in synchronous and asynchronous learning are included in Appendix 2 and strategies respondents use to increase learners' social presence online are listed in Appendix 3.

Recommendations
- Focus the design of programmes on minimising social isolation and maximising opportunities for learners to be social present online
- Prioritise understanding and addressing learner motivation in relation to learning on virtual and blended programmes

Factors governing choice of pedagogical activities in virtual and blended learning

Thus far the report has outlined the types of models of virtual and blended learning, the benefits and the main challenges arising from them. In this part of the report we look more closely at the rationale for the choice of particular pedagogical activities in both synchronous and asynchronous learning. The discussion here reflects some of the concerns above, but also offers examples of strategies and solutions respondents employ to maximise learning in the online environment.

Learning theories or understandings of learning
Whatever the mode of learning, it is important that teachers have some understanding of learning and how to promote it. As P1 says, a teacher needs to 'have some idea of what you think good learning is: all teachers have to have that if they're going to do a reasonable job'.

A key starting point is the learning outcomes. P4 talks of their importance and P5 refers to an institutional approach of using Bloom's Taxonomy (https://www.bloomstaxonomy.net/) to inform which types of activities are employed, such as which learning outcomes are best met by quizzes and which by self-directing learning.

Examples include:

- Using repetition and other activities to enhance memory, such as revision activities and students testing each other (P11)
- Choosing an article the teacher thinks is not very good, to get students to develop critical thinking skills (P14)
- Simulation for practising professional skills (P6)

- Quizzes for checking initial understanding and checking understanding at the end of a session (P13)

P11 and P6 both talk about what helps learners learn, whether it is active engagement, 'deep learning' or opportunities for learners to apply their learning (P11) or the importance of activities, such as simulation where learners get feedback on their learning through the activity, particularly activities that replicate real life (P6). "We know that if you are drawing out your past experience, taking in new information, playing with that information, putting it together and making it interactive, you remember it more" and the interviewee further stated that immersion in a simulated environment gives the learning more impact as it is closer to the real experience than other activities such as a demonstration.

Then there is the consideration of the focus and purpose of the particular teaching session and devising a structure to meet that (P12). P7 points to the need to know why a specific task or tool is being used: 'We are doing this task, don't know why. There needs to be a real purpose to the whole thing, otherwise it becomes a weird set of Zooms and Google Hangouts with no meaning'

P9 recommended the use of six fundamental learning activities: 'acquisition, reading or watching a video, discussion, practice, producing, and collaboration' to serve the purpose of the teaching. These six activities seem to be based on Diana Laurillard's learning types (https://abc-ld.org/6-learning-types/), derived from her research and developed into the ABC toolkit for learning design.

One interesting point made by some respondents is the importance of providing thinking time both for themselves and their learners. This is particularly easy to achieve with asynchronous activities. As learners are not pressured to respond in real time but have the chance to reflect and respond in their own time. It provides the opportunity to generate thoughts that are 'richer and more considered' (P1). The concern for enhancing the quality of learners' thinking leads respondents to design activities for example with pre-reading / pre-work 'and that helps better because you get much better thinking'(P12). P25 then also talked about the module having a sense of trajectory to facilitate that thinking and learning, like a storyline.

The main point to emerge here is that it is the knowledge, skills and attitudes that the teacher is trying to develop in learners that should be the primary focus (P12), not the tools being used.

Linking learning activities to content

Teachers also try to link the types of activities and materials to the content they are trying to teach. This might be an attempt to mirror what happens in the professional environment, such as providing online placements. Or it might be an attempt to develop specific skills. P5, for example, asked professional colleagues to provide video access of their consultations in order to offer learners the experience of observing consultations that they would normally experience in person.

With activities that are trying to replicate real life experiences, respondents discuss the importance of how those experiences are designed. P5 pointed out the need to have learners watching, for e.g. a consultation under conditions that are as close to imitating real life situations, whereby the observer's presence is unobtrusive and non-participatory. This has the benefit of having several learners at one time as opposed to real life where only a very limited number of learners would actually be able to observe a live consultation.

Interaction and participation

One of the main concerns driving pedagogical approaches it the desire to create spaces and opportunities for learners to interact and participate. As discussed above, social isolation, lack of learner presence online are major worries for teachers in the online environment.

P14 emphasised the importance of all activities online being engaging: "whatever activity you are going to do – engaging, interesting". P7 addresses this through their VLE where they put something new up each day, to maintain learners' interest. Making the materials engaging also means considering what type of content works best in which mode. P8 cautioned against putting a lot of didactic material in synchronous formats, such as live lectures, as this involves sitting passively and listening. It was argued that the synchronous space is better used for discussion, sharing ideas, group work, demonstrating skills, and activities such as virtual role play.

In an asynchronous environment, group work is also important. P1 describes using group tasks, where individuals prepare their contribution and put this towards a group product, which involves discussion and collaboration to finalise. 'So, all of the activities depended on everybody doing their bit'. The activities are designed in order to generate the need for all learners to participate "because people can't let each other down because then the group falls down".

The importance of group work for interaction and participation is also linked to the benefit learners have from peer learning. For group work to be valuable, learners need to get something from working with each other, otherwise as P1 points out, why not just design self-study materials and "tell them to get on with it".

Designing group work requires understanding how groups work. P1 designs separate online spaces for learners to work together in their planning and other spaces where they submit their final group products. This mirrors the face to face environment where groups work privately on an activity, before being ready to publicly present their product to the rest of the class.

Prioritising peer learning and groupwork relates also to online placements. P5 and P7 both mixed different year groups so that learners would have the experience of learning from more experienced colleagues, who they do not yet know, as they would in a real professional environment.

Relationship between technology and learning

Although all respondents point to the need to focus on learning as the priority and designing in line with learning outcomes and course content, there is also understanding that knowledge of what the technology can and cannot offer is an important factor. P9 supported colleagues with the move to online teaching and made the following point:

> "When you make a conscious decision for synchronous teaching, in my view you should be able to answer the question why; why are you doing it? And those people who are relatively new to online learning would in my experience answer this question of why synchronous teaching, with 'Well, I think it's the easiest, it's what I'm used to from the classroom,' and so on. That is not a good reason, because the synchronous teaching online has different affordances and different dynamics in terms of learner interaction." (P9)

When considering designing with technology, making use of the full range of functionality and modality, such as video, audio, written options, is important, in order to avoid just trying to replicate the face to face teaching in an online environment (P5). There are differences in the way people engage online compared to face to face, including challenges of concentration and issues of social

isolation, as pointed out above. For example, material might need to be broken up into smaller chunks to keep learners engaged.

Furthermore, the online environment offers the opportunity to share live broadcasting of experiments (P7) or storing materials that are pre-prepared, pre-recorded and available for use again. With close caption options and other accessibility features, these materials are easy to use by most learners. Social media tools are also familiar to learners so these can also be exploited, such as WhatsApp groups to circulate updates or allow learners to socialise. Tools like google hangouts are also suitable for mentoring conversations (P7).

The main point to emerge from the interviews is that teachers need to understand how the technology facilitates or hinders the design of effective learning activities. P6 asks "how is the tech enabling the learning or setting it back?", arguing that there is little point in spending money on complex technology (such as virtual reality) if the learning gain is minimal and could have been just as easily accessed through a textbook. Additionally, if the technology is too complicated it interferes with the learning process.

There are often enthusiastic digital teams within organisations that can advise and recommend functionality and tools. However, the tools still have to meet the learning outcomes and work for the learners. P8 was recommended a wiki tool, as good for collaboration. But her learners did not use it, and the tool itself was not intuitive, so it was quickly abandoned.

Sometimes the technology is not designed specifically with all the functions that teachers require. One respondent gave the example of finding out that the shift to online teaching did not really support registering learner attendance, as this was not built into the online learning environment. Alternatively, the technology at times could not cope with the demands placed on it for example having enough bandwidth for live streaming or video-conferencing activities. It might also be the case that the learners' own technology and circumstances are not optimal. P7 stressed the importance of changing plans from synchronous learning to asynchronous delivery for such reasons:

"The real problem we had with it was the students' technology wasn't really good enough to keep that going. I had students who were sat in cupboards. They were sat right next to their router. Having to make sure everybody turned their cameras off so everybody had the bandwidth to get the video. If someone dropped out, even though it was recorded they lost it. Then there was the problem of: we are recording. Are they consenting to be recorded? … It was becoming obvious quite quickly that having something live wasn't the most manageable." Another participant (P2) expressed concern about the use of technology adding that although

it can facilitate a great deal of different types of activities, it can also deskill learners in their social interaction abilities.

Considerations for organisations moving to virtual and blended learning

Alongside institutional decisions over models of virtual and blended, which platforms, tools and functionalities to invest in, and how to support teachers to design effective activities and programmes taking into account the learners, learning outcomes and course content, there are other issues that are important to consider.

Different demands on teachers

Virtual and blended learning makes different demands on teachers. These are not necessarily limitations or insurmountable obstacles to the design of effective programmes but they do need to be considered.

Teachers' time is distributed differently in the online environment, particularly in asynchronous activities. There is increased upfront preparation time, in editing videos (one participant put this at 100 to 1 ratio in terms of time), developing the learning activities and instructions, preparing the VLE etc. The benefit of this investment is that, as P9 says, 'the more scalable things become, because you can run things again and again…without a lot of work'. This has its risks though. P10 talks about the growing bank of pre-prepared, recorded materials might lead to a 'commodifying' of the learning by institutions.

P7 is also concerned that even though already prepared materials can be used again, the course needs to remain fresh and relevant. 'When you have one video and 10 years later you are still showing the

same video… My caution is that I am worried that might happen. The team will go, 'We have recorded that once now,' 12 years later and we are still rolling it out. Keeping it fresh will be important'.

With synchronous learning, respondents talked about the demands on their concentration. Although classes might not actually be shorter than those in a physical classroom, constantly looking at a screen, at a fixed distance whilst sat in one place, is tiring. One of the dangers P3 notes, is that there might be a tendency to 'cram in a lot more' in an effort to cover the same amount in a shorter time.

Teachers also report that the technology, which is crucial to the success of synchronous online teaching and learning, adds another layer to the teacher thinking process. Teachers have to allow time for the technology to work; for example, putting learners into break out rooms and bringing them back, waiting for things to be posted in the chat. There is an inbuilt delay in many web conferencing platforms. There are simultaneous demands on the teacher's attention which are difficult to juggle – such as monitoring chat, whilst also presenting and checking whether learners are signalling they want to say something (P10). P10, who offers a hybrid option, with some learners in the class and others online, talks about how this constrains his teaching, meaning he does not go off script as much, as there is a tendency to go with the pre-prepared material. This 'can curtail some of the learning or the excitement of being with a group of people' (P10).

The constrains of the technology in allowing teachers to see all participants and follow everything they are doing in the online environment, particularly with functionalities like break out rooms, means it is more challenging to spot if learners have a problem. P3 talks about the difficult of telling if a learner is upset with something. In a room, there would be body language to go by that is harder to see on screen. It is also not as easy to rectify things (P9) or re-explain things as one would in a face to face classroom, particularly if materials are fully pre-prepared.

Teachers' responses to moving to virtual and blended learning

The respondents quoted here were those who volunteered to be interviewed about teaching on virtual and blended learning programmes. They were either enthusiasts, experienced or at least not fazed by the prospect. They were aware that not all their colleagues were enthusiastic, or would find it easy to shift, as they had also not necessarily felt that way themselves when they first started working in the online environment.

It is important therefore for institutions to consider staff reactions to the prospect of moving online. Our respondents describe the reactions and experience of suddenly having to re-plan their work:

- 'fireworks' (P5)
- 'it was horrific. It was a really hard process, but now we have done it once we are going to use a lot of it again'. (P7)
- 'an interesting ride' (P8)

Institutions therefore need to consider the timing for developing programmes in new modes, how that fits with the academic year or other lifecycle of courses and their validation.

Respondents also had advice for their colleagues tackling this for the first time, and the consensus is to try things out, be pragmatic, discuss and debate and start with things people know how to do. Adaptation and creativity are important (P10) but a sense of realism is equally so. Using existing skills amongst staff is important. P7 knew how to edit videos so took on that role and then made a video to train others on how to take over.

P5's advice was, "You have to be brave. If you are a perfectionist, you are going to have to rein that in. It doesn't need to be perfect before you start. Have a go and do some stuff." P7 added, "We had lots of debate about the best way to go. We trialled a few things and found what worked and what didn't". P6 highlighted the obvious but important conclusion that, "the more thought goes into deciding and designing what you are teaching, the more successful you are going to be".

Technical competence: training for course designers and learners

To support staff in moving to virtual and blended learning, institutions need to consider the time required. A lack of teacher knowledge, or confidence, are also barriers to best practice. The availability of appropriate training and ongoing support, for both teachers and learners, were reported as key factors in how well digital technology was used. P9 commented that, 'if people haven't engaged with us and are not trained properly and don't know what to do in these online synchronous environments, they fall back on the minimum lowest common denominator which is lecturing; them talking, talking at learners.' There are resources available, such as video tutorials that go with bits of software (P8). Others pointed to institutional support from learning and teaching units (P10), and IT support.

Similarly, time needs to be spent in providing guides for learners. P14 had to design resources to support learners with using tools such as Turnitin by creating "all those videos on my own and captioned them…it takes lots of time to do that." Thus, underscoring the importance of supporting the use of technology not only for teachers but for learners as well.

Ethical and security considerations

Finally, there are some ethical and security considerations. P9 talked about whether learners have consented to sessions being recorded. P7 experienced people joining their Zoom sessions who were not on the course, as they had not password protected the session. This is an issue that becomes particularly salient if the material that has to be delivered is either sensitive or data protected.

Recommendations

- Factor in enough time for L and D practitioners to prepare, be trained and become confident in designing online learning, both synchronous and asynchronous
- Understand the reluctance of experienced professionals to re-learn and change practice that they consider works
- Use existing skills within teaching teams to offer support to others
- Understand that good learning design is partly the result of seeing what works, being prepared to change tools, activities if they do not suit learners
- Provide training for L and D practitioners and learners, and on-going technical support
- Think about security, confidentiality and other ethical issues in guidelines for participating in online learning

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Conclusion

Interviews with educators in other professions revealed the impact of the pandemic and the dramatic uptake of virtual and blended learning in education and training programmes for professionals in a

number of University based programmes.   Education practitioners with a huge pool of experience and expertise between them highlighted the benefits and challenges associated with the use of virtual or blended learning methodologies to deliver training for professionals. The main benefits include the wider reach, convenience, and accessibility of online material. The interviews highlighted how the online learning environment was naturally aligned to the learning preferences of some learners and mentioned various ways in which it could be designed to both support and supplant face to face teaching.   The findings underlined that although currently a majority of the BL training was an emergency response to the COVID -19 restrictions, more careful design of BL would involve aligning the aims of the teaching, the type of learner, the content of the material to be delivered, and the learning outcomes to be achieved. Particular attention needs to be paid to the design and delivery of hands-on training or craft-based skills to professionals as well as enable the socialisation of new entrants into the occupational culture and communities of practice.

Particular challenges for BL centred on the technology involved, whether it was available, accessible, suitable and affordable. It is therefore important for policing to consider the levels of engagement trainee police officers can achieve and their personal circumstances, such as home environment, and its potential effects on learning. An associated challenge referred to the capacity and willingness of the trainers and trainees to learn the requisite skills to engage with the technology appropriately. The third area of challenge was motivating learners to engage with the blended learning process and work independently where required.

The research findings provide a number of good practice guidelines for teachers and training designers to consider while designing and delivering teaching and training for professionals as summarised in our recommendations at the end of each section.

Appendix 3A: Models of virtual and blended learning

Examples of fully online programmes

- One-off training sessions which are all synchronous like face to face but virtual
- Fully asynchronous programmes with teaching materials and activities supported by a virtual learning environment

Examples of blended learning: face to face and online

- The online component was time in between weekly face to face sessions.
- The face to face sessions were only at the beginning or at the end of the course and the rest was online
- Online sessions for theoretical element with placements carried out in professional contexts
- Online components are mainly administration and information but not used for pedagogic activities and learning activities. These are undertaken face to face
- Three elements: face to face learning that is done in Covid-restricted socially-distanced rooms; live online sessions when students have to attend at the appropriate moment; and pre-recorded sessions where students can choose when to access and engage with this material
- Five face to face days of training with work to complete in participants' own time between sessions
- Self-referral for continuous professional development (CPD) when practitioners were experiencing difficulties in practice or with passing required qualifications. Blended learning support with online material included revision of required knowledge and tutorials to develop understanding. Face to face sessions included: role-playing scenarios which could be applied to practice: discussion of practitioners' psychological issues such as stress or loss of confidence and how this was impacting on practice; and their learning needs including support with specific learning difficulties such as dyslexia.

Specific example

Context: Training the trainers module. Run by a CPD provider

Purpose: To train other educators who were working in Development Education on how to train well

Model: Initial face to face weekend which provided the opportunity for the participants to get to know each other at the start of the course which promoted group cohesion when the learning moved online. This was followed by a series of five online sessions over a period of almost a full term. The online sessions included theoretical elements of the course including how to train, how to design the training and how to evaluate the training. The purpose of the second face to face weekend was for the participants to apply theory to practice and train each other. The sessions were very practical and included immediate feedback from the course leader. The course concluded with one more session online and a written assignment supported by tutorials in person, email or phone calls.

Examples of blended learning on fully online courses: asynchronous and synchronous

- Online learning including simulations with on-demand helpdesk available when learners were stuck in the simulations.

- Online materials include a workbook with a series of tasks that students work through. The content is released on a Sunday for the week ahead. Some elements such as discussion and reflection are synchronous.
- The VLE was used as the main vehicle. Live video and recorded video were integrated into this along with all resources, activities and discussion.

Specific example

Context: Developing GP supervisors. Run by CPD provider.

Purpose: To train others how to facilitate learning

Model: Six sessions of two and a half hours each spread apart over three months. Between each of these sessions, delegates had a small amount of online learning to do including some reading, commenting on a discussion forum about the reading, sharing ideas about reflection or giving each other peer feedback on set tasks. There was a little bit of online work, but the bulk of the learning was in the synchronous days. This was structured with a couple of plenary sessions with the whole group. Most of the work was done in virtual break out rooms with a facilitator. The delegates stayed in the same learning sets to promote communities of practice.

Blend of learning face to face and online simultaneously (hybrid or dual delivery)

- Some of the content will be delivered in live face to face with online provision at the same time. The same VLE is used as a vehicle but there are two ways of communicating - live and online simultaneously.

Specific example

Context: Full MA master's degree in a year and a professional qualification in Youth Work. Run by a university.

Purpose: To equip trainee youth workers with the knowledge, understanding, skills and experiences for qualified practice.

Model: Students get a full Master's degree in a year and a professional qualification. Key to that is two placement opportunities, two work-based learning experiences. Usually it is a combination of on-campus learning, placements and virtual learning environment. This is a repository for asynchronous learning materials that people can access at any time. Students come to campus on a Tuesday for face to face taught lectures and seminars. What we have moved towards now is what the institution has labelled as 'dual delivery.' Students have the opportunity to come onto campus or study online depending on their circumstances. If they are affected by COVID in whatever way, they can study simultaneously. The course leader is in a classroom with one group of students who can be on campus and the rest of the group are online. It is synchronous learning. That fluctuates from week to week. At the moment some students are coming in when they can, others depending on the circumstances may not come in and engage with the live lecture and seminar via MS Teams.

Appendix 3B: Strategies for promoting learner motivation

Asynchronous:

- Clear instructions and parameters for tasks – this helps learners navigate the activities.
- Include the purpose of the task in the instructions so learners know why they are being asked to complete it: Making links between the activity and professional requirements, for example; making clear how much time a learner should spend on an activity.
- Helping learners see that they are making progress, for example, by ticking off completed tasks and how much time they have spent.
- Using peer pressure or tutor pressure – designing activities so that learners' engagement affects the learning of others and affects the sense of community in the group.
- Making clear links from the activity to something the learners can take away and use. For example, using an authentic task from real life, or problem-based learning activities or similar, where the potential application is clear to learners.
- Designing activities with short responses to increase participation.
- Linking activities to the assessment or making them compulsory.
- Generate a sense of a story through the activities, so that learners see there has been some thought put into the materials.
- Breaking activities up into smaller chunks of time – for example shorter 15 mins of recording rather than a full lecture.
- Use of simulation such as simulated patients where the consequences of decisions are played out in the scenario as they would be in real life. For example, if a student does not engage with the simulation the simulated patient might die. This is evidence of participation, whereas asking a student to watch a video does not generate any visible learning.
- Offering opportunities to have a synchronous discussion with a tutor.
- Design public question and answer spaces so that students can see what questions others have asked and the answers given by the tutor.
- Having learners help guide the content – asking what they want to know about.
- Building in incentives in asynchronous material, such as in video recordings to alert them to what is coming later in the video – maybe important information about the assessment based on the topic in the video.
- Making it clear what expectations there are of learners and how engagement will be different through the online environment compared to the passivity of sitting in a lecture, for example.
- Group scenario-based activities that they have to post online.

Synchronous:

- Grouping learners to produce work that counts towards the learning outcomes, so that there is peer pressure to all contribute. 'So any activity where you can generate a sense of needing to participate to contribute to helping their fellow learners, rather than just doing something in order to keep me happy' (N1)
- Variety of activities – video, practical, lectures
- Making the purpose of activities clear
- Making it a requirement to demonstrate something to the teacher
- Developing formative pieces of work to track engagement
- Encouraging participation, such as asking for student representative volunteers, and promising this would be included in references after the course.

- Simulation and virtual worlds, where learning happens in a realistic context
- Taking student feedback and responding to it – changing activities in response to what they prefer.
- Letting students know their participation was being discussed regularly by the teaching team (and feeding into the assessment – RAG rating?)
- Talking to individual students to gauge how they are doing.
- Using the chat function, stopping for short 'buzz groups' in live sessions
- Having two members of staff – one managing the chat and feeding in questions and one doing the main input.
- Being available to students.
- Using whiteboard functions for students to write contributions if they don't want to speak.
- Polls, quizzes.
- Link to the assessment.
- Making learning outcomes clear, asking learners what they want to get out of the online class.
- Simulations or videos of real life or even TV drama versions of professional settings.
- Giving feedback on group work in the live session.
- Designing in engagement.
- Co-creating and collaborating with learners on content.
- Make clear expectations of types of learner engagement (same as above).
- Institutional participation requirements as pre-requisite for taking the assessment.
- Transparency on the way and rationale for the course design
- Demonstrate the value of the learning activities

Appendix 3C: Activities to promote a sense of belonging and a community of practice

- 'Getting to know you' activities at the beginning of a course (face to face in a blended course, or online)
- Starting the online elements of a blended course very early so that learners get used to it.
- Designing online elements at the beginning which are presented as valuable as online activities, not just a substitute for not being able to meet.
- Webinars or similar from programme leader and others at the beginning which explain the online elements and their importance.
- Phone / video calls to students.
- Synchronous elements early on
- Getting to know students through discussion forums
- Games at the beginning of a course
- Encourage students to develop social media groups – WhatsApp etc
- Break out rooms
- Induction activities
- Social time online as part of the synchronous offering
- Having synchronous meetings with students and teaching team, so that everyone participates
- Giving learners space to learn in groups without teachers present
- Personal tutoring – inviting learners for individual meetings online
- Leaving learners to decide how and when to learn together as groups
- Being responsive to queries and feedback.
- Parties to mark graduation or similar social activities during the course online.
- Considering time zones when scheduling synchronous activities.
- Following up learner contributions in discussion boards – keeping up a dialogue
- Have some guidelines for working online – for example, if a person has to leave a live session to answer a door, or similar, to agree they turn off their video and turn back on when they return.
- Opening a Zoom session before the official start time to allow people to meet, ask questions etc.
- Staying on the Zoom session after the class if anyone wants to speak to the teacher.
- Icebreakers, setting aside time for social chat online
- Virtual common room spaces.
- With hybrid options allowing students to choose the mode.
- Start sessions with something personal – check how everyone is – something welcoming.
- Put up a photo of the teachers and contact details.
- Varying the view in a powerpoint presentation – mix slides with video of teacher talking etc.
- Emailing students if they have not participated
- Tracking participation on VLE, having regular 'engagement checks' and sharing the information across a team
- Make materials available to download / print if students are struggling to work online through the VLE
- Clear indications of consequences of non-participation for completion of the course
- Responding promptly to students in distress personally, through phone or video
- Signposting other institutional support – such as psychological services
- Having a dedicated tutor for a small group of learners that they meet regularly
- Making sure learners are supported to learn to use the learning platform

- Having drop-in sessions online where students can log on if they wish
- Making sure there is a lot of online discussion
- Designing tasks that require learner collaboration
- Mixing students from different years so that the newer students learn from more established members of their community of practice

Chapter 4: Blended learning for police education: Perspectives from L &D

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Aims

The aim of this piece of work was to survey the current landscape of blended learning (BL) provision in police forces in England and Wales (E & W), as well as, to gauge their appetite for engaging with BL going forward. Interviews were conducted with Learning and Development (L & D) leads to get a sense of the capacity of forces to provide BL pre COVID; how they have required to adapt training provision during COVID; and what are their plans and aspirations going forward. The interviews also aimed to explore from the perspective of L & D leads whether there was an appetite from the viewpoint of instructors, trainees, and the senior leadership team, to incorporate greater amounts of digital and blended learning methods in both, recruit training, as well as, continuous professional development (CPD). Finally, the interviews aimed to identify and explore what challenges L & D leads currently foresee in expanding the use of a BL approach to training in the near future. The report aims to provide recommendations based on the findings of this research for supporting the rollout of the National Blended Learning Programme and the BL agenda more widely.

Research Questions

The research was aimed at setting the baseline to gauge the extent of existing BL capacity in forces and the attitudes of senior leaders, instructors and trainees towards shifting training away from traditional face-to-face delivery methods to adopting on-line and blended approaches. L & D leads were considered to be best placed to provide a road map for future planning and resourcing of training not only the enhanced recruit training (thanks to the PEQF), and coping with the additional numbers of recruits following the national Policing Uplift Programme, but also CPD and specialist training for in-service officers.

The research sought to elicit the perception of L & D leaders on a number of questions:

1. To what extent is BL incorporated in training and learning at present?
2. What is the existing capability and appetite in the force to integrate BL approaches in learning, going forward – especially on the part of the senior leadership team, the instructors, and the trainees themselves?
3. What challenges lie ahead for incorporating significant BL approaches in recruit education as well as for continuous professional development (CPD) learning?

Methodology

An earlier study in 2018 with L & D leads across a number of forces in England and Wales to map the pre-PEQF recruit training programmes in individual forces revealed a wide ranging variety between forces[9] . It clearly showed that although forces worked to a given curriculum, whether this was delivered in the classroom (recruits spending between 10 and 24 weeks in the training centre) or by field instructors on the job differed from force to force. The extent of local autonomy exhibited by the forces made it necessary for this research to also survey a range of forces across E & W to assess the extent to which BL is integrated in their training programmes.

Following on from the logic that since forces are very distinct in their approach and attitudes towards learning, we began from a position that forces would be at quite different levels in their acceptance of BL learning methods. Most likely, they would range along a continuum – such that at one end, forces would have developed a strong BL suite of training skills pre-COVID; some forces in the middle would have been in transition to adopt new methods; and at the other end, some forces would still be some way from becoming more BL compliant. Guidance was sought from the L & D National Learning Network to provide contact details of forces along the range of this continuum and it was hoped that conducting a sufficiently large number of interviews to cover a number of forces would provide adequate representation along this continuum.

The project was given ethical approval by UCL's departmental ethics committee. Email contact with a request to participate in the research was sent out to L & D leads in several police forces. On agreement to participate, further information and consent forms were sent and semi-structured interviews were carried out via Teams during the months of October and November 2020. Interviews were recorded with the permission of the participants and transcribed. Every effort has been made to anonymise the participants and maintain confidentiality as appropriate.

Interview data was coded and thematically analysed using a qualitative software NVIVO. Themes were pre-determined based on the questions and subthemes were coded as they emerged from the data. The aim of the analysis was to present a composite picture of the BL landscape across various forces in order to inform the strategic vision for BL nationally going forward.

Findings

Eleven separate interviews were carried out with 14 L & D senior members, covering 17 forces in England and Wales. Interviews were mainly carried out between October and November 2020 mainly on a one on one basis, with the exception of Interview 3 which included four members from the L & D team of one large metropolitan force. Furthermore two members from an L & D team from another large metropolitan force and one team covering two forces were interviewed. Two regional heads were interviewed who were responsible for learning and development in four forces each.

No.	No. of interviewees	Identifier	Rank	No. of forces represented
1	1	P1	Regional L & D lead	4
2	1	P2	L & D lead	2
3	5	P3a, P3b, P3c, P3d, [P3e]*	L & D lead and team	1
4	2	P4a, [P4b]*	L & D lead and team	1

[9] Hough, M., Stanko, B., Agnew-Pauley, W., Belur, J., Brown, J., Gamblin, D., ... & Tompson, L. (2018). Developing an evidence based police degree-holder entry programme. College of Policing, https://www.london.gov.uk/sites/default/files/debpdhp_pages_5.6.18.pdf

5	2	P5a, [P5b]*	L & D team	2
6	1	P6	L & D lead	1
7	1	P7	L & D lead	2
8	1	P8	Regional L & D lead	4

[Interviews marked [ ]* were carried out separately as per participant convenience]

A number of themes were explored in these interviews.

Conceptualising virtual and blended learning: a common vocabulary?

The literature[10] suggests that virtual learning includes teaching and learning that is done via digital media and delivered remotely. Blended learning on the other hand incorporates a number of different teaching and learning methods, which may or may not incorporate parts of the learning to be delivered via virtual media. So for example, the use of a virtual learning platform to store lecture recordings, lecture slides and other reading material along with traditional face-to-face teaching is a classic example of Blended Learning. Moreover, the term could also mean a combination of teaching methods such as traditional lecture format, seminar, role play, group work and individual presentation, which might be conducted wholly in person.

However the combination of the two terms virtual and blended used jointly, indicates the national strategic team's intention to support police learning programmes that have elements of different teaching methods as well as delivery methods both in person and on-line. The aim is to deliver learning that is more effective and efficient (both in terms of manpower and costs)!

One of the first questions we asked all the L & D leads was to describe their understanding of virtual and blended learning. From their responses, it became clear that the term virtual meant slightly different things to different people. For some it referred to purely those aspects that were delivered using a digital medium and to others they incorporated it as part of a blended learning programme. More than one interviewee admitted that,

> "I'm not even sure we know clearly between the two forces, even within the same forces, different people might mean different things by those." [P5a]

Another interviewee said,

> "People don't recognise what digital or blended is. That is an education piece we need to do as a combined team to make sure people understand what we are talking about. It is not a six-hour Teams call, it is little components working together, if that makes sense." [P3d]

One interviewees presented the common understanding of the difference between virtual and blended learning in these words,

> "I think we use the term 'virtual learning' for delivery that's done remotely, like through this kind of medium, but to all intents and purposes the content is the same. For 'blended learning', that's where we look at bringing the two or more mediums together, so having approaches like pre-reads for courses to reduce the contact time with instructors, using remote learning but mixing that in with the practical skills-based stuff that will have a better learning outcome if people are in the room, then that's the blended approach." [P5a]

Thus, the interviewee seemed to suggest that the common understanding of virtual delivery was merely delivery of the same training that would be done in the classroom, but now via live synchronous lectures in a virtual classroom like Zoom or Teams. However, a blended approach would

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[10] See Introduction

be a combination of different types of training approaches, but using a mix of face to face and remote training components.

Examples of virtual training were given by some interviewees to illustrate common understanding of the term:

"In policing …NCALT would be probably the place that most officers' heads would go to if you start talking about training and delivery that is not instructor led in a classroom." (P3b)

"My view is as long as we have the right teaching aids there is no reason why they couldn't press a button on a mobile phone or device and say, 'How do I deal with this?' it gives you a one minute video and you would have enough to think, I remember now. If they need more, there might be links to other things." [P1]

But during the course of conducting the interviews, it became clear that although the interviewee would begin by trying to define virtual learning, but would quickly begin to incorporate blended learning in that definition. The gradual change in the understanding of BL in L & D teams can be illustrated from the experience of one interviewee who said that prior to starting to collaborate with a University on the recruit training apprenticeships as part of the PEQF requirements, their idea of 'virtual' training was,

"Virtual learning obviously it became for me a little confused with virtual reality, which actually was also quite the flavour….So virtual sort of took on, for me, a thought of being somewhere where you lived outside of a classroom, and you lived to learn in that space." [P7]

However, having worked with Universities and external organisations, both nationally and internationally, the interviewee said that their understanding has now come to include,

"We've started to use virtual much more now commonly to probably describe a whole toolkit of taking learning out of a classroom, and virtual could mean therefore that you join up …here we could be having a training session online, we could create spaces where it could be a lecture so it wouldn't be you and I but it could be one to many. It could also be an environment where we start together and then we break out into different groups. And also, virtual now seems to be used for when I'm at home and I want to access some information digitally, virtually." [P7]

This interviewee's conception of virtual learning incorporated a blended learning approach as it included a variety of teaching methods, both synchronous and asynchronous, in lecture format, or as group work - but all of which, done virtually. Perhaps influenced by the current restrictions placed by COVID-19, the interviewee was thinking of blended learning purely in terms of what might be feasible under lockdown conditions and therefore referred to all training material being delivered only remotely.

Others however felt that the distinction between virtual and blended did not really exist since for them blended learning incorporated virtual methods intrinsically. Interviewees responded to the question what they understood by blended learning as a mixture of two, three, or several things:

"Blended, a mixture of two, to me. Self-study, either online packages that have been pre-recorded or delivered like this, and a mixture of or coming into a classroom and delivering face-to-face, hands-on type of training" [P4b]

"Blended learning to me has a number of elements, one being the face to face classroom element, the second piece being virtually delivered and the third piece being the digital content." [P3b]

"We are developing our blended courses, so students would undertake some pre-learning or pre-read materials. They can access videos, they can then come in and receive some face to face training, they can do online assessments, e-learning, access podcasts for CPD." [P5b].

Another interviewee extended the meaning of blended learning as involving active participation from the learner as well as focusing on better teaching practices. Their definition thus moved understanding of BL from focusing on the methods to deliver learning to emphasising the overriding aim of blended learning.

"I think it's a mixture of different methodologies and it can be applied to face to face as well as digital and virtual. It's active... So, for me, virtual blending learning is good teaching practice. So it's the difference between an okay teacher and a really excellent teacher that the students are able to properly understand and retain as well. So it's about building those blocks up that helps with the retention." [P2]

It appears as if the L & D leads in almost all the forces concerned seemed to have a fairly clear notion of what BL entailed, even if they might differ on the details. But interviewees were careful to underscore the fact that the meaning of the terms was not always understood well by the rest of the organisation. One interviewee felt that the reason for the limited understanding of the BL approach was grounded in the traditional notion of training that prevails in many police forces.

"We are still talking about it in a relatively narrow sense, thinking about things like the amount of autonomy that the learners have on the pace and the way they learn. We are still talking about it in a fairly centrally controlled blended way as opposed to a maturing blended model that would allow the learner to take a different role than we are first going to. Our organisation – without being pejorative to it, we are extremely immature on our curve of how we learn. Our learning approach is quite traditional." [P3c]

This explained some of the reluctance to adopt BL approaches in some forces and for some senior leadership teams as we shall see later in this report.

Overall, the research indicated that the term virtual learning elicited responses that comprised of different components including blended elements, and their understanding of the term might be restricted to one or more of these or encompass all elements:

1. That which is conducted synchronously, the same as small group classroom sessions, but on line.
2. That which is a stand-alone digital learning package to be completed by the learner in their own time
3. That which is incorporates virtual reality exercises and gaming.
4. That which allows for webinars and public lectures to a large audience.
5. That which refers to accessing information digitally.
6. That which includes a combination of remote teaching elements combined with class room teaching.

The interviews indicated that the understanding of virtual learning therefore ranged the entire gamut of options from just being stand-alone to a combination of different media; from synchronous to asynchronous; from being exclusively designed for the virtual media (i.e. simulation exercises) to being replacements for traditional class room teaching, but just via virtual platforms – and everything in between.

> *Recommendation*
>
> For the sake of consistence in understanding the term virtual and blended learning based on the research we would recommend the adoption of this definition:
>
> *BL involves delivery of training and its assessment through a combination of different methods supported by physical interaction and virtual environments. These would thus include the use of traditional face to face and virtual classroom teaching, role plays, group work, videos, podcasts, webinars, interactive quizzes, peer review, reflective exercises and other methods, that are either teacher led or learner driven, to deliver training that is effective and efficient for both the trainer and trainee.*

Current capacity and delivery of BL in forces:

In an attempt to draw a national picture of the existing level of BL training being delivered in police forces we asked L & D leads about the current capacity in their forces to deliver BL training. We asked L & D leads what the BL capacity of the force was before COVID and the responses ranged from almost no training, to a fairly established delivery programme.

> "Before COVID? Very little" [P4a]

> "COVID hasn't been the stimulus, so if I explain that the online delivery has been ongoing for two years in some of my forces" [P8]

One interviewee mentioned that they had virtually no training for recruit officers prior to March 2020 but there was some attempts at introducing some virtual training prior to that time for in-service officers,

> "We really piloted training about 200 to 300 sergeants and inspectors over about three weeks in some IT training, but it was about an hour and a half long. But that's really as much as we had done" [P5b].

While some forces had begun to think about enhancing their training programmes and augmenting it by incorporating virtual elements – most forces were forced to engage with BL firstly as part of their collaborative effort to deliver the PEQF to recruit officers in partnership with Universities and Higher Education Institutions (HEIs) and more urgently as a result of the lockdown restrictions from March 2020 which meant a drastic rethink of the way they delivered recruit training.

Some forces said that the impact of the lockdown meant they had to switch over to online training very quickly.

> "So, in March we went to pretty much 100% virtual, only because we had no other option" [P4b]

> "So, we moved in eight days from the COVID lockdown and the need to still continue to deliver training to meet the uplift in officers. We moved from our classroom-based delivery to online in eight days" [P7]

> "Our e-learning developer's team, so they develop all the e-learning and videos, podcasts, online assessment centres for recruitment – you name it, we've done it online this year." [P5b]

However, although one force went virtual overnight in the immediate aftermath of the lockdown in March 2020, gradually they worked out some kind of a compromise whereby they have moved to a more blended approach.

> "So, what are we doing now? Probably 80% virtual, 20% in a classroom, because I would say one day out of five the students would come into the classroom, go over… A bit like a lecture and a tutorial; they would go in and go over what had been learnt online, and then have the chance to put that knowledge and understanding into a practical skill type situation" [P4b]

The extent to which BL methods are incorporated into mainly recruit training depends on the collaboration with the HEIs that forces were in partnership with. Those forces that had begun collaborating with HEIs were accustomed to part of the recruit training being delivered online, whereas those force that were still to introduce the PEQF were largely delivering their recruit training via traditional classroom methods. One interviewee said that their force was one such example of the latter and was consequently unprepared for any kind of virtual delivery and this meant that the training was initially severely impacted by the lockdown restrictions.

> "What we learnt [laughs] was that we didn't have the technology to allow people to be at home and still dial in to training sessions. We didn't have the technology really to have people dialling in even if they could, so there was this huge scramble for laptops, huge scramble for webcams, huge scramble for technology. We weren't allowed to use some of the normal technology that a normal business would use like Zoom; we're not allowed. There were some other bits of technology we weren't permitted to use." [P6]

This interviewee highlighted the issue of the availability and adequacy of existing technology to deliver virtual training which was widely varied across forces. Some were able to very quickly adapt but others lagged behind. The same interviewee said that since they didn't have the technology they continued to deliver recruit training face-to-face while observing the precautions that they could. The interviewee continued further to say that the result of the lockdown restrictions meant that the need for BL came into the limelight.

> "COVID really forced people – my instructors, the organisation – to think differently and to make it work in a different way. And that in itself has really helped us push the conversation of virtual delivery within the delivery teams but also with our senior leaders as well." [P6]

Similarly, most interviewees felt that the pandemic has pushed L & D teams throughout the country to quickly get equipped and upskilled to move training online. This has given a huge boost to the national effort to push the BL training agenda in individual forces.

There was a distinction between the efforts being put into initial training for recruit officers as opposed to continuous professional development (CPD) for in-service officers. The National Uplift Programme meant that L & D departments were severely under pressure to provide training to new recruits joining the force during the pandemic and thus the need to convert all training online was taking up most of their resources, especially in forces that were some way off from developing their BL capacity. The somewhat forced and rushed move to transfer all training online meant that the focus was on ensuring continuity of delivery, regardless of whether the content was suitable for virtual delivery. Going forward, the success of BL would depend on whether L & D teams and instructors have the capacity and skill to design and deliver training using BL so as to maximise the impact of training.

Design and Delivery of BL in forces

When asked who is responsible for the design and delivery of the BL training content in the force, almost all L & D leads said that their training was designed and delivered in-house by their L & D teams. Most forces had a mix of teaching staff who had practical and operational experience and those with some specialist educational background. Only a few forces did not have specific educational experts to help design their training material, but were relying on expert police practitioners with a lot of experience in delivering training to both design and deliver.

However, the question that provided a varied response from the interviewees focused on who would be taking the decision about which part of the training/education programme was suitable for virtual delivery and what should be delivered in person in a traditional classroom. This is inherently a two-pronged question as it requires decisions to be made about two aspects:

- Firstly, whether it is possible to distinguish between content that is theoretical or knowledge based and that which is practical or craft based?
- Secondly, in the event some part of the training has to be delivered virtually - whether it would require synchronous or asynchronous delivery?

The choice of designing the most appropriate delivery method would further depend on whether the training material requires the learner to work with peers and interact with the trainer or whether it can be mastered by the learner in their own time by themselves. This fundamentally requires anyone who is taking these decisions to have both domain knowledge and knowledge of pedagogy. The extent to which the synergy between these different areas of expertise was harnessed in different forces varied.

One L & D lead said that at present training structure and design decisions was made by practitioner instructors in force,

> "BL will just be one tool within a range, within a suite of a toolkit of things that we have available to us. And I would suggest that our practitioners will be in a place to determine which is the right tool to use, for the right learning that those individuals have to undertake at the time. But what I wouldn't want is just a one-size-fits-all, 'This is BL and that's all you get,' because that won't necessarily be the right thing. I think it's been a case of needs-must." [P4a]

However decisions made by the instructors would ideally have to be signed off by a more strategic group in force:

> "It would be our Training Commissioning Board plus our force leadership team to have that discussion, because I think actually it impacts massively, so it would be a discussion at the Training Commissioning Board and then sent up to the Gold Group for ratification of the decision or a proposal around that. That would be my suggestion, but if I'm completely honest, we haven't had that conversation yet because at the moment it's all eyes down on [laughter] getting done what we're doing today as opposed to six months' time as and when" [P4a]

Understandably, the L & D lead was referring to the current situation as a firefighting response to the impact of the pandemic. L & D leads in those forces that had already begun working with their partner HEI's in delivering recruit training said that often the decision was made with the help of their HEI partners – thus, by and large the L & D staff provided the domain knowledge and their HEI partners were the pedagogy experts. As one interviewee explained,

"Going forward we're going to have, I guess a Curriculum Management Group where we'll have key stakeholders from the Training Team, our Training Team, the Lecturers from XYZ, the Sergeant, myself and somebody else from University XYZ, as well as our Quality Assurance Teams from each side. And we're going to look at the feedback we've been getting because we ask for the feedback from our students in terms of how's it going, what's good, what's bad, what's ugly, and then that's helping to inform our decisions as well as I guess our ideas as professionals as to what's gone well and what hasn't." [P6]

This indicated that L & D teams recognize that the introduction of BL is in its nascent stage and are being responsive to learner feedback in designing their programmes going forward. Although almost all L & D teams said that they were evaluating their training programmes and getting feedback, a lot of this was more immediate feedback which focused on whether the training was engaging and whether the participants found it useful. However, with the introduction of the PEQF, L & D teams are becoming more aware of the need to evaluate their training programmes more intensively, as this interviewee said,

"So we've done our second round under this new enhanced programme. And we have an evaluation strategy that looks at not only the quality of the training but the quality of the retention of the knowledge as well. There's more to do on that because we want to know in six months' time and a year whether that's been retained." [P2]

However, not all forces have a firm evaluation plan going forward, some are still waiting either for clarity around the funding situation or setting up their PEQF partnerships with HEIs.

Returning to the theme of design decisions, some interviewees felt that their ICT teams would be best placed to make some of those design decisions about ensuring the content is suitably interactive and engaging,

"Yes, and that's where our ICT Development Team can work out how to package it and make sure it's interesting enough. Because if you're just going to put a load of lesson notes to read on a PowerPoint, that isn't going to be particularly productive for most people. So, how that content is packaged would be developed by our ICT Team." [P5a].

This same force has a 'performance, design and evaluation team' who would work with the subject matter experts in the force, as this interviewee said,

"So we identify the best platform of delivery, see if we can make it collaborative, we want to make the best use of our resources, and if we can do it right and do it once then obviously that's far better. Then we quality-assure the product that's been developed, we see it delivered and then we will do some evaluation." [P5b].

On the other hand, one interviewee said that until now L & D teams did not really have any support to help them decide how or choose what medium they would be delivering training, but with the forthcoming BL national strategy to support the national Uplift Programme, this can change,

"I don't think that L&D have ever had any input around how you choose your delivery method to best land the learning, which is a bit of the programme like we're doing with Learning Age Solutions, so that they can start thinking through and having a toolkit that they can use in doing it. So, don't just pick up the shiny new digital wowee gadget, consider actually where is that best placed, don't run a video because it has the wow factor but doesn't actually deliver anything, so make everything meaningful." [P8]

Thus, the importance of choosing the right medium for delivering required learning most effectively and appropriately was again underscored by this interviewee. Furthermore, the interviews taken together revealed that in order for BL to succeed all the different aspects of the training design and delivery ought to be seamlessly integrated so that decisions about what content should and can be delivered via what medium are joined up with trainer expertise and skills to deliver it, who in turn work closely with digital experts in packaging it. Finally, it is important to ensure that user evaluation can be fed back into the design of the next round of the training programme.

Recommendation

- Thus, the integration of structure, design, delivery of learning as well as feeding back evaluation findings into BL learning would require the combined expertise of practitioners, IT specialists, education specialists, and evaluators. They all need to be working jointly to ensure that the BL approach is dynamic and flexible enough to deliver the learning outcomes and meet learner requirements.
- Results from the evaluation of training and learner feedback needs to be incorporated in the design and delivery of learning.

Appetite for BL training

In order to understand whether there is appetite in police forces to support BL going forward, we asked L & D leads about why they thought it was an important agenda to pursue. The resulting responses were common across many forces

- The first motivating factor emerged from the realisation that technology was the way forward, either because it was modern and the 'thing to do' or because it was so ubiquitous that harnessing its potential was the smart thing to do. As one interviewees said,

    "Instructors wanted to use the technology that everybody else at home was using, so that whatever their device was entertained them, and we wanted to try and have some of that." [P7]

    Another interviewee claimed,

    "I guess it's the right thing to do and we need to modernise our delivery. We need to engage people more in learning." [P6]

- The second motivating factor was the benefits of using BL in terms of it being a superior pedagogic tool in terms of the flexibility and options it offers, as this interviewee explained,

    "It gives you more flexibility. I think a mixed methodology is better because you still need contact time, but whether it's the police or for any other environment, I don't see the world going back to the way it was. I think people have recognised the benefits of online access to everything, whether it's work or whether it's training." [P4a]

- The third main motivating factor that emerged from the interviews was the perceived advantage of using BL in terms of the cost and resource saving that they thought it engendered. As this interviewee said,

"I think our leaders at the time maybe a couple of years ago saw training delivery as just a tick-box exercise, and do you know? If it is tick-box then it doesn't need face-to-face; if it's just about knowledge-giving then it can be done in another way. And I think people are sort of seeing that now, with COVID. There was also a drive for efficiency; how can we be more efficient in what we deliver, so that was coming from at the time my line manager."[P6]

One interviewee linked the flexibility of delivering training online meant it freed officers to engage in more frontline work as it saved time and felt therefore it was worth pursuing even if the focus was not on any intrinsic educational benefit of adopting a blended approach. This interviewee said they supported a remote asynchronous virtual approach,

"Because of abstraction really. The more time they are in the classroom, the less time we have doing the things like tutoring, on-the-job learning, and learning in the mode of doing the role." [P2]

Another interviewee saw the apparent savings as better use of public funds,

"Yes, it will save costs to a certain extent, but if that means that officers are able to go out and do policing, if the public see them more and they're able to dedicate more of their time to actually doing their role then I think everyone is a winner. And why wouldn't we? It's the best use of public funding." [P 5b]

Overall, this interviewee summed up the motivation in their force to introduce and develop a BL approach to recruit and subsequent police training in these words,

"We are trying to make the learning more targeted, make it more accessible, make it relevant, make it count. There is a time element there. If we are going to get efficiencies in the way we deliver then we have to move to this blended approach." [P3c]

A number of interviewees also acknowledged the role of the COVID pandemic in adding an impetus to the BL agenda, support for which would otherwise have taken much longer and encountered more resistance. However, once it became apparent that given no alternative almost all forces rose to the challenge of delivering training online (either partially or entirely) even with the existing limited resources, forces have realised that on the one hand, investing in developing their BL capacity would be worthwhile, and on the other, resisting the national agenda to move towards more BL approaches would be futile.

As a final word, one interviewee suggested,

"But yes, we need to be careful that we use it properly… with a bit of thought and a bit of evaluation as to how it actually works and it can be quite a challenge to persuade the decision makers that they need to think quite deeply about what is the learning that is going to happen?" [P3e]

Thus, the role of decision makers becomes vital in understanding the appetite in a force more broadly for supporting the BL agenda. Therefore L & D leads were asked about the attitude of the three most important interest groups involved - namely, Chief Officer teams, instructors, as well as trainees as the target audience.

Most L & D leads declared that they had the support and backing of their senior leadership team for the BL agenda. Whilst some of them took a genuine interest and were knowledgeable about the approach and its place in education, others were interested in principle as it was considered to be a progressive step in the right direction. One interviewee said,

> "Our Chief Constable, even though he would say he doesn't understand a word of what we're talking about, he sees the benefit of it and he sees the necessity of it. And that's okay; we don't mind if he doesn't understand the technical, who needs to, as long as we're delivering."[P7]

In forces where the chief officers were on board with the BL agenda they actively showed it by sanctioning funds for equipment and gadgets to support virtual learning – as one interviewee said,

> "We definitely, definitely have the support, no issue for that. I mean, they gave me money for a virtual reality kit, and it wasn't an insignificant amount; it was a lot of money!" [P6]

Another interviewee said that some chief officers were not quite as focused on the developments that have been happening over the past few months and years,

> "I don't think they understand it properly... For the first time on Monday there was a big chief officer meeting and the chief constable said, "Shouldn't we be moving to a more blended pathway?" and it's like whoa!" [P2]

Overall, the attitude of the Chief Officer team ranged along a continuum - with some chief officers firmly rooting for a return to traditional classroom teaching once life returns to normal post the pandemic at the one end, and those who understand and appreciate the contribution of BL to police training and support it wholly at the other, with a variety of positions in between. One interviewee summed up the two viewpoints at the extreme end of the spectrum. The balance according to this interviewee lay somewhere in between with adopting a blended approach that is appropriate for achieving the intended learning outcomes,

> "You've got some executives that say "Don't buy into it, the classroom has always worked really well for us. You have to do the face-to-face, you have to" – forgive me, it's their saying, not mine – "you have to see the whites of their eyes." And it's like [laughs] "What? What does that mean?" [Laughter] And then you've got some Chiefs that are quite forward-thinking, love the gadgets and everything else. I think the balance in the middle is not getting overawed with "I've got this shiny gadget and I'm going to use it every time," it's understanding when it's appropriate for it to be used, and how actually the content and the design of your learning programme should have a variety of mediums used throughout it to make it so that it is purposeful and beneficial and accessible." [P8]

This difference in attitudes of chief officers seem to be essentially grounded in their general philosophy and worldview; the first group of senior leaders ostensibly favour retaining more control because they have little trust in their officers and would like to ensure that they are physically present for their training. Alternatively, chief officers at the other end of the spectrum seem to have a more laissez faire attitude and trust that individuals will do the right thing. These officers, thus favour self-directed learning programmes, which give greater control to the learner over when and where they learn. However, this attitude, combined with a 'love of the modern' might lead some chief officers exhorting virtual routes more than is either required or is helpful. The interviewee above recognised

that neither extreme position is particularly beneficial and a more moderate and balanced approach would be ideal.

Instructor Attitudes

Almost unanimously all L & D leads said that the response of the instructors to the BL agenda was mixed - with some embracing it wholeheartedly, and others being very resistant to the idea of moving out of the traditional classroom. The reluctance of the latter was attributed by the interviewees to the fact that established trainers felt on shaky terrain in terms of the technology and skills required, and were apprehensive of the unfamiliar. One interviewee attributed this discomfort to the personal teaching styles and preferences of trainers,

> "Some trainers didn't like doing this interactive stuff, just because they felt very uncomfortable. Others actually found this far easier; they would rather have had 20 faces on a laptop screen and talked to them like this, because that's the way that they feel more comfortable." [P4b]

Another interviewee attributed some of this discomfort with the new ways of virtual training adopted in a hurry during COVID to the lack of requisite skills,

> "If I'm completely honest, we weren't necessarily equipped for this. We weren't expecting COVID; who was? And so, when it was a sudden switch, it wasn't a gradual process, it was …a bit of a shock to the system….Fundamentally, I don't think anybody was ever really fully skilled in delivering training in this form as opposed to being in the classroom; it's a big change in how you do your job. But I think I would say that people have reacted admirably to it and have done the best they can." [P4b]

One interviewee attributed the reluctance of the instructors to adopt BL to a fear of technology,

> "It's a fear factor certainly for my trainers, and I get it; to have yourself on a screen like this and potentially you could have 20, 30, 40, 140 people potentially looking at you on a screen. Whereas they'll be so confident standing in front of a group of people anyway, but it's the fear of the technology" [P6]

However, interviewees said that once the instructors had experimented with and begun growing in confidence with using virtual and blended methods, they could appreciate the ease and efficiency with which training could be provided to a large number of students virtually from the comfort of their own homes.

Trainee attitudes

Similar to the attitude of instructors, trainee attitudes towards BL was also mixed. One interviewee said,

> "Anecdotally, some like it, some don't; some people are quite happy sitting in a room on their own and receiving information, others need to get their energy from other people and need that contact to do it, so I think there have been some mixed reviews. And some of it will come down to how engaged the trainer is in that process as well, I suppose. If they don't like it, that's going to come across in the training, isn't it?" [P5a]

On balance, the attitude of the trainees, both recruit and older in service officers, towards BL has been overwhelmingly positive according to the interviewees. Despite initial apprehension, especially amongst in service officers who might have not been as comfortable with learning virtually, most

officers having undergone an experience of remote learning found it to be effective, engaging and most importantly saved them time and the expense of travelling to the venue.

One interviewee said,

> "We did lots of surveys with the students and that was far better received by the students than anything else. Because you'll get quite a mix in the police; you get people who are straight out of university and straight out of education who actually don't mind learning at home because that's what they've been used to, but you might get somebody who's an older joiner who has either been in the military before or they've had a career before … they haven't done any kind of educational work or anything like that for a long time and they find that very difficult to learn, so they were the ones who really wanted to have that sort of communication link all the time." [P4b]

Another interviewee endorsed the success of online training with both recruit and in service officers,

> "We have been running Teams training for between 200 and 250 officers with online delivery and we've run that and the feedback has been fantastic, far better than I thought it was going to be." [P5b]

The interviewee went on to elaborate on the specific reasons why training delivered online can be successful,

> "Both with male and female officers you get the real alpha types and I think policing tends to attract that personality type. If you put them into a big group in a big lecture theatre, they don't like asking questions because that might risk asking a silly question. I know there aren't silly questions in training. Whereas online they were actually working from home, able to sit in the comfort of their own home, and we had far more chat on the Teams chat in the background as they were watching the training, than we had ever envisaged. We played some really quite impactful videos. There was a voice of a child, so you had a victim, a 15-year-old girl who was talking about her experience within a domestic abuse household, and some of them [*trainees*] were saying it would change how they policed in future. Now I don't think they would have risked saying that because that's a little bit pink and fluffy for policing, but they really did engage almost on an emotional level, which I suppose in some respects is what it was meant to do. So really, really encouraging." [P5b]

However, the response was not always positive in all forces, especially in those forces where training in general is less valued. This has negative consequences for training where the officers have to be in charge of their own learning. One interviewee said,

> "I don't think the appetite [*for BL*] is high. I think protected learning time is a struggle in policing. I don't think it's valued. CPD is not valued as much… you need to create your own appetite, you need to be hungry for continuously developing and progressing your professional practice and in policing it doesn't happen" [P2]

This was where the difference between wholly virtual and stand-alone training was talked about as if it were the same as BL. Whilst this might have been seen as a problem by one interviewee, another considered the advantages of such stand-alone training,

> "I think they are all intelligent enough to see the value of e-learning where it serves a purpose and it gives them something they need when they need it, because one of the biggest problems, I'm sure you have been told this before, is that lots of officers were complaining

that, "I can't get hold of training when I need it," because of the constant backlog, the capacity to deliver it, so actually to have e-learning that is there at their fingertips and sits on a platform is valuable" [P3e]

However, one danger of the nearly total virtual nature of recruit training that was made necessary due to the lockdown restrictions also came with its own drawbacks was flagged by one interviewee who said,

"And actually, having never been faced with a working environment before, to just suddenly go into a learning environment which is virtual whereby you're in your own home and you don't necessarily have your uniform in the same way, all of those things that make you feel like a police officer and being with your colleagues and addressing your Sergeant or your Inspector as Sir or Ma'am, all of those things that differentiate you when you join the police and the professional environment is lacking when you're just sitting at home learning." [P4a]

The interviewee raised one of the biggest challenges faced by the BL programme, the issue of socialisation into the police profession, which we shall discuss in detail in the final section of the findings.

Summarising the experience of the instructors and trainees, one interviewee said as a concluding remark,

"I think once we gained some more confidence with technology, and because *abc* [*the new platform*] is so easy compared with *xyz*, which we were using, and it's become more stable, confidence has really grown. So whilst it will never be a complete replacement for face to face, it's accepted now that it's here to stay." [P5b]

What remains to be seen is whether these attitudes match up with assessment of student learning. Only time and a thorough evaluation of the changes in the training programmes will tell whether and how BL can be effective as a training and education approach in furthering the professionalization of policing.

Recommendations

- Although BL might be perceived to save costs and resources in the medium to long term, the upfront investment in setting up and conducting BL learning programmes in the initial set up phase should not be underestimated by forces.
- BL methods must be used as and when appropriate and necessary for achieving the requisite learning outcomes and not purely because it is 'new and modern'.
- Trainer and trainee buy-in will depend upon whether they feel confident in using the technology, have the requisite skills, and have had first-hand positive experience of engaging with BL.
- Inherent resistance to give up traditional classroom training will be overcome only when decision-makers see and trainees experience first-hand, the benefits of well-designed and technologically manageable BL programmes.

Challenges to the police BL programme

Four major areas were identified by interviewees as challenges to the BL programme to enhance police training going forward. These were:

Technology

The availability of appropriate technology in the form of software platforms, digital equipment, necessary internet availability and capacity as well as the necessary skills to be able to work with the technology. As this interviewee said,

> "The biggest challenge, well, technology it goes without saying; you've got to have the right technology in place to be able to do it and to do it successfully" [P4b]

Those forces that were caught out during the pandemic without the technology, equipment, or resources to deliver training remotely felt this most keenly. Experience of providing training remotely during the pandemic served to highlight a number of challenges with respect to technology: the availability of appropriate learning platforms, software, hardware, devices and the connectivity or adequacy of internet provision. Furthermore, an additional challenge would be to provide for adequate expertise to install, manage, and administer the virtual platforms which must be both secure as well as compatible with existing police resources and capabilities. However, what the recent experience of the pandemic also demonstrated was how well forces were able to rise to the occasion and find solutions to what would otherwise be seen as insurmountable problems. However, interviewees were careful to note that although the forces responded commendably in this emergency situation, going forward, there was a need for a strategy and the resources to support the BL programme on a more sustained basis.

Upskilling of staff

L & D leads were aware of the challenges ahead in terms of upskilling their instructors to design and deliver BL. The twin impetus of the introduction of the PEQF, with its associated formal quality appraisal standards, and the necessity of having to move training online has meant that forces that had focused less on modernising their training have had to take a good hard look at their training practices. The was encapsulated by one interviewee,

> "There is a big journey we have to go on as L&D. We don't have a lot of people who have had even the most basic inputs in training. We are asking them to stand up and deliver training without even what colleagues like yourself would consider to be the absolute minimum, which is a failing on our part as an organisation." [P3a]

As mentioned earlier, interviewees were aware that not all instructors were on board the BL agenda, and attributed part of that reluctance to adopt new methods to the fear of, and lack of confidence with new technology. Thus, even if the training were designed by professionals, the delivery by instructors in forces necessitated they be upskilled and willing to be able to work with BL methods. As this interviewee said,

> "You could have the most well designed programme that will absolutely work in a virtual and blended approach, but if that individual's teaching skills are not up to scratch or they don't think virtual and blended works then it won't work. Some of this is about creating the right climate." [P1]

This interviewee raised two important issues with regards to trainer skills- not only did they need to have the technical skills to engage with virtual and blended teaching methods appropriately but to also have the pertinent pedagogic knowledge and skills to design the contents of the training programme in the first instance and further so that it is tailored to a blended approach. This was further developed into discussing that perhaps some of the dissatisfaction with current training would not be magically addressed by introducing digital methods, but by addressing the problem and shortcomings of the training content and design in the first instance. However, redesigning training to incorporate blended methods would provide the opportunity for Learning and Development departments to take a closer look at their training materials and redesign them afresh if required to overcome existing problems, if any.

The new learning inputs that are being provided by Learning Age Solutions was considered a very welcome development by many interviewees.

Costs:

The attitude towards costs were varied across the interviewees, while most interviewees recognized that there were considerable savings to be had if a substantial section of training was moved online, in terms of travel time, travel costs, venue costs, food and accommodation costs. Although there was recognition that there would be costs involved in procuring the necessary technology and gadgets, only some realised that the BL project was not merely shifting what was currently being delivered in class to online platforms but would require more effort in terms of designing a comprehensive training programme whereby the various parts work cohesively. One interviewee said that the biggest challenge was not just the cost of getting and maintaining all the equipment and technology but the lack of a coherent plan where all the digital solutions fit together seamlessly,

> "So the digital infrastructure being available to everyone who needs it … the administration of all of this digitalised product so that all the support that goes into it… That's the biggest challenge, because this all needs funding, it all needs money and actually a structure as well. One of the challenges I'm coming across now is that because … to be honest with you, we seem to be trying out lots of digital solutions but actually how they all fit together and how they are maintained is a question that I'm asking a lot at the moment." [P 3e]

Thus, the costs of implementing BL and the setting up of a proper framework to support and maintain it should not be underestimated if the programme is to be successfully rolled out.

Continuing support of senior leadership team

One interviewee said that although the very senior leadership is supportive of BL, it is the next level of senior managers and instructors who are resistant to change, and are the barriers,

> "So, those are my barriers. You know when you say "Have you got the support of the senior team?" Yes, absolutely, but it's not necessarily always the senior team who are the blockers, it's your middle to senior management I think, sometimes." [P6]

Another interviewee said that although it appears as if the senior leadership team is fairly supportive, a change in the way in which police training and education is conceptualised needs a sea change with the professionalization agenda, and it is not often guaranteed that these proposed changes will continue to receive support in the future, given the level of resource and cost investment required for implementing the necessary change. In their words,

"I think we just don't have these conversations at the moment, not in my experience so far. It's quite fast-paced, task-focused, it's about delivery, and we don't seem to have that longer-term view right now." [P5a]

The degree of senior leadership support for the BL agenda could determine the future and quality of training and ultimately, the quality of service delivery to the public. One interviewee cautioned that the challenges to BL are twofold the desire and resources to invest in BL in these words,

"First and foremost, the innovation and ambition to do it and secondly, the financial elements. So, you'll have some big key leaders that buy into the environment of blended and investing in the digital; you'll have other forces that go "We can't afford that so we're not having that," so you bring in this two-tier workforce even though it's a national service." [P8]

The interviewee was flagging up the danger that training and resulting police service offered to people might be of different qualities because of different levels of investment in the overall training programme by senior leaders. This could create a situation of a postcode lottery in terms of the service citizens receive from the police.

Thus continued support from the senior leadership team was vital for the success of the BL agenda.

Socialisation

Isolation and lack of socialisation to the police culture were two sides of the same coin causing concern for L & D practitioners. A few interviewees reported that the feedback received from recruits who joined the force and underwent remote training during the early stages of the pandemic was that they were feeling isolated and not "like a police officer". In-person training, wearing of the uniform, and introduction to the organisational culture and hierarchy does contribute to their enculturation in the profession, as mentioned by interviewees previously while discussing the aptitude for BL of trainee police officers.

Furthermore, interviewees expressed concern that remote learning does not provide the atmosphere or context conducive for learning for all officers. They might not have access to the equipment or the space, and in some cases, the dedicated time, where they could spend focusing on their study. Pure online learning makes interaction with peers and colleagues harder and opportunities for peer learning can be lost. Often the flexibility of working from home may not be very conducive to learning as a dedicated learning environment would be - as this interviewee said,

"I remember being at university and part of the joy of being in a seminar was that you had that level of debate with your colleagues, and you'd sit round and you'd have those really detailed conversations about things that you'd get quite passionate about. Do you lose some of that when you're sitting in a virtual environment, potentially distracted by the front door going or by your dog barking or some family member walking through every five minutes [laughter] making cups of tea?." [P4a]

Whether and how the benefits of interaction with peers and colleagues could be retained in a BL training environment was an important question for the interviewees. Secondly, most interviewees accepted therefore that a blended approach of virtual and in-person training, specifically for new recruits and special units was essential in order to overcome some of these identified problems.

Looking forward

When asked what their plans and aspirations with respect to BL were going forward, one interviewee expressed the general view,

> "We are now embedded in virtual learning, and that's very much the direction of travel that the organisation wants us to take. So, we have let the genie out of the lamp now." [P7]

Overall it seemed as if L & D departments were gearing up to overhaul their training and incorporating BL as a result of their experience during the pandemic. Interviewees seemed positive and eager to engage with the new challenges that lay ahead. The above interviewee said that this was indicative of a national appetite for moving training evidenced by the procurement of a software platform for all forces enabling them to have similar capability so as to work nationally on improving training provision.

> "I'm so, so pleased that nationally now we're embracing it, because the national enabling programme obviously introduces us all now to Office 365 that does this, you and I are on Teams, and we could not have thought about having any sort of joined up national systems, national learning without this capability." [P7]

Another interviewee said that between the HEIs and the training in force, recruit training would incorporate a blended aspect in the future,

> "I imagine that the blended kind of aspect will come from the HEI being the virtual side and our instructors being the more practical elements and being the more classroom-based work really. That's how I envisage it going; it might be, it might not end up like that, but that's kind of how I foresee it in 12 months' time." [P4b]

However, while some forces were happy for a substantial portion of the training to be delivered online so as to reduce abstraction and free officers to be on duty [for e.g. P2], not all forces were content to have their HEI deliver training virtually, one interviewee said that their HEI was proposing a higher percentage of virtual training than their force was prepared to accept [P3e].

Furthermore, interviewees had a number of plans for CPD going forward from bite-sized videos that officers can access at any time even on their phones, to running regular lunchtime webinars, to holding whole day conferences online and providing both synchronous and asynchronous training programmes.

However, there were a few cautionary voices as well which were urging caution in terms of embracing virtual learning unconditionally, as this interviewee said,

> "I think policing is really good at seizing shiny new things and just implementing it wholesale without really looking at the wider implementations and what the down sides of some of that stuff might be." [P5a]

It was also interesting to note that although the enthusiasm for BL was high, there was recognition that not everything about traditional training was worthy of rejection. One interviewee said,

> "We will always need face to face training, but where we can do it in a more interactive way, then we will, but not for cost purposes or at the risk of the quality of the training." [P5b]

Thus, the emphasis seemed to be on providing good quality training, using a wider variety of tools and methods, of which BL would be an important one.

Discussion

Interviews with L & D leads were conducted to gauge the appetite in forces for furthering a BL approach to police training. Findings indicated that as a result of the pandemic and resulting lockdown restriction forces had to move training online in a matter of days. Subsequently, two highlights emerged: it was possible for training to be delivered remotely, and forces were capable of delivering it. Furthermore, neither instructors nor trainees were unappreciative of the advantages of virtual training methods, with some actively embracing it as the preferred option. Having seen the advantages of a BL approach, the research revealed a certain sense of ineluctability about BL in L & D departments going forward. Although a number of forces had begun developing their BL training capacity prior to COVID, the move was accelerated as a result of COVID. The experience of remote training during the pandemic has shown it is both possible and desirable, especially if it is considered to be cost effective in the long run and more effective in achieving learning outcomes as compared to traditional methods.

When asked to define their understanding of BL, there was some lack of consensus, the term meant different things to different people and even to the same person at different times and in different contexts. Whilst most of the interviewees understood that virtual learning was only a part of a blended approach, often they referred to the characteristics of purely virtual methods when talking about BL, and at other times, they accepted that BL could include face-to-face classroom interaction as well. There was universal agreement amongst interviewees that there was a need for an agreed upon and shared definition for BL within and amongst forces nationally.

For the most part, it appeared as if L & D teams were focused on recruit training when discussing BL methods, and less so on CPD more broadly, although there seemed to be a certain appetite for developing asynchronous virtual training programmes for CPD. However, a lot of the concerns that L & D leads expressed about BL going forward were with respect to addressing issues of isolation and the need for initiating new recruits into the police culture. Consequently, it appears clear that there is less likelihood of BL being delivered entirely on line, but police training, post COVID is more likely incorporate elements of both virtual and face to face interaction. The question that remains to be answered is who make the design decisions about which aspects of the training will be best delivered online, and what parts require face to face interaction. In part the answer would be determined by the learning outcomes that need to be attained – and partly by whether the training is focusing on the knowledge aspects or the craft aspects of professional practice. Another way of answering the question would be to distinguish between information enhancement vs skill enhancement, which can

help decide whether a wholly asynchronous virtual approach or a blended approach would be recommended. The exact proportion of the different methods and tools to be used within the blended approach would then be the prerogative of the individual forces and their L & D teams.

The next most important aspect was distinguishing between the design of the training and its delivery. Often these are left to the same team but in fact tap into two different areas of expertise. There is recognition of the fact that there are pockets of skill shortages in forces often compromising the quality of training delivered. Interviewees recognised that it is not just the mode of delivery of training that determines its success, but it is the quality of instructors and the training material that is of paramount importance. As one interviewee said,

> "I suppose critically, you could assess BL the same as instructors; you get some good instructors, and you get some absolutely terrible instructors. And [laughs] depending on who you happen to have on a particular day might result in you having a better or worse outcome for a particular subject matter." [P4a].

This sentiment was echoed by other interviewees and reiterates the point made by P1 earlier in the report, that it is important for the trainer to be on board and be upskilled, not only in the technology, but also has the requisite pedagogic know-how to design training incorporating a blended approach so as to enhance the impact. Thus, at its most ambitious, the success of the BL project would not be restricted to just successfully transferring what is currently being delivered by instructors in person to online methods, but to be able to dovetail several methods and tools so as to improve the impact of training on the knowledge and behaviour of officers, and ultimately in the quality of service delivered to the public. L & D teams need to recognise that successful implementation of a BL programme would require integration of domain, pedagogy and technology expertise.

Ultimately, whether the BL programme delivers on its promise in the time to come, would require a thorough assessment of how the BL programme is being rolled out and delivered in forces. A comprehensive evaluation programme is recommended which assesses and compares the effectiveness of the BL approach to traditional classroom methods to evidence whether there is an improvement in results. Furthermore, a cost-benefit analysis would provide evidence to test the hypothesis that there are considerable cost savings in adopting a BL approach. It is encouraging to note that there is appetite within the forces to devote some attention to evaluation going forward as this interviewee said, "I think we should be really careful in that we evaluate properly to see what did work and what didn't and what we can do to make things work." [P3e]. At the same time, L & D leads were realistically aware that how this would be executed would depend on the funding available for evaluations. Sustainability will depend upon senior officer support for and evidence of impact once the process rolls out fully.

Conclusion

Interviews with police L & D leads painted a detailed and rich picture of the state of BL in forces following the forced move to digital delivery of training due to COVID lockdown restrictions. The response of instructors and trainees is encouraging, though not without challenges. At present it appears as if most forces have the support of their senior leadership teams but there is uncertainty over whether this will continue. There is universal recognition that BL offers a valuable resource and although there are a number of challenges all efforts are being directed towards putting adequate arrangements in place to ensure that the investment of time, resources, and upskilling of instructors

in BL pays off in terms of improved and more effective training for recruit and in-service officers and ultimately in offering a better service to the public.