Making the impossible, possible.

Lessons learnt to ensure embodied physical education teacher education within COVID-19 times and beyond, regardless of the learning medium.

Kristy Howells[a]*, Alison Murray[b], Julie Pearson[c] and Emma Whewell[d]

[a]School of Psychology and Life Sciences, Faculty of Science, Engineering and Social Sciences, Canterbury Christ Church University, Canterbury, UK.

[b]Department, University of Roehampton, London, UK.

[c]Department, St Mary's University, Twickenham, London, UK.

[d]Department, University of Northampton, Northampton, UK.

*Corresponding author - Dr Kristy Howells, kristy.howells@canterbury.ac.uk

Provide short biographical notes on all contributors here if the journal requires them.

Dr Kristy Howells - Kristy is a Reader in Sport Pedagogy and Physical Education. She lectures physical education primary teacher education. She is also a researcher who focuses on young children's physical education, physical activity, sport sciences, mental health, diet and fluid intake. She also co-leads the Early Years SIG for AIESEP.

Dr Alison Murray - Alison is a Senior Lecturer and Subject Lead in Primary (Elementary) Physical Education, who specialises in complexity, connectiveness and collaboration to bring creative Physical Education to life. She is also a track and field coach and researcher in metacognition.

Dr Julie Pearson - Julie is a Senior Lecturer at St Mary's University. She is the Course~~Programme~~ Lead for the Primary PGCE (M) with a Specialism in PE course and for Primary PE. Her value-led research is about developing a culture of care within educational settings, especially within PE.

Dr Emma Whewell - Emma works at the University of Northampton in the Faculty of Arts, Science and Technology, she is the Programme Leader of the Physical Education and Sport degree. Emma works at the University of Northampton in the Faculty of Arts, Science and Technology, she is the Programme Leader of the Physical Education and Sport degree.

Abstract – 200 words max (currently 200)

This thinkpiece discusses and examines how four Teacher Educators made what seemed like the impossible, possible. Through the rigorous analysis of Newell's theoretical framework of constraints, we were solution focused to develop innovative, creative, original ideas to continue to effectively teach primary trainee teachers how to teach physical education. A feat that was still possible without any facilities, without any equipment and at times solely online. Physical education is normally an embodied lived experience, our findings share new ways of how to use the constraints to be solutions to effectively and efficiently. We used the lens of the individual, environmental and task constraints to have positive lived embodied experiences of physical education. We found this was possible if the learning: was student centred; involved both student choice and voice; included sense making activities; involved team building collaborative activities and if digital fluency was developed as a group. Our findings our supported through our shared photography that we used to help us think about our practice and solutions. We offer our thoughts as recommendations to support the next generation of teachers in teaching physical education competently and confidently through all types of learning mediums that they may need in the future.

Keywords: Physical education; Teacher education; Embodied; Collaborative.

Introduction

In this thinkpiece we examine the lived experiences of 4 Teacher Education Physical Education Practitioners within the South East of England, and how they shared experiences helped each other continue to develop reflective embodied physical education within their teacher education practice. Nixon (2008) proposed that education is critically about 'learning from one another' (p.10). This drawing together occurred during COVID-19 times, but the lessons we learnt go beyond the pandemic enabling a more sustainable physical education teacher education practice that could continue to be 'possible' regardless of the learning medium. Our thinkpiece offers a sense of hope and our solution focused experiences when the world felt closed and difficult to navigate.

In England during 2020 and 2021, three national lockdowns impacted teacher education in an unprecedented way, with providers utilising face to face taught sessions, where possible alongside hybrid blended online learning as well as going totally online. In terms of physical education as a subject, most learning within teacher education is through an embodied focus, with face to face learning. Aartun et al. (2020) proposed that PE should be taught through pedagogies of embodiment where learners are given the opportunity to explore movements and to understand the development of body awareness and meaningful experiences. Within this type of embodied learning student teachers construct their learning through joining the body and mind, through physically learning within a practical space environment, using their own bodies, through partner work and then through breaking down how to teach the movement they

have just learnt. This is key for our trainee teachers to be confident and competent in teaching a risky subject area within school.

But what happens when the world stops and sport and physical activity spaces were closed, or the sports facilities that you used for practical experiences, were turned into mass testing centres and then vaccination hubs overnight, leaving you practically 'homeless'? How do you navigate such extreme disruptions, that no other primary education subject area experienced to the same extent? How do you ensure embodied lived experiences? How do you turn physical education totally virtually within a matter of days? A notion that felt at the time quite impossible and the ultimate challenge, how do you make the impossible, possible and reconceptualise the way physical education is taught.

Varea and González-Calvo (2020) described teaching PE during COVID-19 times in Spain as touchless and bodies being absent. But we did not want to feel like the students were losing anything. Physical education within Teacher Education is deeply rooted in experiential learning, constructivism and collective knowledge building (Caldwell, et al., 2020.) With those definitions in mind, we set about to ensure our student teachers would be ready to teach physical education in school settings. However we also had to be mindful that those school settings also changed and children were learning from a home setting, the vulnerable children were still in school, and we needed to be mindful of equipment that was and was not allowed to be used as well. We embraced Nixon's (2008) thoughts on change, who suggested change is possible and should be viewed as positive action as it allows educators to achieve difference from the inside out rather than being directed by management or policy, yet we needed to

acknowledge the policy and changes were non-negotiable, what we could chose and focus on was our new ways of developing embodied physical education. To support our thinking and development we drew back to Newell's (1986) theoretical framework when examining our next steps.

Materials and methods

Newell's (1986) theoretical framework examines how motors skills within physical education are influenced or acquired (see figure 1). As Teacher Educators we are used to using Newell's constraints model with the student teachers, to help them to understand the impact of their educational settings and learners they would be working with, therefore it felt an appropriate tool to reflective and use on ourselves. It was also a model that enabled common solution focused direction within our discussions together, it could have been so easy to focus on the struggles on as Jordan-Daus et al. (2021) highlighted. We therefore examined each type of constraint, through a reflective discursive and photographical approach and how this impacted on our own practice. All the constraints were interpreted and analysed both as the learner (student teachers) and as well as the teacher educator (us) as we experienced the constraints ourselves.
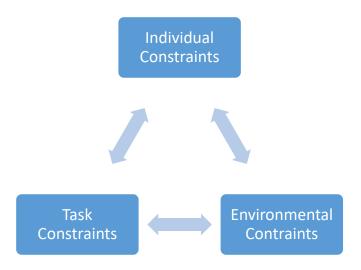
[Insert figure 1 here]

Figure 1. Newell's model of constraints.

Results and Discussion

Individual constraints

Individual constraints were considered as both the learner (student) and as us through the teacher educator constraints. Our three main individual constraints can be seen in figure 2. Due to the swift timescale of moving learning mediums, this demanded a huge amount of change for all individuals, and challenged personal and professional resilience and confidences. There was a disparity between facilities and access to suitable accessible technology to participate. Initially there was a lack of confidence and engagement within online delivery or suitable socially distanced outdoor face to face sessions including the numbers within the groups and then the suitable content that could be undertaken by all whether they were able to attend, through to those shielding. There was a need to rebuild previous connections to ensure that this touchless and lost existence did not occur, this was undertaken through team building and

building of learning communities. These learning communities were used to co create knowledge, to understand the constraints, and to build trust with each other again, almost humanising our interactive spaces. At times as Teacher Educators we described the process as almost like air traffic controllers directing rather than connecting, as we had to decide who goes into which break out group and when and what we are learning about. Yet as our experiences developed we realised that during a pandemic, a culture of care (Pearson, 2019) and the voice of care (Gilligan, 1982) were key to rebuilding our connections and sharing our values of relationships, responsibility and concern for others to ensure all could and would engage in their learning. We knew the value of connection, and needed to ensure our student felt comfortable in their learning for them to then find meaning for themselves. In Arendtian (1958) terms, thinking must include other people within the process and as teaching is a human activity, it must involve the whole person, linking emotions, values and life experiences (Rowland 2000), and this is what we did to overcome individual constraints.

Immediacy	• Staff and student capabilities • Positionality • Suitability
Accessibility	• Technology • Digital confidence • Learning and Teaching in PE
Connections	• Open • Safe and Caring • Interactive

Figure 2 – Individual constraints

Environmental constraints

Due to the changing nature the environmental constraints (see figure 3) were at times rapid, continuous, unstable and often challenging. All had to adapt, moving out of comfort zones and learning a new range of skills to be able to join in, plus also being then able to teach these new skills to ensure all could access the sessions. There was the assumption that staff had the skills, the interactive tools and teaching methods for online or blended learning!

[Insert figure 3 here]

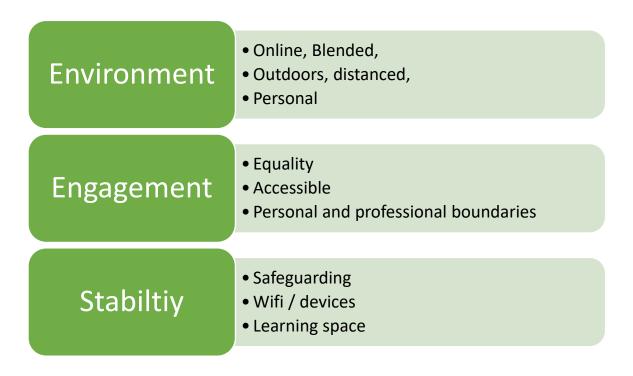| Environment	• Online, Blended, • Outdoors, distanced, • Personal
Engagement	• Equality • Accessible • Personal and professional boundaries
Stabiltiy	• Safeguarding • Wifi / devices • Learning space

Figure 3 – Environment constraints

Filiz and Konukman (2020) proposed that the distance education needs to involve students within the decision making process to enable them to still have an information rich learning environment, they suggested the need for challenges, collaboration and to be in contact with students in a variety of ways. Therefore we worked with the students to be partners in learning,

asking them how would they, like to learn PE. The students voiced their ideas and desires to still have practical activities intertwined within the new online virtual learning, this meant as Teacher Educators we needed to be flexible and responsive to their needs and the new environmental constraints. Practical activities then had to be made so they were all accessible within the home environments, where students may have very little space, may also have very little home equipment yet at the same time ensuring they were able to have deep PE subject knowledge, competence and confidence, all key Ofsted requirements to ensure are trainee teachers were ready to teach. We were able to explore and examine coordination, control, agility, balance, flexibility skills all key skills of the National Curriculum for physical education (DfE, 2013) through the use of socks, kitchen roll and toilet roll tubes, post it notes, biscuits and also socks and gloves were used to develop bouldering and climbing skills (see figure 4).
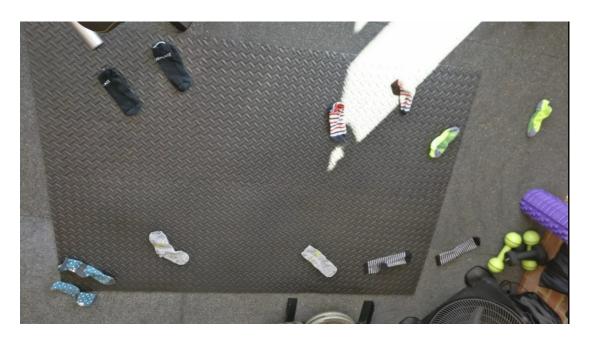
[Insert figure 4 here]

Figure 4 – Bouldering movement patterns through the use of socks

We also used the environmental affordances when the weather included snow, we examined speed, control, coordination, agility and balance gymnastics skills (figure 5) through the means of snow, sledges and technology. Through undertaking the intertwined practical activities and

support of technology and sharing of photographs through the Padlet app, we could as a group unpack the learning of physical education and how to then teach movement, just as we would within a face to face session, therefore supporting all to be successful.

[Insert figure 5 here]

Figure 5 – Analysing extension and tension skills within snowy environments.

In terms of the potential digital divide that such a move to provision of online education can also cause (Webster and D'Agostino, 2021). Filiz and Konukman's (2020) also agrees and reminds us that some students do not have a private study room for them to undertake live online lectures, or may not be able to turn microphones on from interactive chat facilities due to their home environments. The idea of sharing videos from students' bedrooms brought up similar responses from students as those found by Castelli and Sarvary (2021). We ensured students were included through teaching them how to use filters and background blurring to ensure they felt safe sharing their environments. There were however still students who due to

their home learning set up were not able to turn on web cameras, so many students relied on the typographical chat function to interact in their learning. It was vital for me to develop pause moments, often filled with songs and hums just like transition times within primary school. This allowed time for responses to come in via chat, and not to rush the thinking and typing process, to ensure that all students were able to be reflective no matter what means of learning they were using. The use of the chat feature as well as the breakout rooms, allowed for constant interaction during the sessions developing a community feel, as well as having space and time for group work. The key as Cavinato et al. (2021) recommended is to ensure that we provided prompts, clarifications and hints to the breakout groups to help support the learning processes. These varied emergent affordances, ensured social connectedness was maintained throughout the sessions, and allowed for personal accountability of learning (Cavinato et al., 2021).

Task constraints

The task and curriculum constraints we the key to our change of feeling like it was possible to ensure we could have embodied physical education no matter what learning medium we were using (see figure 6).

[Insert figure 6 here]

Choice	• Content, breadth, depth • Suitability, relevance
Autonomy	• Co-creation • Sharing of knowledge
Pedagogy	• Versatility • Relevance

Figure 6 – Task constraints

One of the key curriculum constraints was content, and the decisions that we needed to take as Teacher Educators to reduce the breadth that we would normally teach our student teachers, but to focus on depth of knowledge, to unpack and approach the learning through suitable, relevant accessible environments such as the park, home, garden, campus. We also focused on the co-creation and sharing of knowledge, through the use of one drive, chat box, Padlets, zoom rooms, as seen in figure 7. Students were interactively working online and also when they came to campus in small groups and then still worked with those online, this enabled voice and choice to occur. We also focused on a higher level of learning in terms of pedagogical content and developed directed tasks that supported learning and understanding of pedagogical strategies that could be used face to face (socially distanced) as well as online. We also examined and used greater opportunities that may not have been considered previously such as pogo jumping (see figure 7). We also developed much more a pre learning tasks, co-creation and sharing of

knowledge sessions and then follow up continued post session discussions and tasks to ensure depth of curriculum content was ensured.

Figure 7 – Three active learning strategies in action.

Conclusion

In conclusion, what we have shown within the paper is innovative ways to ensure that it is possible to teacher physical education within teacher education, to have an embodied and lived experiences, no matter what the learning beyond. Whether this be through face to face, hybrid, or totally virtually. The keys to success are ensuring all the stakeholders are invest so we can develop collective agency. We have learnt no matter what the learning medium is, the experiences need to continue to be student centred, include sense making activities, collaborative activities are all vital as well as in the online context the need to develop digital fluency as a whole. We acknowledge that our thinkpiece has allowed us to recognise that learning of physical education needs to be active and can be active through planning in a variety of emergent affordances, such as photography, video analysis and apps to increase social connectedness. It is these interactions and connections that allow us to draw on Palmer's

(1990) words that 'we and the world are co-created' (p.17) and together we can construct, reflect and critique our learning. This will ensure the next generation of physical education teachers are ready to head into school and teach.

References

NEED TO ADD

Figures

NEED TO ADD ON SEPARATE PAGES

Word count – 2468 words