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Practising collaboration in model implementation in physical education

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ABSTRACT

Background: Over the last two decades, teachers' use of models has been frequently highlighted as a possible future for physical education. Literature has also shown that collaborations between teachers and researchers can be effective in supporting teachers not only to successfully implement but also sustain their long-term use of models. Despite this evidence, the practice of collaboration itself has so far, at best, been an implicit focus for investigation and the ways in which collaborations are practised seem to vary.

Purpose: In this paper, we argue that there is a need to move beyond stating that collaborations work and understand more about the different ways collaborations between teachers and researchers might be practised. We do so by presenting three empirical illustrations which represent different collaborative practices and discuss the consequences these have for teachers' implementation of models.

Methods: The empirical illustrations draw on data from teacher interviews, recorded workshops and the first author's reflective research diary collected over a two-year collaborative project. Through a cyclical and iterative process of analysing the data we identified three ways in which the practice of collaboration was practised: 'the researcher knows best', 'basing learning on the needs of the teachers' and 'the end of the beginning'. To further our understanding and discuss the consequences of these practices, we used *practice architectures*, *models-as-specification versus models-as-prescription* and *fidelity to procedure versus fidelity to goals* as theoretical concepts.

Illustrations: The 'researcher knows best' illustration represents a collaboration in which the researcher believes they know best about what the teachers should learn and what they would benefit from most. Hence, the researcher provided knowledge about how and why pedagogical models could be implemented, without consulting the teachers. The second illustration, 'basing the learning on the needs of the teachers' investigates how the researcher tried to learn from their on-going experiences and adjust the way they approached the collaboration with the teachers, to increase the level of teacher autonomy. The third illustration, 'the end of the beginning' shows a collaboration in which the researcher deliberately took a more peripheral role. This allowed the teachers to decide both on what they needed to learn and how this could be achieved.

Conclusions: Although our theoretical concepts allowed us to

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problematize different aspects of all these practices, it is not our ambition to say that there is a right or wrong way of working together to enable teachers to implement models. Indeed, we suggest that to collaborate is something that needs to be continuously practised by both teachers and researchers to respond to the different needs at different times in the process of collaboration. In conclusion, we suggest that planning for collaborations that; (1) allow models to be considered as specifications for practices and (2) allow fidelity to be considered in relation to the overall purpose of the model, could serve as two guiding principles for future collaborations.

Introduction

Despite the prevalence of models in physical education (PE), concerns remain regarding the gap between the ‘talked-about’ impact models can have in improving the conditions for student learning and the impact they actually have. One explanation for the gap between the ‘hope and happening’ of models (Casey et al. 2021) centres on the challenges and problems teachers experience in implementing models in their local curricula. Studies have shown that learning to teach through different models is messy, requires hard work and a significant commitment of time, and it may even make teachers feel like beginning teachers again (see for example Barrett and Turner 2000; Bjørke and Mordal Moen 2020; Dyson 2002; Gubacs-Collins 2007). Due to these challenges, it would be easy to surmise that even if teachers choose to explore models, they often return to their former practices instead of sustaining their use of models beyond the initial units.

Concurrently, the literature is replete with examples of teachers who have successfully implemented and sustained their use of models. According to Casey’s (2014, 18) review of literature on teachers’ use of pedagogical models, long-term collaboration between teachers and university staff is ‘the biggest factor in engendering change’. Supporting evidence has also been reported in more recent studies (see Goodyear 2017; Bjørke, Standal, and Moen 2021), which highlight how support from external researchers over time enabled teachers to move beyond the initial challenges they experienced when changing their practice to include models. In fact, a number of studies have highlighted that with support from experienced researchers, teachers may be able to reflect upon and learn from their on-going experiences of implementing models which, over time, enables a more successful and sustained implementation of the chosen model with their students (Bjørke, Standal, and Moen 2021; Casey 2014; Goodyear 2017; Goodyear and Casey 2015).

Models are unquestionably shaping both the vocabulary and the practice of PE, but still the terminology used to describe models (whether instructional, curricular or pedagogical), and the use of models (i.e. single-model curriculum, multi-model curriculum, models-based practice) varies considerably (Casey and Kirk 2021). It is therefore necessary to note that the use of model or models in this paper refers to the use of a pedagogical model. Furthermore the ‘use of the term pedagogical highlights the interdependence and irreducibility of learning, teaching, subject matter and context’ (Haerens et al. 2011, 324). We also acknowledge that some opt to use other terms than model – such as ‘approaches’ (see for example Beni, Ní Chróinín, and Fletcher 2021) – to describe alternative forms of PE, and we believe this paper may also be relevant to them.

Teacher/Researcher collaboration

While collaborations between teachers and researchers have been shown to be a key enabler in the implementation of models in schools, the ways in which researchers seek to work with schools and teachers varies considerably and sometimes avoids collaboration completely in the drive for uniformity. For example, in investigating the Sports, Play, and Active Recreation for Kids [SPARK] model in the US, McKenzie et al. (2016) reported on teachers’ implementations of the model as

an evidence-based step-by-step instructional unit that includes everything from objectives to tasks and assessment. Indeed, McKenzie, Sallis, and Rosengard (2009, 119) suggest that ‘a goal of SPARK staff development was to consistently deliver a standardized implementation package’. In another study, which explored physical education teacher education students’ implementation of sport education, Curtner-Smith, Hastie, and Kinchin (2008) suggested that learning packages that had been developed by specialist faculty members (such as articles, books, lectures, handouts, observations of example lessons, and videos) were found to be effective when seeking to implement a full version of sport education.

Given the recent work of Casey and Kirk (2021) and Casey et al. (2021), which argue for a localized and malleable approach to model usage, centred on teacher agency and learning aspirations, we dispute the idea that a full version of any model exists. Consequently, we advocate a lighter, more equitable touch that positions the teacher as the leader of pedagogical change rather than advocating step-by-step or packaged development. Indeed, other studies have shown that establishing communities of practice in which the external researcher takes on a more consultancy role helps teachers to implement models (Bjørke, Standal, and Moen 2021; Goodyear and Casey 2015; Goodyear 2017). In these studies, emphasis was more on establishing discussions and negotiations between teacher(s) and the researcher about how the model could be implemented in the local context.

These examples show that the ways in which teachers and researchers practise collaboration cannot be considered collectively. The practice of collaboration is ongoing, and through interaction between teachers and researchers the practice changes. Regardless, collaboration between teachers and researchers has, at best, been implicitly mentioned in research. We use practice both here, and in the title, to represent the need to repeatedly engage in and refine collaboration. Parker et al.’s (2022) recent review of learning communities and professional development in PE, supports our assertion that researchers’ or teacher educators’ engagement in collaboration is something that warrants further investigations. In other words, although a plethora of research studies over four decades show that individual models work (see Harvey and Jarrett 2014; Hastie, de Ojeda, and Luquin 2011; Pozo, Grao-Cruces, and Pérez-Ordáz 2018 for reviews of literature) we know little about the collaborative practices that occur between teachers and researchers that help teachers’ use of models. If we, as a community of PE teachers and scholars, wish to better understand the potential impact of different forms of collaboration on the use of models, then we need to better understand the collaborative practices that occur. Hence, the purpose of this paper is to explicitly explore the practice of collaboration between teachers and researchers using three empirical illustrations drawn from data gathered across ‘Lars’s’ two-year project working together with primary school PE teachers. In doing so, we seek to identify different ways that collaborations between teachers and researchers are practised and discuss the consequences of these in enabling teachers to implement, in this case, a single model, although it could be applied to other models or indeed the use of multiple models.

Theoretical concepts

In this section, we introduce three theoretical concepts that helped us understand and discuss our empirical illustrations of the practice of collaboration. The first concept, *practice architectures* (Kemmis and Grootenboer 2008), allowed us to understand more of how the practice of collaboration between teachers and researchers is continuously shaped and re-shaped by what individuals think and say and how they act and how they relate to each other. The second concept, *models-as-specification versus models-as-prescription* (Casey and Kirk 2021; Stenhouse 1975) was helpful in exploring how different ways of collaborating have consequences for how models are being conceptualized as something between a framework that needs to be adjusted, or more as a recipe to be blueprinted. The final concept, *fidelity to procedure versus fidelity to goals* (McNeill et al. 2018) allowed us to explore how collaboration, to different degrees, supported teachers’ autonomy and

professional judgement when implementing a model into their local curricula. It is important to note at this time that while these concepts could be understood as dichotomies, we position these concepts as different positions on a continuum. As such, the practice of collaboration is not fixed but is, instead, something which teachers and researchers repeatedly engage in and refine over time.

Practice architectures

Establishing a collaboration between researchers and teachers to implement models in PE involves establishing a new practice. Kemmis and Grootenboer's (2008) work around practice architectures provides a useful concept through which to understand how the different expectations and beliefs teachers and researchers bring to a collaboration, influence how this practice emerges and develops. More precisely, Kemmis and Grootenboer (2008) argue that a particular practice is shaped by the practice architectures, that is, the sayings (what people think and say), doings (how people act) and relatings (the conditions of a practice, i.e. how people relate to each other and the environment). In elaborating on the relationship between practice architectures and practice, Kemmis et al. (2014, 31, original emphasis) hold that:

On our view of practices, (a) individual and collective *practice* shapes and is shaped by (b) what we will describe as *practice architectures*, so that (c) the *sayings*, *doings* and *relatings* characteristic of the practice hang together in *projects* that in turn shape and are shaped by (d) *practice traditions* that encapsulate the history of the happenings of the practice, allow it to be reproduced, and act as a kind of collective 'memory' of the practice.

Although the practice architectures do not fully determine the kinds of practices that take place – they delimit what kind of practices take place within a given context as the members of the practice (in our case teachers and researchers) hold certain cultural expectations for the sayings, doings, and relatings within that practice. In other words, in establishing a collaboration between teachers and researchers, individual members have different expectations regarding how the collaboration should look in terms of what the individual members say, do and how they relate.

Models-as-specification versus models-as-prescription

In addition to the different language surrounding models there are different views on what a model is, should and can be within the context of PE (see for example, Casey et al. 2021; Landi, Fitzpatrick, and McGlashan 2016). According to some, models should be regarded as something fixed, a noun, that can be copied verbatim from a blueprint by teachers in order to reach specific outcomes within the curriculum (see Metzler 2005). Within this perspective, models are seen as something that is 'designed to be used for an entire unit of instruction and includes all of the planning, design, implementation, and assessment functions for that unit' (Metzler 2005, 13). Others have suggested that models need to be understood more as guiding principles or a framework, that teachers modify and adjust to fit the needs of their students within a specific context (Casey and Kirk 2021; Casey et al. 2021).

Casey and Kirk (2021) conceptualized models and models-based practice through Stenhouse's (1975) work around the role of curriculum in teachers' practices. Stenhouse (1975) suggested that a curriculum, in our case a model, should be regarded as a specification for practice rather than a prescription of what a teacher should teach and what the students should learn. Applying Stenhouse's (1975) argument to the context of models implies that a model is never anything beyond a provisional set of ideas and that teachers need to employ their professional judgement to the adaptations of any given model to fit the sayings, doings, and relatings of their context. Key to Stenhouse's (1975) notion of 'curriculum-as-specification' is the need for teachers to experiment with different ways of implementing models and continuously learn from these experiences.

Fidelity to procedure versus fidelity to goals

Fidelity has been, and still is, a controversial concept related to implementing models in PE (see for example Hastie and Casey 2014; Landi, Fitzpatrick, and McGlashan 2016). This debate is not something unique to PE but is rather a more general challenge for teachers and researchers working to implement change in educational settings and is concerned with whether an intervention is delivered as intended, and whether the delivery led to the desired and expected outcomes. An interesting counter-perspective on fidelity has been proposed by McNeill et al. (2018). After studying fidelity within the context of science education, these scholars came up with the suggestion to distinguish between *fidelity to procedure* and *fidelity to goals*. While the former refers to teachers following the training they receive closely (for example a specific training package for a particular model that they then copy with their students), the latter refers to teachers doing something that might be different from the specifics of the training they received but still is consistent with the overarching goal of the intervention. In the context of models, this latter understanding might refer to a teacher implementing a model that is in line with the model's main idea, and perhaps its critical elements and learning aspirations, while simultaneously using their local knowledge when transferring these ideas into practice.

Fundamentally these three concepts deepen our discussion of the consequences of different ways of collaborating when implementing models. They also provide us with a number of critical concepts around which to explore the empirical illustrations provided later in the paper.

Methods

The purpose of this article is to present three empirical illustrations that have been developed through the dialogue between the first and second author. Empirical illustrations can be understood as re-presentations of actual situations which allow researchers to revisit the events, and then discuss what others might learn from what happened. Empirical illustrations have previously been used by other researchers within the context of PE, such as Goodyear, Casey, and Quennerstedt (2018) and Sargent and Casey (2021) to provide 'best examples through the transparency of [...] ongoing dialogue between the authors throughout the conceptualization and writing of this paper' (Goodyear, Casey, and Quennerstedt 2018, 7).

Positionality

Given both our subjectivity and selectivity in choosing what we considered to be the best examples to present (Goodyear, Casey, and Quennerstedt 2018), we must acknowledge and be reflexive about our own positions in the development of this paper. The empirical illustrations are drawn from data gathered through Lars's PhD project investigating two qualified PE teachers' pedagogical change through cooperative learning (CL) in Norway. The project used a participatory action research approach in which Lars worked closely with the teachers over a two-year period to explore whether CL could facilitate student learning in line with the Norwegian national curriculum (Norwegian Directorate for Education and Training 2015). The decision to explore CL was based on the teachers' wish to adopt a more student-centred approach to teaching PE. The two participating teachers, Erik and David, were working in 5th and 6th grade respectively. Lars was a qualified PE teacher who, after working for six years in a primary school, entered higher education in 2014. The second author has extensive experience working as a secondary school PE teacher and PE teacher educator and is an expert on both teachers' use of models in PE and practitioner research. All of these factors, and many more besides, had an impact on this study and the development and articulation of these of illustrations.

Data collection and analysis

The data used to form the illustrations were collected through interviews with the teachers before, during, right after and one year after the project, together with recorded workshops and Lars's reflective researcher diary. The analysis took place through several phases and these phases enabled us to develop the three empirical illustrations. The process was cyclical and iterative, and these phases need to be understood as a framework that was helpful to ensure a robust and rigorous process (Burke 2017).

Phase 1: Lars's involvement in the project

The first phase of analyses was conducted through Lars's close and sustained involvement over the two-year period. Although these on-going analyses were less systematic than his PhD analysis, they allowed him to become familiar with the collected data.

Phase 2: identifying and discussing preliminary illustrations

In the second phase, Lars began by organizing the data chronologically, and then read all the different data sources. After that, he re-read the data and began an initial process of open coding. This allowed him to reflect 'on the contents and nuances of [the] data and to begin taking ownership of them' (Saldaña 2013, 100). Following this open coding the authors met to discuss the relevance and significance of the codes identified considering the purpose of the paper. After sorting and grouping codes, we collectively developed a preliminary outline for three illustrations. At this point, the illustrations were labelled 1, 2 and 3.

Phase 3: developing the illustrations

After the discussion between the authors, Lars revisited the data to further develop the illustrations. He carefully explored the data to enrich his understanding of both the illustrations and the study's context. After re-writing the outlines for the three illustrations, the authors met again to discuss the developing ideas. That meeting concluded with a consideration of possible theoretical concepts that would further our understanding of the significance of these illustrations.

Phase 4: employing the theoretical concepts and finishing the writing

In the fourth phase, Lars applied the three theoretical concepts to the illustrations. Given the nature of these concepts, this process mirrored what Saldaña (2013, 115) characterizes as 'versus coding'. Specifically, Lars employed the theoretical concepts to understand how different concepts, for example *models as specifications versus models as prescriptions*, could help enrich our understanding of collaboration through the illustrations. After that, the two authors engaged in a final round of discussions on how the theoretical concepts could be further developed to enrich our understanding of the practice of collaboration through illustrations that we now titled: 'Researcher knows best', 'Basing learning on the needs of the teachers' and 'The end of the beginning'. Finally, our work through the iterative process of writing the paper served as the final analytical process.

Quality and ethics

The empirical illustrations portray three ways in which the practice of collaboration between teachers and a researcher might be conceptualized. Although we do not claim to tell THE story about how the practice of collaboration unfolds, as stories unfold differently in time and space, we believe our story will resonate with other researchers and practitioners working together to implement models in PE (Burke 2017).

The identification of our empirical illustrations was not based on traditional quality measures such as reliability and coherence. At the same time, other criteria can be used to judge the quality of the study. First, in positioning this study within the rapidly growing field of models in PE, we

address the criteria of worthiness of the topic (Burke 2017). Second, the credibility of the study is strengthened through Lars's two-year close engagement with these teachers. Finally, the on-going discussions between the two of us in writing this paper enabled a richer understanding of the significance of the illustrations, as well as strengthening the study's transparency (Burke 2017).

The project was approved by the Norwegian Centre for Research Data and followed the ethical guidelines provided by the Norwegian National Research Ethics Committees. All teachers signed a declaration of consent and were informed that they could withdraw from the project at any point, without any consequences.

Illustrations: the practice of collaboration between teachers and researchers

In this section, we present the three empirical illustrations. Each of the illustrations is outlined separately, followed by a discussion around the implications for the aspiration of collaboration between researchers and teachers in implementing models in PE. Throughout we use 'Lars' when referring to the first author, 'I' when referring to or quoting directly from Lars's gathered data, and 'we' when we refer to the voice of both authors in discussing the implications of the empirical illustrations. This is done to clearly demark the various voices that inform this paper.

Although this paper draws on illustrations identified from a collaboration exploring cooperative learning (CL), we believe the discussions have relevance beyond CL. We have therefore referred to the model, have removed details that require specific knowledge about CL, as well as providing, in brackets, some additional information needed to understand the conversations that took place. It is our hope, therefore, that anyone with an interest in pedagogical change will find this paper both useful and relevant.

The researcher knows best

This illustration is drawn from the first phase of the project, in particular from the first workshop in which Lars met the participating teachers to (a) discuss and think about the model from a theoretical perspective, and (b) plan how the model could be implemented in the first few lessons. The agenda for the workshop had been developed by Lars according to what he believed was useful, without involvement from the participating teachers. The following data excerpt is from Lars's reflective diary and highlights his thoughts following the meeting:

... the teachers seem sceptical. They expressed various concerns in leaving their role as the sage on the stage [...] One of the teachers even claimed that he saw challenges pile up. He was, for example worried about students with a need for vigorous physical activity, especially boys, needed to be given the opportunity to let some steam off, and questioned whether these students were ready for such a radical change.

In reflecting on what he saw as resistance and reluctance from the teachers, Lars noted that perhaps his approach, i.e. exploring the model theoretically and the five key elements [elements that teachers use when teaching through CL], was a little overwhelming (reflective diary). He also noted that he felt that he had to take charge of the meetings due to a fear of not getting enough progress (reflective diary). For example, Lars had presented his ideas and solutions on how the model could be implemented to make the most out of the time he had with the teachers. Looking back over his actions over the first year in the project, David felt that the first phase of the project led to a certain amount of stress:

David: You know, there were a lot of different activities that were supposed to be completed within one lesson. It was a warm-up, then [listing different ways of structuring a CL classroom] ... it was..

Lars: Yes, it was a lot ...

David: Especially when I had a class who needed a lot of time. I felt stressed at times, and that made some of my explanations and messages unclear. For example, when I divided the students into groups, and explained what we were supposed to do. (mid-interview)

Eric reported similar feelings and argued that although he was thankful for all the work Lars, in his own words ‘had to do in the beginning of the project’, it ‘also created less ownership and more uncertainty’ for the teachers (Eric, mid interview).

The ‘researcher knows best’ illustration portrays a collaboration in which the researcher believes he knows best about what the teachers should learn and what they would benefit from most. This resulted in him providing knowledge about how and why pedagogical models (in this case CL) could be implemented. At the same time, what we have labelled as ‘the researcher knows best’ approach was not particularly successful in terms of enabling the teachers to implement the model in a meaningful way. The lack of teacher autonomy and agency created what several other studies have shown; namely stress and the feeling of being uncomfortable in their own classrooms (Bjørke, Standal, and Moen 2021; Casey 2014; Goodyear and Casey 2015).

Establishing a collaboration between teachers and researchers should include a discussion about different expectations related to the sayings, doings and relating to the practise of collaboration (Kemmis and Grootenboer 2008). For Lars, the project was a part of his PhD study. As such it was a high-stake initiative which caused him to worry about any lack of progress. Consequently, ‘the researcher knows best’ approach was a tempting and efficient alternative to a potentially time-consuming discussion about practice architectures. At the same time, however, the teachers trusted that Lars knew best (given his expertise in the model) and agreed to participate because they believed his expertise would help them renew their pedagogical approach in PE. In other words, the practice of ‘the researcher knows best’ mirrors both the teachers’ and researcher’s expectations for the saying, doings and relating of the collaboration at the beginning of the project (Kemmis et al. 2014).

From a Stenhouse (1975) perspective the practice of ‘researcher knows best’ appears to align better with a view of models more towards the prescription end of the continuum than the specification. More specifically, the illustration reflects how models can be seen as something that can be developed by an external expert and then transferred to the classroom by the teachers. Within such practice architectures, teachers become receivers of externally created knowledge rather than autonomous professionals who are given elbowroom and autonomy to experiment with the content. Equally, this illustration errs more towards a fidelity to procedure approach rather than to goals and the main idea of the model, as Lars presented the model through specific solutions that later could be copied by the teachers (McNeill et al. 2018). Given this illustration, we believe an important consideration in planning for collaborations between teachers and researchers is to balance the need for external researchers to share their expertise at an early stage in the project. Furthermore, we feel that existing practice architectures should be considered and challenged to better enable teachers to experience autonomy and ownership in the change process.

Basing learning on the needs of teachers

‘Basing learning on the needs of the teachers’ focuses on how Lars tried to learn from his ongoing experiences and adjust the way in which he approached the collaboration. This illustration is representative of a period about six months later in the project, in and around the fourth workshop. Between the first and second illustration the teachers had time to use the model, see how it worked with their students, and share their experiences with Lars and each other through post-lesson teaching reflections and the third workshop.

The overall purpose for the fourth workshop was to prepare for the second unit, and more specifically, according to Lars’s reflective diary, to:

- (a) Discuss the purpose of Student Teams Assessment Divisions (STAD) [a way of structuring a CL classroom], and ensure that the teachers understood the structure and how it aligns with the five key principles of CL
- (b) Plan intervention period 2 using STAD and prepare for the second intervention period.

These objectives were developed in response to the teachers' experiences in the first unit. More precisely, the content of the fourth workshop was developed in response to the teachers' request to explore a different way of structuring their classrooms. They felt, following the challenges they experienced in the first unit using the other structures, that this way of facilitating group work might be more appropriate for their students as it required the sharing of different roles instead of learning a unique part of the content individually and then teaching it to the others (as happened in the first period) In the fourth workshop, Lars started with a short theoretical introduction to the STAD structure. This was followed by the teachers and Lars working collectively to translate these ideas into practice.

Reflecting on this workshop, Lars admitted that he had 'planned a little before we met, since [he was] worried that we [did] not get enough progress' to complete all of the content that had been planned for (reflective diary). Following the completion of the workshop, Lars noted that he was 'very happy' due to what he experienced as increased initiative and generally higher levels of participation from the teachers. In general, Lars was much more optimistic compared to the first unit. At the same time, he reminded himself that

[...] it's a long time until the next unit, so I hope that the teachers don't forget what we talked about. I made a two-page resource about STAD that I gave to them so that they could have something to read. (reflective diary)

The optimism expressed after the workshop later proved to be well-founded. Both teachers, as well as many of their students, experienced the model as, in the teachers' words, 'a meaningful pedagogical approach' in the second unit. At the same time, and despite Lars's hope, neither teacher had explored the model with their students beyond the lessons that had been developed collaboratively, not 'out of bad will or resistance' as Eric argued, but rather due to 'pressure on other tasks and time limitations' (mid-interview).

The 'basing learning on the needs of the teachers' illustration shows how Lars's close and sustained collaboration with Eric and David enabled him to adapt the way in which he approached the collaboration in terms of his sayings, doings, and relatings (Kemmis et al. 2014). Instead of making the mistake of assuming that he knew best, Lars allowed the teachers to come up with their own suggestions, based on their experiences of using the model in the first intervention period. This change in the relatings between Eric, David and Lars increased the level of teacher autonomy and feelings of ownership of the process and was found to be a key aspect of the success the teachers' experienced in the following intervention period.

At the same time, the illustration highlights another issue which is interesting in considering models through different positions on a continuum (Stenhouse 1975). More specifically, the following choice of words used in Lars's reflective diary to describe the objective for the workshop: 'Ensure that the teachers understand the structure and how STAD aligns with the five key principles'. These objectives can be seen as an expression of a concern prior to the workshop that Eric and David would not understand the structure correctly (i.e. according to the prescription), nor how this way of structuring the classroom offers a way of operationalizing the five key elements of CL. Furthermore, after experiencing the teachers showing their understanding of the STAD structure, Lars still hoped 'that the teachers do not forget what we talked about'. Put another way, Lars thought it was important that Eric and David (1) learned the structure 'correctly' and then, (2) were able to deliver the model with high levels of fidelity to the prescribed procedure (Hastie and Casey 2014; McNeill et al. 2018). Consequently, it seems pertinent to note that despite his awareness and intentions regarding local agency, there was still a right or wrong way of understanding and teaching through the model at this point of the study.

Although this reflects a view of models as more of a prescription than a specification for practice (Stenhouse 1975), this illustration should be understood considering the challenges highlighted in the first illustration. The failure in the first unit and the limited time that they had together meant Lars thought it important that Eric and David developed a common understanding of the structure, so that they could spend more time transferring these ideas into lessons that hopefully were successful. For Lars, supporting the teachers to finally experience success in their next unit, as indeed they did, was considered decisive for the project's (and consequently his PhD's) future. This highlights how practices of collaboration need to be understood by considering any external arrangements, such as finishing a PhD, that might influence and restrict what teachers and researchers say, do and how they relate to one another and a model.

The end of the beginning

'The end of the beginning' was chosen as a descriptor for the third illustration because our exploration of the data suggested that the collaboration changed into one in which teacher agency increased. This change allowed the teachers to become less consumers of Lars's external knowledge and more researchers of their own practices (Stenhouse 1975).

The illustration is positioned at the start of the second year of the project. The following extract highlights Lars's reflections after the first year had been completed, and his drive to change his role as facilitator to one that was less directive. Ultimately, he wanted to act more as an activator in the second year of the project, i.e. as someone who 'activates new learning possibilities by using a range of direct and indirect instructional behaviours to support and enhance students' learning' (Goodyear and Dudley 2015, 286).

I have to try not to be too prepared [...] I cannot allow myself to think too much in advance [...]. My objective is that the teachers take more and more responsibility, and that my own role gets more and more peripheral. This includes discussions around how [the model] should be implemented, what kind of content and objectives we emphasise, but also how the teacher defines their own role in these lessons.

One example of how the ambition to take a more peripheral role played out is found in the seventh workshop. This workshop was used for reflecting on and evaluating the third intervention period:

I had planned some questions, but I mainly wanted a dynamic discussion based on the teachers' wishes. I had asked the teachers in advance to think about whether it was something they would like to discuss [...] Among other things, how the students' feeling of being positively interdependent had develop over the course of the project as well as within the recent unit, and the teachers discussed what kind of actions they had done as teachers for this to happen [...] and David made some suggestions for how the group processing could be improved in the next unit.

This process of 'sitting together, discussing and reflecting about what went well and what did not work very well' (David, mid-interview) was something both teachers suggested that they valued and benefitted from. David also recognized the importance of 'having space for being creative and finding his own solutions when that was needed'. This reflexive process helped him to begin to adapt the model to his classes rather than solely employing the blueprint for the lessons that the teachers had collectively created with Lars. This approach was similarly adopted by Eric, and both teachers added that they had begun to experiment with the model in other school subjects and started sharing their knowledge about the model with their colleagues.

Although greater teacher agency and autonomy were key ambitions for the second year of the project, Lars simultaneously acknowledged that he should continue to offer 'perspectives to challenge their [the teachers] thinking'. For example, in planning the third intervention period (workshop 6), Lars suggested that David and Eric could start the planning by developing overall objectives for the unit before deciding on content (including how the model might be used to support student learning). This was in stark contrast to how the teachers previously planned PE lessons. This was characterized by first deciding on content for one lesson at a time and then finding suitable

objectives – if objectives were developed at all. Although David and Eric expressed that this was a brand-new way of approaching planning, and that the planning started a little slowly, the summary of the workshop showed that they, with support from Lars, managed to transfer this thinking into their planning back at school thus making the workshop, in the words of the teachers, ‘a success’:

We began by deciding on one motor, one cognitive and one social objective for the next unit. Then, we discussed the kind of content that could be relevant to use in order to work towards these objectives, and found out that orienteering, parkour, dance and acrobatics would be a good fit. [to work towards the overall objectives for the unit]

Importantly, while Larshad previously provided answers to be efficient, David and Eric were given sufficient time in later workshops to come up with their own answers regarding how different challenges might be resolved. Through such discussions, the teachers found that choosing ‘cooperation’ as an overall theme for the third unit would be better than picking different activities (i.e. floorball and athletics for units 1 and 2 respectively) as the organizing principle for the unit.

In contrast to the second illustration, in which Lars based the learning on the needs of the teachers but then decided on how this learning should be facilitated, ‘the end of the beginning’ illustration highlights how David and Eric had autonomy to shape the content of the project as they felt was best for this learning to happen. Importantly, the illustration shows how the teachers’ expectations of the sayings, doings and relatings of collaboration had developed from previously expecting Larshad to know best, to realizing that they needed to employ their professional judgment and adjust their delivery of the model in order to succeed (Kemmis and Grootenboer 2008).

The illustration also shows how discussions surrounding fidelity began to move more towards goals than to procedure (McNeill et al. 2018) as David and Eric began to consider pedagogical models as more dynamic and malleable. In other words, David and Eric felt they had the opportunity to re-shape the raw materials of the model to best suit their students (Casey et al. 2021), which allowed them to become more researchers of their own practices. With support from Lars, the teachers began investigating and discussing how their use of the model could be adjusted in future lessons by drawing on their practical experiences of using the model with their students (Stenhouse 1975).

Although the illustration shows the importance of local agency and autonomy, it also suggests that the researcher should not adopt a neutral role as long as they are involved. The researcher’s voice (i.e. their sayings), can be important, for example by challenging teachers thinking, as illustrated by the suggestion of creating overall objectives. In this way, the researcher might enable teachers to reflect on, and further enhance, their practices. We therefore support Casey and Kirk’s (2021) suggestion that there is a need for balancing teachers’ need for local agency and autonomy with external support and perspectives in implementing models as specifications.

The notion of ‘the end of the beginning’ also highlights the need to consider what happens after a collaboration comes to an end. Collaborations, as in our example, are typically established through specific funding such as a PhD or research project, which eventually comes to an end. However, the duration of a formal collaboration is hopefully only the beginning of teachers’ sustained use of models. Our illustration shows, at least anecdotally, that David and Eric had begun taking the ideas that had been developed through the project further, i.e. outside of and beyond the formal project. In other words, the emerging practice architectures of the collaboration might have enabled the teachers to continue to inquire into their practices after Larshad withdrawn (Stenhouse 1975).

Conclusion

The ambition of this paper has been to explicitly explore the practice of collaboration between teachers and researchers in implementing models in PE. Although collaboration has previously been identified as a key enabler for teachers to succeed in making models work locally, the practice of

collaboration itself, that is the ways in which collaborations are conceptualized and enacted, has only been an implicit focus of investigation.

Seen together, our three empirical illustrations help us to see how the practice architectures (Kemmis and Grootenboer 2008) of the collaboration between Lars, David and Eric developed from what we argue is a ‘the researcher knows best approach’, through ‘basing the learning on the needs of the teachers’ to becoming ‘the end of the beginning’. More precisely, while the first illustration portrays a collaboration in which the researcher thinks he knows what teachers should learn in order to be able to implement a model, the second shows increased teacher autonomy related to what the teachers themselves found useful to learn. Finally, the third illustration represents a collaboration in which the researcher deliberately took a more peripheral role allowing the teachers to decide both on what they needed to learn and how this could be achieved.

Although our theoretical concepts allowed us to problematize several issues related to the collaboration between teachers and researchers, and particularly the nature of the illustration of ‘the researcher knows best’, our ambition is not to say that there is a right or wrong way of establishing and enacting collaborations. Instead, it is important to acknowledge that working with different teachers, at different times, within various contexts requires different tools and approaches. What we do argue, however, is that different ways of collaborating have consequences for how models, or indeed all alternative approaches for PE, are talked about, learned and experienced. Our illustrations show how the changing practice architectures over the course of the project enabled different views of models and how questions surrounding fidelity were addressed. More precisely, the changing nature of the sayings, doings and relatings allowed the teachers to shift their thinking about the model more as specification than prescription (Stenhouse 1975) and adopt a fidelity-to goal rather than to procedure approach (McNeill et al. 2018). Given our view of models as dynamic and malleable in line with the work of Casey and Kirk (2021), we believe there is a need to move beyond the idea that ‘researcher knows best’ to allow teachers to become researchers of their own practices so that models become more of a dynamic specification for practice than a static prescription (Stenhouse 1975). That is not to say that there is one particular way that this could be achieved, and we acknowledge that ‘the researcher knows best’ might be appropriate at some point in a collaboration (especially given existing practice architectures around research and practice), but that there is a need to deliberately plan how the practice of collaboration might develop over the course of any collaboration. Given our previous discussions in this paper, we believe (a) in planning for collaborations in which the practice architectures allow models to seen more towards the specifications for practice than prescriptions end of the continuum (Stenhouse 1975) and (b) that fidelity should be considered more in relation to the main idea of each model rather than to procedures or blueprints (McNeill et al. 2018). These, for us, serve as two guiding principles in the practice of collaboration. For others, the practice of collaboration may begin and evolve somewhere else on the continuum. We also acknowledge the need for these plans to be flexible so that the ways in which practice architectures develop can inform the next phases of a collaboration.

As our title suggests, our discussions in writing this paper lead us to acknowledge that collaboration is something that needs to be practised. In other words, both researchers and teachers need to practice what they say, do and how they relate (Kemmis and Grootenboer 2008) to enable meaningful implementation of one or several models. We would therefore, as a final remark, encourage the field to continue to research how teachers and researchers might practise collaborations in ways that help narrow the gap between hope and happening (Casey et al. 2021) in implementing models in PE.

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