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Svendsen, Annemari Munk

Published in:
Sport, Education and Society

DOI:
10.1080/13573322.2019.1583641

Publication date:
2020

Document version
Accepted manuscript

Citation for published version (APA):

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A mountain too high to climb? An exploratory study of perceived barriers to mobilisation of research literature into Physical Education Teacher Education experienced by a group of Danish PE teacher educators

Annemari Munk Svendsen

Department of Sport Science and Clinical Biomechanics, University of Southern Denmark, Campusvej 55, 5230 Odense, Denmark

Phone: +45 21144785

Email: amsvendsen@health.sdu.dk
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Abstract:
International research emphasises that Physical Education Teacher Education (PETE) has a key role to play in initiating and processing changes in Physical Education (PE). However, several researchers also find that it is a significant challenge for PETE to contest ideological approaches regarding PE practices among PE student teachers. Stronger relationships between research and educational practice and more deliberate mobilisation of research into teacher education may help address such educational issues. The main agents in that regard are teacher educators who are supposed to have the competencies to mobilise research literature into PETE. However, in Denmark, only 10% of Danish teacher educators hold a research-based PhD. The main aim of this article is to make the first steps towards more knowledge in this area by presenting an exploratory study of perceived barriers to mobilising research literature into PETE as experienced by a group of Danish PE teacher educators. The paper is based on empirical data generated through a course developed to qualify PE teacher educators’ competencies in the use of research literature: papers, discussion-notes and interviews. Four main categories were generated: (1) ‘We’re competing on time’, (2) ‘A separate approach’, (3) ‘It has to add value’ and (4) ‘Hard to make it that academic’. The discussion addresses some general focus points for supporting the application of research in teacher education and suggest directions for future research.
Keywords: Physical Education Teacher Education; Research-based teacher education; PE Teacher educators; Research mobilisation; Pedagogic Device

Introduction

Physical Education (PE) has been identified as a school subject dominated by sports-focused teaching practices (e.g. Harvey & Donnovan, 2013; Kirk, 2010; Pill, Penney & Swabey, 2012), lack of critical scrutiny towards, for example, the teaching of health issues (e.g. Fitzpatrick & Russel, 2013; Gard & Pluim, 2017; Svendsen, 2012) and low academic status (e.g. Richards, Gaudreault & Starck, 2018). International research emphasizes that Physical Education Teacher Education (PETE) has a key role to play in initiating and processing changes in PE (Herold & Waring, 2015; Pill et al., 2012). However, several researchers also find that it is a significant challenge for PETE to contest ideological approaches regarding PE practices among PE student teachers (Backman, 2008; Hayes, Capel, Katene & Cook, 2008; Mordal-Moen & Green, 2012, Tinning, 2010; Vellija, Capel, Kartene & Hayes, 2009). Mordal-Moen and Green (2012) suggest that this is partly because PETE reproduces conservative ideologies and practices in PETE that student teachers are habitually predisposed towards. Stronger relationships between research and educational practice may help address such educational issues (Cain, Wieser & Livingston, 2016). To educate PE student teachers to become capable of using and critically discussing new and relevant research literature within the field may as such be considered a key element in PETE. However, while a few studies have been obtained with research quality in PETE (e.g. O’Sullivan, 2015; Stylinau, Enright & Hogan, 2017; van der Mars, 2011) or the research lives of PE teacher educators (Casey & Fletcher, 2017; McEvory, MacPhil & Heikinaro-Johansson, 2015; 2017; Tannehill, Parker, Tindall, Moody &
there are, to my knowledge, no studies that specifically investigate how PE teacher educators’ perceive research mobilisation into PETE. The main purpose of this paper is in that regard to make the first steps towards more knowledge in this area by presenting an exploratory study which, based on Basil Bernstein’s notion of the pedagogic device (Bernstein, 1990; 2000), investigates *perceived barriers to mobilising research literature into PETE as experienced by a group of Danish PE teacher educators*. It is important to research this phenomenon because PE teacher educators are the main agents in the mobilisation of research into PETE. This means that an investigation of barriers among PE teacher educators towards the use of research literature is central to promoting the mobilisation of research into PETE.

The study takes its starting point in the international focus on research-based teacher education. The term ‘research-based teacher education’ has been used to describe a specific way of organising teacher education, where the aim is to educate teachers to be competent, thoughtful, reflective and innovative practitioners (Krokfors et al., 2011). A literature review shows that there are three main characteristics of research-based teacher education: (i) pre-service teachers obtain in-depth knowledge of current research in their field and they develop competencies to read and use scientific literature (Reis-Jorge, 2017; Munthe & Rogne, 2015; Afdal & Nerland, 2014), (ii) pre-service teachers are qualified to base their pedagogical decisions on rational and up-to-date arguments and their practice is informed and substantiated by research (Byman et al., 2009; Cain, Wieser & Livingstone, 2016; Toom et al., 2010), and finally (iii) pre-service teachers develop an inquiring approach towards teaching and use basic research skills in their daily practices in school (Aspfors & Eklund, 2017; Byman et al., 2009; Krokfors et al., 2011; Toom et
It has been demonstrated especially in Finland that research-based teacher education programs have an impact on student teachers’ professional decisions and their use of professional language (Afdal & Nerland, 2014; Toom et al., 2010;), encourage student teachers to become innovative, independent and professional teachers (Aspfors & Eklund, 2017; Byman et al., 2009; Niemi, 2011), and apparently lead to better results among school children (Krokfors et al., 2011). In relation to this, studies have looked into the challenges that teacher educators face in carrying out research themselves. These studies suggest that teacher educators find it difficult to identify themselves as researchers and to develop an integrated professional profile as teachers and researchers (Czerniawski, Guberman & MacPhail, 2016; MacPhail, et al., 2018; Tack & Vanderlinde, 2015). Furthermore, they conclude that lack of skills, time and organisational support seems to obstruct the research endeavours of teacher educators (e.g. Czerniawski et al., 2016; McEvoy, Mac Phil & Heikinaro-Johansson, 2017; Tack & Vanderlinde, 2015; Willemse & Boei, 2012), and Vanassche & Keltcherman (2016) conclude that teacher educators feel that their primarily responsible and priority is their teaching.

In Denmark teacher education is one of a number of programmes designed specifically for a profession and brought together at University Colleges. The Danish University Colleges are not set up to be research institutions (EVA, 2017) but can better be compared to what is known as ‘universities of applied science’ in other European countries (see e.g. Tack & Vanderlinde, 2015; Vanassche & Keltcherman, 2016). According to the law covering employment at University Colleges in Denmark, teacher educators are not required to have a PhD. However, they are expected to engage with research and take part in research and experimental
development-projects\textsuperscript{1}. These projects may take many forms (EVA, 2017) and, in contrast to university employees, when engaged in research they are not necessarily required to attend conferences, for example, or publish in academic and international journals. A statement from 2015 on the homepage of the Danish University Colleges (danskeprofessionshojskoler.dk) suggests, that only 10\% of Danish teacher educators hold a research-based PhD. Teacher educators, then, have little or no experience with the role as researchers, and often need to acquire their own research skills after taking on the position of teacher educator. Nevertheless, in 2013, following the European agenda for professionalizing teaching in all countries within the European Union (European Commission 2010; 2013), a new ministerial order for the Danish Teacher Education Programme emphasised that the University Colleges should create an academically strong teacher education programme, which should more consciously integrate research – and, by extension, research literature - into the curriculum. A recent evaluation of the adjusted teacher education programme finds that textbooks and Danish literature take up a relatively large proportion of the literature compared to research and international literature (Danish Agency for Science and Higher Education, 2018). Also, previous studies on the knowledge base used in Danish PETE suggest that, by the time of the implementation of the new policy, Danish PETE-educators used textbooks and similar types of educational texts rather than research papers (Svendsen & Svendsen, 2014). The 2013 requirements have, therefore, introduced a new challenge for PE teacher educators in Denmark, who, compared to teacher educators in e.g. the US, Australia and New Zealand (van der Mars, 2011; Stylinau et al., 2017), are in the early stages of their transition to applying

\textsuperscript{1} The definition is based on the Frascati Manual from 2015.
research in teacher education. In Denmark, these new demands resulted in one of the Danish University Colleges offering a one-year course designed to qualify PE teacher educators to use research literature. This paper is based on a variety of data collected during this course. Bernstein’s concept of the pedagogic device is introduced to conceptually clarify different fields within the educational system and to identify major barriers in the mobilisation of research between the fields. The discussion addresses some general focus points in order to mobilise research more deliberately into PETE and suggests how this topic may be further explored in subsequent work.

**Danish teacher education and PETE**

There are eight University Colleges in Denmark that offer 15 teacher education programmes. PETE amounts to 30 ECTS\(^2\) and comprises one out of three main subjects in a 240-ECTS teacher-training programme. Graduate students are qualified to become teachers at primary and lower secondary schools. The main aims and objectives of the programmes are formulated in a national curriculum (Svendsen & Svendsen, 2014). However, teacher educators plan the specific content and select the literature for the course themselves. To support the choice of texts, teacher educators have access to a ‘national literature list’ for each main subject. The literature list for PETE (from 2015) contains 96 suggested texts. Of these 14 may be defined as research literature (for a definition, see theoretical approach).

Only four main reports have been carried out on the way research and research-based elements have been implemented in Danish teacher education since the reform (Andersen, Wiskerchen & Honoré, 2017, EVA, 2017; 2018, Lund &

\(^2\) ECTS means European Credit Transfer and Accumulation System. 60 ECTS equates to a full year of study.
Jensen, 2017). These reports suggest among other things that there is inadequate use of research literature and a lack of ‘research culture’ in teacher education (EVA, 2018), and that University Colleges would do well to support initiatives in which students are taught methods and research processes relevant for their future practical profession (EVA, 201). There may be some value in these recommendations, but they may also ignore the challenge of research being done that is seen as relevant to the practices of teachers and teacher educators.

The pedagogic device and the mobilisation of research

Basil Bernstein’s work (1990; 2000) is mainly occupied with the way specific rules regulate the legitimation and construction of knowledge in educational settings. In this paper the framework is used first and foremost used to identify different empirical fields within the educational system and define ‘research literature’ as a concept. Additionally, the theory allows for an analysis of the general principles which underlie the mobilisation and transformation of research between the educational fields.

Bernstein’s theory of the pedagogic device proposes a model consisting of distributive, recontextualizing and evaluative rules, and of the fields they control. These rules are ‘hierarchically related, in the sense that the recontextualising rules are derived from the distributive rules, and evaluative rules are derived from the recontextualising rules’ (Bernstein 2000, p. 28). The distributive rules regulate the field of production of discourse (31), that is, the intellectual field of the educational system, e.g. universities (or in this case research centres at the University Colleges), which produces knowledge. The rules of recontextualization regulate the field of recontextualization, where knowledge from the field of production is selected,
transformed and organised, e.g. in textbooks, digital texts, Open Education Resources and curriculum. This process of transformation is, according to Bernstein, related to the official recontextualization field (ORF) on the one hand (educational departments, ministries and other agents of the state) and on the other hand the pedagogic recontextualization field (PRF) (educational researchers, teachers, teacher educators and specialised journals of education) (Bernstein, 1990). Finally, the rules of evaluation regulate the field of reproduction, that is the practice at the class-room level (Bernstein, 2000, p. 115). Here teachers, as teaching experts, bring the knowledge produced into play (Tinning, 2010). It should be added, that in today’s educational practices teachers should constantly implement new knowledge and develop, create and challenge current practices (Toom et al., 2008). Furthermore, a variety of new agents and digital media exert their influence on the construction of knowledge (Svendsen & Svendsen, 2014). These issues challenge the hierarchical logic in Bernstein’s model, but they also make the discussion about research mobilisation even more relevant in order for teachers to base their pedagogical decisions on up-to-date arguments.

In this paper, research literature is defined, on the basis of Bernstein’s theory, as texts that are produced in the field of production of discourse by researchers and in that regard as texts that systematically report empirical or theoretical studies (for example an article published in a scientific journal or reports, anthologies or science forums). These stand in contrast to texts produced in the field of recontextualisation - and thus by agents embedded within the educational system and/or with reference to official curricular goals, for example textbooks or popular articles (Bernstein, 1990; Svendsen & Svendsen, 2014). Finally, research mobilisation refers in this paper to the process by which research is transferred from the field of production of
discourse to the field of recontextualization (Cain et al., 2016), in this case PETE. The new obligations to integrate research more deliberately in Danish PETE mean that PE teacher educators posit a new and central role in this selective and transformative process (Devis-Devis, Molina-Alventosa, Peiro-Velert & Kirk, 2011).

**Methodology**

To make an in-depth analysis of the perceived barriers to integrating research literature among Danish PE teacher educators, this paper presents an exploratory study of a group of PE teacher educators participating in a one-year course offered by one of the Danish University Colleges. The course was designed to strengthen the teacher educators’ abilities to use research literature in their PETE programmes. The course comprised four meetings during the year, and in between these meetings the participants were given different tasks. These tasks are described as part of the data collection below. No ECTS points were given for the course, but the teacher educators were allocated working hours for their participation. Ten PE teacher educators participated in the course (out of 13 PE teacher educators in this University College). There were five men and five women. Two were very new as PE teacher educators and the rest were teachers who had been training PE student teachers for years. None of them holds a PhD. All of the participants have participated in developmental projects or smaller research projects.

The course was run by a PE teacher educator who is presently a PhD student and the head of a research unit at the University College. The author was invited as a researcher to support the development of the course and discuss the use of research literature in PETE with the participants at the first meeting. During this first meeting the author reflected that there were some fundamental barriers towards this task and
was allowed to follow the rest of the course and explore the main reflections and struggles of the participants during the course.

**Data collection**

In order to get a solid foundation for exploring PE teacher educators’ barriers towards the mobilisation of research into PETE, different methods have been incorporated. Data consisted of six papers from the participants, detailed notes from the four meetings during the course and three follow-up Skype interviews. These different empirical starting points will be elaborated below.

*Papers:* As part of the course, the participants were asked to apply two research articles (selected by the organizing group) to their practice in their classes and to write a short paper (1-2 pages) about how they conducted this task. In the paper they were to (1) account for the purpose of the classes where they used the articles, (2) present how they applied each article in their practice, (3) reflect on the pros and cons of using them. Six papers were returned, anonymized (P1-6) and included in this study.

*Discussion notes:* As a next step, the organizing group chose ten research articles for the participants and asked them to select one or two articles that they would find it fruitful to integrate in PETE. They were asked to verbally reflect upon: (1) why they chose this article, (2) when the text could be useful, and finally (3) how it could be used. Notes from the meeting where these issues were discussed were included in this study together with notes from the other three meetings.

*Interviews:* Three follow-up SKYPE interviews were conducted with volunteers from the group. The interviews were individual and semi-structured (Smith & Sparkes, 2016). There were three main questions for the interviews: (1) Could you
elaborate on the process of integrating research literature in the classroom? (2) What where the perceived benefits and barriers in relation to this process? (3) Are there any issues necessary to facilitate or consolidate this further in the future? This allowed for an elaboration of aspects mentioned at the meetings and to get fuller information about their considerations. All interviews were anonymized (I1, I2, I3), transcribed and included in the study. As an exploratory study the purpose has not been to generalise but to increase the understanding of this area, identify problems and suggest new research questions. However, the use of multiple empirical sources enables a more solid, trustworthy and comprehensive approach to better understand the problem area (Lundvall & Meckbach, 2010).

Data analysis
All data were transcribed and read several times. They were analysed using a qualitative approach, where dominant themes were organised and grouped using a thematic analysis based on the six-phase model provided by Braun, Clarke & Weate (2016). First, a somewhat open coding of data, where interesting elements of the data were ‘tagged’ was conducted (ibid.). Afterwards, the codes were clustered into patterns and worked upon in order to address the research question (ibid.). As far as possible the participants’ own words were used as codes and categories. Four main categories were actively generated through an intensive analysis: ‘We’re competing on time’, ‘A separate approach’, ‘It has to add value’ and ‘Hard to make it that academic’. The categories were given a subtitle to clarify the main content of the category. In the presentation of the results there are mainly quotes from the interviews. However, the papers and the discussion notes have been equally analysed in the process and constitute important backgrounds and empirical basis for the four
Results:

We’re competing on time: lack of time for the task

The interviews and the debates on the meetings indicated that PE teacher educators worked hard to integrate the suggested articles in their classes. When they described how they had used the articles it was clear that they found the integration of research texts relevant and to some degree fruitful, but also that it was a very demanding new task. In particular, they repeatedly stated both in the interviews and during the meetings that they needed more time within their work hours to devote to the task. As one participant stated: ‘It is not that it isn’t relevant, but we’re competing on time’ (I2). The issue of time seemed to be especially related to the new process of ‘stepping in’ to the field of production of discourse and to searching, selecting and critically reading research literature. At the meetings, several of the participants stated that it was difficult to find sufficient time to search for literature and to keep up with the latest research in the area. One participant, describing how she felt when she was about to read the articles for the course, commented: ‘10 pages of research literature…but, gosh! that is a mountain too high to climb in my everyday life at least’ (I1).

However, the concerns of PE teacher educators were also related to the process of translating and recontextualising the texts into teacher education. For example, one of the respondents explained:

I think we have got a mutual understanding that one cannot just read a lot of articles and make …make …what is it called
…lesson plans and exercises for them. Really, we didn’t …or at least I didn’t have the time for that (I1).

PE teacher educators also reported that they felt compelled to prioritize acute educational tasks instead of spending time on reading and recontextualising research literature as illustrated in this quote:

…the area is quite important…because we want to be upbeat and to develop. But I remember exactly that period when …I did not have time to read them [i.e. the articles suggested by the organising group] …and I printed them … and they just lay there looking at me every day (laughing) but were always put aside because the primary thing is the teaching of the students (I1).

In general, it was clear that the mobilisation of research was experienced to some degree as (yet) another new demanding task to complete in an already extremely crowded working life. As one participant stated: ‘I cannot…all the time it is new, new, new and I am supposed to adapt and design and I do not have enough time’ (I2). In that regard, the daily planning and completion of teaching was repeatedly described as ‘the primary task’. Thus, even though teacher educators’ responses in general showed motivation and interest in mobilising research literature into PETE, this was clearly experienced as something additional to the daily activities and sometimes as an insurmountable task which was deprioritised. Implicitly, therefore, they were in some way suggesting that the engagement with research literature could
not really help them in the ‘primary task’ of teaching. In accordance with other researchers (e.g. McEvoy et al., 2017), this suggests that time is an important factor for PE teacher educators in their involvement with research, but it also indicate that their conceptualisation about research may be a barrier. In this context this is clearly also related to the experienced lack of anchoring in the field of production of discourse, which will be explored in the following.

**A separate approach: lack of proximity to field of production of discourse**

As suggested above, PE teacher educators’ struggle to prioritise research may be related to their fundamental idea about research. One PE teacher educator described how in her experience research constituted,

…a separate approach to things than to your teaching and practice in your everyday life. So…there are the practical things in daily life and…you have to prepare for the next lesson and you are in a process with the students which you have to relate to all the time. While, when you do research…well, then you know that you have these ten articles that you have to read…and you relate more…what can I say…maybe more directly to that (I2).

PE teacher educators’ utterances indicated in general that they experienced the world of research and the world of teaching as two separate cultures with different rationales (an issue also suggested in Elstad 2010 and EVA, 2017). As an extension of this, they expressed a clear cultural identity rooted in teaching and the procedural thinking related to that. There seemed to be a tendency among the PE teacher
educators to prefer texts produced, known and accepted in the field of recontextualisation. For example, one teacher educator explains: “Well, you are socialised into a culture that says: “Here in our field, we use these texts”” (I3). Another comments:

I am so indebted to my colleagues and we are very…it is very useful when you hand over something…I mean, I have taken over this job from someone else and I still use her texts and develop my own on the basis of hers (I2).

Thus, it seemed that there was a strong ‘sharing culture’ (Afdal & Nerland, 2014, p. 289) among the PE teacher educators. This is positive since it promotes dialogue and sharing of literature. However, in the words of Bernstein, it also indicates a strong impact from the pedagogic recontextualising field in PETE, leading to significant autonomy in the programme (Bernstein, 2000) which may involve a strong cultural inertia in relation to introducing and using texts from the field of production of discourse (as also suggested by Svendsen & Svendsen, 2014). This finding should be seen in the light of the PE teacher educators’ employment status, since most of them are not allocated time for doing their own research - and so lack proximity to the field of production of discourse. The latter was a theme that was also conspicuous in the interviews, as in this quote:

You might be lucky to be in a teaching group with someone who is also located in a research centre and who in that way has…who is allocated time to search for new articles within their field (I3).
The proximity to the field of production of discourse is here described as more or less coincidental, while the quotation also underlines how PE teacher educators conceptualise research centres as worlds that are separate from their everyday practice. In that regard, participants in general found it fruitful when agents from universities or research centres selected relevant texts and made them available. For example, one participant states that: ‘To me it has been so great to be part of this course because then someone has lined up the texts and asked me to read them. And then I will read them’ (I3). However, even if the texts are selected and ‘set’, there still seem to be barriers for implementation. For example, none of the participants reported that they used the national literature list systematically, and not all of the participants had prepared for the course. This finding consolidates the notion that PE teacher educators as a starting point are socially and culturally embedded in the field of recontextualisation and so lack proximity and attachment to the field of production of discourse. As also suggested by e.g. Tack & Vanderlinde (2015), among others, teacher educators do not identify themselves as researchers belonging to the field of recontextualization and there is clearly a felt distance between the demands on teacher educators on one hand to engage in research literature and on the other to conduct teaching.

*It has to add value: lack of relevance of research for teacher education*

Teacher educators in general portrayed practical experiences as the main source of professional development among PE student teachers. Research was thought of as an add-on or even as irrelevant for the PE student teachers’ future practice as illustrated in this quote:
So we may talk about motivational theory on a high level […] or research about vulnerable children or insecure children in PE and the like. But what they [the student teachers] are concerned with and what they are part of in their daily life is more like ‘but listen, three pupils are sitting out there and I cannot make them participate and the teachers have…they have given up on them’ or ‘there are not enough balls for everyone’ (I3).

In this quotation, research is conceptualised as something that takes place on ‘a higher level’, and participants were in general concerned with how (and why) the students should learn to read and use difficult research texts, when they were clearly busy just coping with concrete challenging situations such as, for example, ‘the lack of balls’. This also manifested itself in the PE teacher educators’ strategies for bridging the distance between the field of production of discourse and the field of evaluation. Here, without exception, they repeatedly asked the PE student teachers to connect the use of the texts to practical experiences (e.g. P1, P3, I2, I3). A related finding was that teacher educators clearly found the PETE curriculum extremely compressed and felt that there was insufficient time for reaching the goals of the course. One of them, for example, explain how:

…we continuously cut down the time allocated, and that means that, when we take into account that they are supposed to reach the same educational goals in the different modules, then it is more and more snappy…and I think that this [research] is the
cream we leave to one side and we say, “this is fundamental. You need to know what it is like to ‘be on the floor with the kids’” (I3).

In this quotation, the teacher educator expresses how she finds it necessary in her daily teaching to prioritize what she terms the ‘fundamental’ elements of PETE, such as ‘being on the floor with the kids’. Research is metaphorically described as ‘the cream’, which is left aside or added dependent on the time available. By the same token, participants explained at the meetings that they thought it was difficult to find research literature that was relevant and/or which reported research in a useful way that added value to the student teachers’ future practice, and in the interviews one participant explicitly stated that: ‘we need to find out how this is presented in a form that adds value […] that we get something the students may understand and use’ (I2). In that respect they asked for more ‘applied’ (Healey, 2005) and recontextualised research papers. Clearly, teacher educators seemed to find the distance between research and the field of evaluation extremely wide and difficult to overcome, and research literature was often considered too irrelevant and remote from the complex cultural and social identity of teacher education as an applied subject and more specifically PE as a bodily, practical subject in the field of evaluation. This issue addresses an ongoing and pervasive critique of the types of research that is conducted and of the ways it is made available to the end users in teacher education (Healey, 2005; Nelson & Campbell, 2017; Wieser, 2016). As suggested earlier, this also challenges the hierarchical logic in Bernsteins model and suggests a broader and more fluid concept of research.
Hard to make it that academic: lack of relevant skills among students

Finally - and closely related to the former theme - the participants experienced severe barriers related to the PE student teachers, who they found often lacked the skills necessary to read research literature. The skills they lacked related to language, interests and academic level. Language as a barrier was mentioned several times in the interviews, at the meetings and in the papers. One participant stated, ‘In my estimation the students do not have the best skills in reading English’ (P3). Another suggested that also the academic level and profile of the PE student teachers might be an issue:

I can conclude something else and that is that we have…several students within PETE who have difficulties…who in general have difficulties reading and writing too…but who choose a profile more related to natural science with Maths and PETE…and you might be an excellent teacher within these areas without being the best person in the world at reading and writing (I3).

This quotation exemplifies a finding related to the former one, namely the common perception among PE teacher educators that the skills related to academic reading and writing are not (necessarily) the most important ones to qualify the PE students’ future work as teachers in PE. This brings home the clear distinction that is felt among teacher educators and students alike between research and teaching, and also presents a real stereotype around PE student teachers as not being academic. PE teacher educators suggest that research is only fruitful for a small amount of PE student teachers and that
this stands in contrasts to the with that is required in the education. This is for example described by a participant in this quote:

Some of our students will pursue this but…as a rule …[…] we need to embrace everybody here […] It is hard to make it that academic and to expect the students to read this as preparation for the teaching. It really is (I1).

This provided another argument among PE teacher educators for using texts or teaching materials that were recontextualised or produced in the field of recontextualization. One of them suggested that: ‘they [texts] should not be long papers in English… […] I really believe most in the adapted text’ (I2). It seems, then, that PE teacher educators experienced a severe barrier in the lack of relevant skills (and motivation) of the students to read texts coming directly from the field of production of discourse. But more importantly, they were worried about whether it was possible or relevant for all students to use research in their practical work as PE teachers. As proposed earlier, this may also indicate that in this study the teacher educators perceive their own ability to make research literature relevant to student teachers and their practice in the field of evaluation as a significant barrier.

**Discussion**

According to Cain et al (2016) knowledge mobilisation is a priority for educational policy in order to inform and qualify teaching practices. To mobilise research literature into
PETE may play a key role in initiating and processing changes in Physical Education (PE) by challenging ideological approaches regarding PE and PE practices among PE student teachers. If we want to mobilise more research into PETE it is extremely important to consider the voice of PE teacher educators, since they are critical agents in the mobilisation of research between the different fields in the educational area. In that regard this study points to three focus points in order to mobilise research more deliberately into PETE.

Firstly, the analysis shows that PE teacher educators in this study metaphorically conceptualise research as something ‘out there’, ‘on a higher level’ or as ‘the cream’, meaning that research is conceptualised as additional to, detached from or even irrelevant for practice. This ‘divided nature’ between research and teaching is well-known in other studies on teacher education (Cheng, Cheng, & Tang, 2010; Elstad, 2010; McGarr, O’Grady, & Guilfoyle, 2017; Murray et al., 2009), and as mentioned in the introduction attention has been drawn to the severe demands of balancing the requirements of being close to the field of evaluation and at the same time adapting to the requirements of being research-based. Clearly, this study emphasises that it is a severe challenge for the mobilisation of research into PETE if PE teacher educators are not part of the field of production of discourse themselves. Studies within other fields suggest that this divided nature might be addressed if the departments support academic staffs’ proximity to the field of production of discourse by giving them the opportunity to attend conferences, attend courses of further education and professional development, to collaborate with others on research questions and/or to participate in journal clubs (McEvoy et al., 2017; Tack & Vanderlinde, 2015; Zubrick, Reid & Rossiter, 2001). However, it is interesting to notice that only limited data in this study suggests that the participants saw clear perspectives for qualifying PE-practices through the use of research, meaning that the
motivation for taking part in such activities may be low. To follow Sjøl (2014), discussions between researchers, teacher students and teacher educators about research ‘on a meta-level’ (746) may in that regard be crucial in order to challenge current barriers and develop positive assumptions about the value of research in PETE.

Based on the participating teacher educators’ perceived barriers to access and recontextualise research themselves, this study brings into question whether PE teacher educators in Denmark are best placed to mobilise research literature into PETE. According to Cain et al. (2016), the element of research mobilisation ‘involves activity and organisation of several types’ (532). Reviews, summaries, searchable databases and courses for PE teacher educators (ibid.) may provide important opportunities here. On the basis of this study, it seems relevant to consider how to integrate other recontextualisation agents, like researchers or employees from research centres to mediate the mobilisation of research. This would strengthen the official recontextualization field of the Pedagogic Device (Bernstein, 2000) leading to a weaker pedagogic recontextualization field. However, it would also constitute an important and facilitating approach in order to mobilise research into PETE.

Finally, the participants’ statements point to important tensions related to the types of research that are conducted and made available to teacher education, of the way research is made relevant in applied subjects and - in extension of that - to the hierarchical logic in Bernsteins model of the pedagogic device. According to Healey (2005) research is a complex phenomenon and it seems relevant to distinguish between various approaches and types of research. In that way it is also relevant to consider not only how to make research-based practices but also practice-based research. In that regard, it is clearly relevant in Denmark to consider how universities, research centres at University Colleges and PE teacher education can more consciously enable collaboration between
practitioner and researcher and so promote the production and distribution of publications directed at practitioners (Cain et al., 2016) and positioned between the textbook and the scientific paper. Furthermore, while incorporating research articles in courses for PE student teachers may be the most obvious way to implement research-based PETE, it is not the only method available. Healey (2005) suggests that “students are likely to gain most benefit from research and in terms of depth and understanding when they are involved actively” (183). Thus, while it is clearly important to assess the possible strategies and consequences of mobilising research directly into teacher education, as this article has done, it is also essential to be looking at alternative strategies.

**Conclusion**

PE and PETE have always struggled for institutional and educational status (O’Sullivan, 2015). The ability to select, critically read and use research literature may strengthen the institutional understanding of the value of PETE and furthermore support qualified PE-practices and strong arguments for PE as a school subject now and in the future. Five years after the reform in Denmark, it is still a major challenge for teacher educators in PETE to integrate research literature in their teaching practices. It is important to emphasise that the participants in this study do not reject the use of research literature in PETE, and also that teacher education departments in Denmark are already working hard to implement the new requirements. In that regard, it is also worth mentioning that shifts in cultural values in education take time. However, the current offer of professional development initiatives to integrate research is still limited, and furthermore there are clearly both organisational issues and values that block the incorporation of research-informed teaching and teacher education in Denmark. More systematic research is clearly needed to investigate how we may motivate PE teacher educators to mobilise research
into PETE, and how teacher-training departments may support the use of research literature in PETE. Based on this exploratory study the author suggests three main attention areas for future research concerning the integration of research literature in PETE: (i) To investigate existing (or missing) research-based practices in PETE and the policy considerations and principles they are embedded in and relate these to international reports on successful practices in research-based teacher education. (ii) To investigate the need for different types of professional development in relation to research mobilisation among PE teacher educators so that personally relevant and motivating forms that meet teacher educators’ need are introduced. (iii) To develop and test context-specific educational models that may strengthen the mobilisation of research and support mutual inspiration, knowledge sharing and collaboration between PETE stakeholders in the different fields of the educational system.

Acknowledgement

I thank the two anonymous reviewers for their constructive and helpful comments on the original draft of this paper.

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