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The past and current role of pupil's effort and physical tests in Norwegian physical education teacher's assessment

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Assessment practice is an important part of a physical education (PE) teachers work and can contribute positively to motivating pupils towards learning and developing lifelong pleasure in movement. In 2020, a new curriculum, "the Knowledge Promotion" 2020 (LK20) was introduced in Norwegian schools. This study aims to investigate physical education teachers' assessment practice relating to the view of effort and testing in PE, after the introduction of LK20. Nine in depth interviews were conducted with nine PE teachers from seven upper secondary schools in Norway. The data were analyzed using NVivo 12 and meaning condensation. The findings show that the informants use effort differently and to a greater extent related to pupil using their skills to help fellow pupils improve. Furthermore, the informants experience effort as a greater and more important part of the assessment with LK20, than with the previous curriculum. Furthermore, the analysis suggests that the use of physical tests may have decreased. The findings indicate that there has been a change in the informants' assessment practice in line with the curriculum's intention, with less focus on skills and more on effort. However, the findings indicates that PE teachers have much freedom in their assessment, and points towards a need for more follow-up and professional development for PE teachers.

KEYWORDS

curriculum, physical education, assessment, effort, testing

Introduction

The Norwegian curriculum for Physical Education (PE) emphasizes the importance of assessment in promoting learning and helping pupils develop competence in the subject. The assessment practice should be based on the Norwegian regulations of the Education Act and the guidelines in the curriculum for PE ([Directorate for Education, 2021](#)). The introduction of a new curriculum in PE (LK20) in Norway has sparked interest and relevance in studying how assessment practices have changed. Several studies all over the world have pointed to the need for further research related to PE teachers' assessment practice ([Aasland and Engelsrud, 2017](#); [Jonškås, 2011](#); [Killian and Woods, 2021](#); [López-Pastor et al., 2013](#); [Løndal et al., 2021](#)). This is especially important when new curriculums are implemented.

The use of physical tests has been deeply rooted in the assessment culture of PE in Norway ([Directorate for Education, 2021](#)), as in other countries ([López-Pastor et al., 2013](#)). Furthermore, the concept of effort has been a hotly debated topic in the field of PE in Norway ([Evensen, 2020](#); [Lyngstad, 2019](#)). However, while effort is integrated to a greater extent in the new curriculum in PE (LK20), there is little focus upon the use of physical tests. The study will address the following research question: *What are Norwegian teacher's reflections about*

assessment practice related to the view of physical tests and effort in PE, after the introduction of LK20?

Assessment through effort and physical tests

A vital question for all teachers is how to assess their pupils. According to Biggs (1996) description of constructive alignment, a teacher should plan their teaching related to the expected learning outcomes, and adapt the best teaching methods and relevant assessment approach according to these. When new curriculums are introduced with new learning outcomes and overall aims, this should often lead to changed teaching and assessment practice. Implementation of new curriculums are based on a desire for improvement related to the quality of the education, and changes that follow the curriculum goals is described as curriculum fidelity (Zhu et al., 2011). Fullan (2016) describes the adaption process of a new curriculum in three phases that takes 2–3 years—initiation, implementation and initialization. A vital factor in the implantation of a new curriculum, is the teachers effort and attitude for changes in their teaching (Fraser-Thomas and Beaudoin, 2002). Even though there is an effort against making changes in their education, several factors could obstacle the teachers from making this changes, as lack of time, the need for equipment or lack of consultant support (Fraser-Thomas and Beaudoin, 2002). Furthermore, PE teachers could also be negative towards making changes in their subject (Flemons et al., 2023). A Swedish study of PE teachers showed an assessment system characterized of arbitrary, where the PE teachers assessment practice were partly based on their sport experiences and PE traditions (Redelius et al., 2009).

According to the Directorate for Education and Training (2019), the LK20 curriculum integrates effort to a greater extent compared to the previous curriculum (LK06 [the promise of knowledge in 2006]). A historical view on the latest PE curriculums in Norway reveals that the curriculum from 2006 focused on development of sport-like activities and skills, and the assessment practice was often related to tests of physical abilities like running 3,000 m or tests of motoric sport-skills (Arnesen et al., 2013). This curriculum highlight that the pupil's effort should not be a part of the assessment. Later, the curriculum of 2012 was based on the idea that PE education should develop the pupil's ability to self-reflection on sport and physical activity (Lyngstad, 2019). The teaching according to the curriculum should create enjoyment during a variety of activities, and effort should be included in the assessment practice. According to Lyngstad (2019), the main change in the curriculum of 2015 was the inclusion of swimming tests in 4. class, to highlight the increased importance and focus upon swimming in PE teaching, especially for the youngest pupils.

The newest curriculum (LK20) demonstrated a new direction of PE in Norway. In the document “what is new in physical education,” the Directorate for Education highlight that the subject aims to motivate students towards lifelong enjoyment of movement and to maintain a physically active and health-promoting lifestyle based on their individual capabilities (Directorate for Education, 2019). The education in PE before LK20 has been described as adapted mainly to students which take part in sports, and not for other students. The sport participant students report higher enjoyment in PE than other

students, and the typical activities in PE in Norway have been different sort of ball-sports and basic strength and conditioning exercises (Moen et al., 2018). The physical education teachers report that, following the implementation of LK20, the curriculum has placed less emphasis on athletic performance. However, students continue to perceive the physical education instruction as being characterized by performance and sport (Vinje et al., 2024a).

The main goal for teaching is the development of pupils' lifelong interest for physical activity. LK20 point towards three main areas that should be focused upon: Movement and motoric learning, participation and cooperation in movement activities and outdoor activities and outdoor recreation (Directorate for Education, 2020). Furthermore, there should be less focus on sport, but rather a variety of physical activities, and the pupils should teach how to practice, create and express themselves during physical activity (Skjesol and Lyngstad, 2021). The Norwegian curriculum of today (LK20) also contains goals related to social and emotional learning in PE, which is similar to other countries (Wright et al., 2021). Recent research on PE pedagogy indicates that instruction continues to be dominated by ball games, strength training, and conditioning exercises (Brattenborg et al., 2024). Interestingly, these types of activities are preferred by both athletically inclined students and those who are not involved in sport (Brattenborg et al., 2024). Effort is in PE (LK20) associated with participation, practice in movement activities, physical learning, nature walks, interaction, and cooperation with others. The curriculum describes effort as the pupil's attempt to solve academic challenges to the best of their ability, displaying independence, challenging their physical capacity, and collaborating with others. It emphasizes that effort should be recognized even if it does not lead to visible results in performance or skills development. According to LK20, physical tests are not a suitable method for assessing pupils' competence in PE. Utilizing test results as the basis for grading in PE, may also be in contradiction with the purpose of assessment (Directorate for Education, 2021). If teachers use tests, these should align with competency goals and relate to the subject matter. Furthermore, they should stimulate discussions and reflections, aiding pupils in understanding their competence development and fostering motivation for learning (Directorate for Education, 2021).

Previous research into the use of physical tests and effort in assessment

From an international perspective, research has pointed towards a widely recognized problematic assessment mission in PE (Killian and Woods, 2021; Larsson and Nyberg, 2017; López-Pastor et al., 2013), which is supported by research from Norwegian school (Aasland and Engelsrud, 2017; Arnesen et al., 2013; Evensen, 2020; Jonskås, 2011; Løndal et al., 2021). This research points to there being different assessment practices and highlight a need for objective assessment practice (Arnesen et al., 2013; Larsson and Nyberg, 2017; López-Pastor et al., 2013; Evensen, 2020; Killian and Woods, 2021). The research that has been done around assessment and assessment practice points to there being different assessment practices, as well as a need for objective assessment practice (Arnesen et al., 2013; López-Pastor et al., 2013; Evensen, 2020; Killian and Woods, 2021). Furthermore, little research has been executed on the grading of effort and participation in PE (Baghurst, 2014). In James (2018) effort and

participation are problematized in relation to assessment practice, because effort and participation are not directly related to learning outcomes.

A literature search revealed that physical fitness tests are used in the assessment of youth pupils worldwide (Smolianov et al., 2018). However, fitness testing as an assessment practice in PE is questionable as a strategy to promote and increase physical activity and a more healthy lifestyle (Cale and Harris, 2009). It is argued that such tests could easily be psychologically stressful for pupils and create anxiety and embarrassment if they are not executed with pedagogical wisdom (Silverman et al., 2008; Wiersma and Sherman, 2008). However, research indicates that the execution of physical tests in front of other pupils has been reduced lately (Phillips et al., 2017).

The use of physical tests in PE has long played a part in PE assessment in Norway (Evensen, 2020; Directorate for Education, 2021) and has also been used in assessment work among PE teachers both nationally and internationally (Evensen, 2020; López-Pastor et al., 2013). For example, for decades there has been a tradition of measuring endurance and strength (Annerstedt and Larsson, 2010; Baghurst, 2014; Moen et al., 2018). The Norwegian Directorate for Education (2021) highlights the following regarding the use of tests in the new curriculum: Limited physical and technical tests, including measuring various athletic skills such as strength, agility, and endurance, are not a suitable method for assessing pupils' competence in PE, as described in the curriculum. Because of LK06 – in which effort was no longer an assessment criterion - focus on physical skills, and testing of these skills increased (Arnesen et al., 2013; Evensen, 2020; Leirhaug and Mac Phail, 2015). More recent research shows that testing is still practiced in schools, despite the revised 2012 curriculum (Leirhaug et al., 2016). Nevertheless, a Norwegian survey carried out by Moen et al. (2018) found that very few teachers use physical tests in their assessment. However, the same study showed that six of ten pupils “completely” or “somewhat” agree that physical tests are used as a basis for their final assessment, at the end of each grade. Research has shown that despite the stipulation that effort was not to be emphasized in the period 2006–2012, it seems that PE teachers did still emphasize this in their assessment practice (Vinje, 2008; Jonskås, 2011). That effort is included as part of the basis for assessment in the most recent PE curriculum (Directorate for Education, 2021), means that PE differs from many of the other compulsory subjects in Norwegian schools.

Research into effort in PE indicates that effort is linked to activities that become visible to teachers: it is the effort the pupil shows as being effort that counts as effort (Aasland and Engelsrud, 2017). A Norwegian study showed that “effort” was that which PE teachers “could easily see.” Good effort is seen as the pupils sweat profusely, that they improve, and display a positive attitude so that they contribute to making others perform and look good (Aasland and Engelsrud, 2017). The same study argued that PE teachers believed there was a clear connection between “working hard” and “good effort.” Research has pointed out that effort and attitude are decisive for the final assessment the pupil receives, effort and attitude often play a part when pupils get a higher or lower grade than the previous grade (Proitz and Borgen, 2010; Annerstedt, 2010). According to Aasland and Engelsrud (2017), there is little research dealing with the way effort is constituted in teaching. Research suggests that effort is emphasized differently in different PE teachers' assessment practices, and that PE teachers view the term differently when working with assessment (Larsson and

Nyberg, 2017; Aasland and Engelsrud, 2017). The fact that effort being emphasized differently may be an indication that PE teachers are uncertain of how effort should be used in practice. There is however, in the Norwegian curriculum, a relatively concrete description of how effort should be assessed: “Pupils' effort is part of the competence in physical education. Effort in physical education entails that pupils attempt to handle academic challenges to the best of their ability without giving up, demonstrate independence, push their own physical capacity, and collaborate with others” (Directorate for Education, 2021, p. 8). A recent study on the role of effort in physical education assessment indicates that most students perceive effort as a crucial component of their grades in the subject (Vinje et al., 2024b). Even if the previous discussion is related to Nordic research, a review of international research related to assessment practice (López-Pastor et al., 2013) conclude that physical tests and pupil's effort, have been used in PE teachers' assessment. According to López-Pastor et al., the use of physical tests in PE teachers' assessment practice, reflects a PE understood as body training, and an attempt to apply a technical rationality to PE teaching. However, the authors argue that this strategy has been widely criticized in the research literature. Furthermore, they argue that pupils have reported that these tests often result in a negative experience conveying little knowledge about their meaning and application to real life. Also, a relatively new study among Portuguese secondary school pupils (Marmeleira et al., 2020), found that physical performance was prioritized in the PE teacher's assessment practice, while pupils' effort did not play a major part in the assessment practice. The previous discussion indicate that physical tests and effort has been used within PE teachers' assessment practice, but in different ways and with different rationalities. With the aim of examining PE teachers' assessment practice according to physical tests and effort after the introduction of a new curriculum, a theoretical perspective that relates to educational policy changes and reforms, seems suitable.

Theoretical perspective of the study

Fullan (2016) discusses strategies for successful educational reform initiatives, focusing on the initiation, implementation, and institutionalization phases. His theory of “Educational Change” provides a framework for understanding the challenges of introducing new policies and reforms in education. This theory remains relevant to our research question and findings as it emphasizes the importance of successful initiation and comprehensive implementation to achieve institutionalization. Factors such as complexity and perceived need, highlighted by Fullan, are crucial in the context of introducing new curricula. By applying Fullan (2016) theory to curriculum implementation, researchers can identify strategies for navigating these challenges and enhancing the understanding of reform processes. Fullan (2016), seems relevant according to the discussion of the research question and the findings. The theory of Fullan is also used in a study by Walsh et al. (2022), to explore teacher educators' experiences preparing preservice teachers to implement a new PE curriculum, and to identify their professional needs to support this work.

Within curriculum and implementation research, John Goodlad has also been a main contributor (Gundem, 1990). Goodland has developed a theory regarding various dimensions of curriculum.

Gundem (1990) has adapted and further developed these, and the article will address some of Gundem's dimensions. Gundem has based his work on Goodlad's theory of different curriculum dimensions, and has, among other things, refined the following plans: The perceived curriculum refers to the outcomes of teachers' interpretations of the curriculum. The implemented curriculum refers to how these interpretations manifest in practice.

Method

To examine Norwegian PE teachers' reflections about their assessment practice in secondary school in terms of the views of physical tests and views of pupils' effort, individual interviews of PE teachers at secondary schools were used. With such a strategy, the study used a phenomenological-hermeneutic approach to shed light on the research question (Tjora, 2017), by exploring PE teachers' opinions, attitudes, and experiences regarding their assessment practice. Hermeneutic orientation in a phenomenological approach tries to understand the meanings from historical, contextual, or autobiographical perspectives (see Laverty, 2003). With such a strategy, the interpretation of the interview data led to a deeper understanding of the participants' statements - changing between full and partial understanding about the teachers' view of the assessment in PE (Kvale, 1983). Furthermore, the choice of a qualitative study was also confirmed using the checklist of Creswell and Creswell (2023) for designing a qualitative study, where it is important to research the participants meaning according to their natural settings as PE teachers.

Uncovering the uniqueness in everyone's experiences necessitates an open and flexible approach, in which the researcher actively listens and is part of a stimulating interplay with the research participant (Creswell and Creswell, 2023; Szlarski, 2016). Ethical research regulations for research were followed, and the study has been approved as being in line with the guidelines of the Norwegian Centre for Research Data. The same participants, procedures, data collection and analyses are also used in Tremoén and Lagestad (2024), but new analysis is offered by focusing on aspects of the data that have not been previously published.

Participants

Interviews with professionally trained and experienced PE teachers at secondary school were chosen to examine the research question. The informants were required to have at least a bachelor's degree with at least 60 credits in PE and/or sport, and at least 5 years' experience of teaching in secondary school. With the assistance of a stratified selection intended to get a representative group (Johannessen et al., 2016), 18 schools were selected by. The initial strategy of recruiting informants by sending letters to the principals of 18 schools proved to be ineffective, as it only resulted in one informant. Consequently, the authors had to broaden their search for informants within their own network and among teachers they were familiar with. Fortunately, nine participants (seven men and two women) showed their willingness to be interviewed after being individually contacted by the authors. Among the nine informants, two were individuals the first author had spoken to privately several years earlier. The participants had varying levels of teaching experience, ranging from

seven to 24 years, with five of them having more than 15 years of teaching experience (see Table 1 for more details). In addition to their teaching experience, the participants had diverse educational backgrounds. Four of the teachers held a bachelor's degree in sports, while four were qualified adjuncts with physical education as a primary subject. One participant was a lecturer in physical education. The age of the participants ranged from their mid-30s to late 50s. Eight out of the nine participants had been assessing students based on the new national curriculum (LK20) for over a year, while the ninth had been involved for a few months, but was included due to their relevant training and collaboration with colleagues.

Pseudonyms (names) were assigned to the participants because of anonymity reasons. The nine informants worked at seven different schools. Five worked at secondary schools in South-Norway, and four at secondary schools in mid-Norway (Table 1).

Procedures

A semi-structured interview guide was developed (Kvale and Brinkmann, 2015) and used as an interview protocol (Creswell and Creswell, 2023). This work was done in collaboration with two of the authors - one an experienced researcher that had used interviews as bases for several scientific articles. How to ensure content validity was discussed and problematized. Before starting the work on the interview protocol, the purpose of the study was identified in accordance with the descriptions provided by Kvale and Brinkmann (2015). Additionally, relevant research and theory were reviewed to gain a comprehensive understanding of the research area and identify potential research gaps. Before creating the interview guide, the first author spent 6 months gathering knowledge on the subject of "assessment in PE" and compiled a review. Much of the research used is presented in this article. The aim was to shed light on new areas

TABLE 1 Descriptive of the teachers participating in the study.

School number	Name	Years of experience	Education level	Age
1 South-Norway	Tore	14	Adjunkt [4 years of study]	40
1 South-Norway	Anne	24	Bachelor [3 years of study]	56
2 South-Norway	Sondre	20	Adjunkt [4 years of study]	53
2 South-Norway	Markus	17	Adjunkt [4 years of study]	50
3 South-Norway	Stine	15	Master [5 years of study]	44
4 Mid-Norway	Anders	16	Adjunkt [4 years of study]	50
5 Mid-Norway	Tormod	7	Bachelor [3 years of study]	32
6 Mid-Norway	Jørgen	19	Bachelor [3 years of study]	55
7 Mid-Norway	Rune	9	Bachelor [3 years of study]	34

within the field of study and contribute research that could be valuable for PE teachers and other stakeholders, including researchers. An inductive approach (using open ended questions without theoretical leads) was used in designing the interview guide. A significant amount of time was dedicated to finalizing the interview guide, which consisted of four main themes: assessment according to LK20, gender roles in PE, effort, and current assessment system. Theme one delves into the specific methods and criteria employed in accordance with LK20, whereas theme four explores attitudes, thoughts, and teachers' reflections regarding assessment in PE. The development of the interview guide was done in consultation with the second author, and an inductive approach was chosen to allow the experiences and thoughts of the informants to emerge regarding the research questions. Examples of questions included in the interview guide were: "What do you mean by effort/test?" "How do you assess effort in PE?" "Do you see any difficulties in assessing effort/tests?" "What do you think about effort/tests being part of the basis for assessment basis in PE?" "Do you see any change regarding effort/tests in LK20 compared to LK06?"

Prior to conducting the nine interviews, the first author conducted a pilot interview. The focus of the pilot interview was to test the interview guide, practice the interviewing process, structure the questions, and to ensure content validity – that the questions covered all relevant parts of the subject it aimed to measure. After the pilot interview, the interview guide was revised to include slightly fewer questions, as the first author discovered that some of the question formulations were very similar. Furthermore, the question "what you think of when I mention assessment in PE" was incorporated with the anticipation of gaining insights into the initial thoughts of the informants.

Data collection

During the interviews the interviewer (the first author) tried to listen actively, and asking in-depth questions as follow up questions if there was something interesting or unclear in the informant's statements. With such a strategy, new perspectives were included more deeply in the process. Five of the interviews were conducted physically, at the informants' request, in meeting rooms and/or offices at the informants' schools. The remaining four interviews were conducted digitally. The interviews had a duration of 45–60 min.

Analysis

The interviews were transcribed and analyzed individually with a view to achieve meaning condensation, in line with the description given by [Kvale and Brinkmann \(2015\)](#). They were first transcribed verbatim in NVivo 12, the informants answers being individually transcribed and interpreted. These transcriptions underwent multiple readings, leading to the formation of categories through the interpretation of their content ([Kvale and Brinkmann, 2015](#)). According to the possibilities within qualitative designs, we were building patterns categories and themes from the bottom up, using an inductive design, conducting theme analyses called "descriptive methods" by [Creswell and Creswell \(2023\)](#). Within this method it is important to stay close to the data, using limited framework and

interpretation for explaining the data, by structuring the information into themes, as explained by [Creswell and Creswell \(2023\)](#). Reading the PE teacher's reflections about their assessment practice in terms of their view of physical tests and view of pupil's effort in PE, after the introduction of LK20, an inductive approach was used. With such a strategy, the theoretical leads from [Fullan \(2016\)](#) not used in the interpretation of the data but used in the discussion of the results (categories). The text data's meaning was thus condensed, resulting in the development of both main categories and subcategories.

The analytic process took place during seven steps as presented by [Creswell and Creswell \(2023\)](#). In the first step, the interviews were transcribed, organizing and preparing the data for analyses. In the second step all data were reeded through, reflecting about the participants general ideas. In the third step the data was coded into categories. Quotations were reviewed, and statements related to assessment were allocated to the analytical unit titled 'assessment'. Subsequently, all statements pertaining to assessment were read and coded within the categories labelled 'effort' and 'use of tests', which were relevant to the research question of the present study focus upon the assessment practice related to physical tests and effort. Other codes that were related to teachers more general assessment practice were developed into three themes (a still more challenging assessment, assessment practice undergoing change, and increased focus on play development). These findings were presented and discussed in another study ([Tremoén and Lagestad, 2024](#)), titled "Norwegian physical education teachers' assessment after the introduction of a new curriculum – LK20." The area of physical tests and effort are not either a part of the research question or the findings of the present study, but the same interview data are used in both studies.

During the fourth step, themes were identified. For example, statements within the two categories 'effort' and 'use of tests' were scrutinized, leading to the construction of subcategories such as 'different understanding of effort,' 'effort used in a new way,' 'effort used with more prominence,' and 'a link between effort and attitudes' under the broader category of 'effort'. Following this categorization, two of the categories were also merged into one, as it was deemed more practical, and it was combined into "effort considered in a new way with more prominence. Similarly, statements associated with the category 'use of tests' resulted in the creation of the category 'decline in physical tests'. This strategic approach facilitated a comprehensive examination and extraction of nuances in the data related to assessment, the use of tests, and the application of effort, all in connection with the research question ([Kvale and Brinkmann, 2015](#)).

The categorization process unfolded after the transcription of the interviews. The decision to exclude the gender roles category was informed by the perceived lack of depth and considerable conjecture in the informants' responses on this theme. The inclusion of the 'use of tests' category, conversely, was driven by the participants themselves, as they extensively deliberated on this aspect during the interviews. Its incorporation stemmed from the evident significance attributed to this topic by the informants. As for the 'effort' category, the prominence of this theme in the subject matter, coupled with the recurrent questioning about effort during interviews, naturally led to the formation of multiple subcategories. This was undertaken to capture the diverse nuances and perspectives clarified by the participants. The participants have been given pseudonyms in the presentation of the results. According to [Creswell and Creswell \(2023\)](#), the finale step is

about representing the data, here using descriptive information about each theme.

Strengths and weaknesses of the study

The results of this study are derived from the experiences and opinions about assessment practice of nine PE teachers, and the interpretation of their reflections. The relatively small, not randomly selected sample means that the results may not be representative and cannot be generalized. However, according to Postholm (2010), the findings possess general value and are transferable to other educators and researchers within the field. Despite being a qualitative study utilizing in-depth interviews, the research encompasses an acceptable number of participants, thereby providing comprehensive insights into their assessment practices. Cobern and Adams (2020) contend that the validity of interview studies is heavily reliant on the quality of the analyses. They assert that nine participants are sufficient, provided that the perspectives of the physical education teachers are adequately captured. Cobern and Adams (2020, p.75) argue that “you need to interview enough people so that you learn most if not all possible opinions (among people of similar characteristics). Of course, researchers often want to know which opinions are more popular or more frequent, but that’s not the primary aim of qualitative work.” Also, Baker and Edwards (2012) point out that the number of participants depends upon if the participant answers the research question properly. Furthermore, Cobern and Adams (2020) highlight that rather than speaking about generalization in interview studies, one should think in terms of external validity - that the findings of the study are likely to be valid for similar situations with similar characteristics, which we will argue is the case in our study. Leung (2015) point to validity in qualitative research as “appropriateness” of the tools, processes, and data. Whether the research question is valid for the desired outcome, the choice of methodology is appropriate for answering the research question, the design is valid for the methodology, the sampling and data analysis is appropriate, and finally the results and conclusions are valid for the sample and context. Also, Golafshani (2003) point out that reliability and validity in qualitative paradigm are conceptualized as trustworthiness, rigor and quality. This study adds new knowledge about how PE teachers work with assessment after the introduction of LK20. That some of the findings are supported by previous research, and that the nine informants seem to be relatively unison in their reflections in several areas, strengthens the credibility and reliability of the results. At the same time, the informants’ experiences with the new curriculum – regardless of education, work experience and workplace, will be useful for gaining a broader understanding of the problem area.

According to Creswell and Creswell (2023), qualitative validity is about checking the accuracy of the findings by employing certain procedures, as this study has done. Creswell and Creswell points highlight the importance of determining whether the findings are accurate from the researchers, participants or the readers’ standpoint. Discussions indicate that they are. Furthermore, Creswell and Creswell (2023, p. 213) point to using “rich, thick descriptions to convey the findings” as an important strategy to ensure validity—a strategy this article are using. Furthermore, to ensure validity and reliability, it is important that research question is clear and logical, the data collection method and interview questions are chosen

carefully, a pilot test are conducted, that the data are collected data from a representative and adequate sample, and that the analyze process are transparent and accurate (Creswell and Creswell, 2023). We will argue that this study fulfils these requirements.

Results

In this section, we will present four main findings that we have uncovered. The four key findings are: (1) A decline in physical tests, (2) different understanding of effort, (3) effort considered in a new way with more prominence and (4) A link between effort and attitudes. The main finding identified from the analysis was that physical tests are not used as a basis for assessment. Furthermore, the analysis also indicated that effort has become a larger part of the basis for assessment, and that the informants view effort in LK20 slightly differently than in LK06. The result section also addresses how some teachers incorporate pupils’ attitudes in the assessment of effort. These findings will be elaborated and discussed below, starting with the decline in physical tests.

A decline in physical tests

The first main finding was a decline in the use of physical tests in a final assessment, after the introduction of LK20. Eight of the nine informants said that they had used physical tests during LK06, and that these had counted toward a final assessment. These eight informants reported that during LK06, they gradually changed to using fewer and fewer physical tests. The statement of Sondre exemplifies this:

Fortunately, assessment in LK20 has moved away from that earlier test regime, there are other things we will look for now. From 2006 onwards, there was a lot of testing, so fortunately we have got away from that a little now.

Also Tore pointed towards a decline in the use of physical tests, and found that positive: “Now, it is, well. There is not much testing, and there are other things we should focus upon, like... that we have not delved into fully yet, but that we are working on. Fortunately, assessment is moving away from the testing regime now, which was a bit excessive.” All the informants expressed frustration about the amount of testing, and a sometimes-excessive testing regime, especially at the start of LK06. The statement of Markus exemplifies this:

What I do now is that for each topic in gym class, I have an introductory period, and I observe how the pupils develop over time. There are no tests in that sense anymore; I don’t do that anymore.

Tormod was the only informant saying that he has never used physical tests in PE. He was the informant who had worked the least number of years as a PE teacher. This corresponds closely to the other views of the other informants on this topic. Five of the teachers said that they arrange a running test once or twice a year. All five said that this is something that is discussed every year within the teaching group, and that there is disagreement within the teachers about whether to continue with this or not. They claimed that the results of the tests have

neither impact on, nor count toward, their final assessment. The findings also pointed towards a different understanding of effort.

Different understanding of effort

The second main finding was a different understanding of the term effort. It does not appear that LK20 has had any impact on what the informants mean by the term effort, but several did say that the way they thought about effort in the past has changed during the time they have worked as PE teachers. Interestingly, several said that they have adjusted their approach to assessing effort following the introduction of LK20. All nine informants viewed it as positive that effort is still a criterion in PE and thought that it should contribute to assessment. Seven of the informants believed that effort is more important and has a greater place in LK20 than before, and that LK20 counts more towards the final assessment than in previous curricula.

Analysis of the interview material indicates that the informants understand and interpret the concept of effort in different ways. Six teachers describe effort as something complex, containing many elements, while three held a less nuanced picture of the term, with fewer elements being mentioned. The analysis reveals three informants linking effort to participation and attendance—that pupils show up at the right time, have their gym clothes with them, and can concentrate and do their best. Jørgen, who is one of these three, insists that: “If you do not have your gym clothes, you are not putting effort into it.” Magnus, who also names forgotten gym kit as a factor, points out that pupils can still participate in the lessons, but that forgotten gym clothes may be decisive in the final assessment. These three informants can be said to have a somewhat narrower understanding of the term than the other six. However, the six informants describing effort as a more complex concept divide effort into two parts; the pupils’ personal effort and the pupils’ effort to, as Markus puts it, to “make it more pleasant for others.” When it comes to the pupil’s personal effort, elements such as the pupils’ attitude, giving their best, and the pupils’ desire to practice and not give up are mentioned. Two of the informants also mentioned attendance and forgotten gym kit as elements that go into the assessment. Also, the effort the individual pupils make for fellow pupils, cooperation, as well as showing support to fellow pupils and contributing to others’ learning, are highlighted. However, what the informants say about effort towards fellow pupils, varies considerably. Anne describes effort in the following way:

You also have the effort towards the others. Have a sense of humor, we don’t like grumpy people. Then you make no effort in the subject, you don’t make a positive contribution. These go into the assessment.

Finally, the analysis indicates that, where effort is concerned, there are large differences in which elements are granted emphasis in a final assessment. However, the findings revealed that effort was considered in a new way with more prominence.

Effort considered in a new way with more prominence

The third main finding was related to effort considered in a new and more prominent way. Five of the informants said that the

introduction of LK20 has led to a change in the way they incorporate effort in their assessments, while the remaining four informants did not feel that the introduction of LK20 has changed their assessment practice. Tore, one of those who has changed his practice, describes this change in the following way: “With the new curriculum [LK20], for example if you are very good at basketball, that you use your skills to show others, bring in others and make others good in play.” The other four also point out that effort in LK20 is to a greater extent about using one’s own skills to improve others. Elements such as fair play, cooperation, that individual pupils make more active use of fellow players - as well as increased focus on team play, are all mentioned here. According to these five informants, this has also had an impact in terms of didactic choices in teaching. Tore, Sondre and Anne mentioned that they now have more focus on team play after the introduction of LK20, and that they have adjusted the rules they apply. This by using several collaborative tasks, where the focus on the individual’s skill is no longer so central. The analysis also indicates that several of the informants feel that effort does not depend on results to the same extent in LK20, as before.

The analysis shows that eight of nine informants feel that effort plays a larger and more important part in the basis for assessment in LK20 than in LK06, and that informants emphasized effort to a greater extent now under LK20 than in LK06. The informants said that they interpret LK20 as meaning that this curriculum allows for effort to be used much more in assessment than in LK06. They also believe effort to be the single most important factor in PE. They suggest that pupils with physical limitations/challenges who may have difficulty with various exercises - but who still do their best, can now - to a greater extent than before, realize high target attainment. Markus justifies this as follows:

With LK20, I think that the PE may have changed a bit, not least with effort. In a way, effort has come back a bit more, and you are allowed to use it more. I think that is very good.

Anders, one of the informants, states that he employs a three-part assessment approach in PE. He distinguishes himself from the remaining informants, as none of the other’s report using this method, although several informants mention having used a similar division under LK06. Anders’ statement can be contextualized in relation to a study by Arnesen et al. (2013), which demonstrates that some teachers may adapt their existing assessment practices rather than developing new ones in response to new curricula. This is further supported by Leirhaug (2016), who indicates that PE teachers provide various explanations and descriptions of their assessment practices. Anders also notes that the faculty at his school is highly cohesive and collaborates effectively. This may suggest that several PE teachers at Anders’ school employ this three-part approach, even under LK20.

A link between effort and attitudes

The fourth main finding was related to the link between effort and attitudes. This category was included after one of the informants addressed their concerns about this, and the first author particularly noticed, especially during the transcription process, how many informants spoke about the importance of attitudes in connection with effort, assessment, and grading in the PE subject. One of the

informants, Markus, sees a problem with the link other PE teachers make between effort and attitude. Markus reflects here the fact that effort and attitude often seem to be interpreted, by some PE teachers, as being the same, and that this is not fair to some pupils. In this way, pupils' attitude to the subject sometimes becomes decisive for the final grade the individual pupil receives. This is in line with both Anne and Rune statements. Anne states: that the pupils' mood or attitude counts toward a final assessment. Rune provides the following explanation regarding what is required to attain the highest grade in the subject: Then there is no room for any major deviations, just as I said before - effort and attitude. Several of the informants mentioned the pupils' attitude in connection with effort, including Tore, who pointed out that if pupils have good effort and a good attitude, then they all can achieve high goal attainment in the subject. Markus pointed out that the individual pupil does not necessarily need to like the subject to achieve high target attainment.

Discussion

A decline in the use of physical tests

The first main finding was a decline in the use of physical tests in a final assessment. The analysis indicates that this represents a gradual change, not directly resulting from the new curriculum (LK20). The result is supported by Evensen (2020), who points to there being little allowance in LK20 for the use of physical tests. These findings are also in line with those in Moen et al.'s (2018) survey, which showed that although very few teachers use physical tests in their assessment work, some do. The analysis suggests that the informants use physical tests in a way that is in line with the Directorate for Education's recommendation, and this is positive.

The gradual shift toward avoiding use of physical tests in assessment can be comprehended within the framework proposed by Fullan (2016), who says that the implementation of a curriculum can take several years. The change can also be seen in relation to the revision of the curriculum in 2012, where effort and the pupils' circumstances were once again to be counted as part of the assessment (Lyngstad, 2019). That effort was not to count in LK06, led to some teachers making use of physical tests and those activities, where it was easy to observe the pupils' skills (Arnesen et al., 2013). Fullan (2016) emphasizes that achieving an ideal result becomes more challenging if one or more factors in the reform work against implementation. The informants said that they were not comfortable with the test regime under LK06, and there was generally a lot of dissatisfaction with this reform. This may have influenced the implementation of LK06 and can possibly be seen in the context of Arnesen et al.'s (2013) study, which showed that only half of PE teachers had changed their assessment practice after LK06. Fullan (2016) emphasizes that achieving an ideal outcome is more challenging if one or more factors in the reform counteract implementation. The informants reported that they did not thrive under the testing regime of LK06. This may have influenced the implementation of LK06. The informants point out that there is little allowance for the use of physical tests in LK20, and that this is positive. That the informants are positive about this change may be advantageous for the implementation of LK20 (Fullan, 2016).

Although none of the informants use physical tests as a basis for assessment in LK20, seven of the informants said that other PE teachers in their own schools do still use physical tests as a measure of physical fitness counting towards the final assessment, even after the introduction of LK20. This way of assessing pupils is considered a breach of the regulations to the Education Act (Evensen, 2020). Previous research has pointed to teachers at the same school having different assessment practices (Annerstedt and Larsson, 2010), and this study's findings indicate the same. Sørli (2021) and Anthonson (2021) studies also indicate that teachers find there to be considerable room for interpretation in LK20. However, these are master thesis based upon empirical data with small samples. Variations within schools, and differing use of physical tests, can be seen in the context of the survey by Arnesen et al. (2013), which showed that some teachers adapt their existing assessment practice, instead of developing new practice because of new curricula. We will argue that considering Biggs (1996) description of constructive alignment, where it is important that the assessment practice is related to the learning outcomes it is worrying that PE teacher still execute physical tests in Norwegian PE and use these results in their assessment practice. This because the learning outcomes in PE cannot be evaluated with physical tests, but through other methods like observation, discussions and tasks. However, as pointed out by the Directorate for Education (2021), physical tests can be used sometimes, but it must be related to the learning outcome.

The results showed that the informants mentioned the importance of dialogue with the pupils according to assessment. This is in line with the Education Association (2019), who stresses that reflection among pupils is a central goal for PE in LK20. That Sondre uses physical tests as the basis for conversation with the pupils about bodily changes, is in accordance with the Directorate for Education (2019) goal that physical activity and mental health are to be seen, to a greater extent than before.

Internationally, the use of physical tests in PE assessment practice is widespread (Smolianov et al., 2018). However, many studies point to several negative outcomes related to the use of physical tests in PE, as embarrassment, anxiety and a possible reduction in physical activity and healthy lifestyle (Cale and Harris, 2009; Silverman et al., 2008; Wiersma and Sherman, 2008). UNESCO's report on PE teaching world-wide, point to several areas that should be improved, as reducing the gap between school policies and the implementation of the teaching, and increasing the quality of the curriculums in PE (UNESCO, 2013). The findings that indicate that some PE teachers in Norway still execute physical tests - 12 years after this was "excluded" from the PE of curriculum. This findings suggest that some PE teachers are unwilling to follow the description from the department of Education (Redelius et al., 2009).

Differing understanding of effort

The second main finding was a different understanding of effort among the informants. There are aspects of the concept of effort mentioned by the informants, which may be said to conflict with the regulations set down by the Education Act and the competence targets for PE (Education Act, 2020, § 3–3; Directorate for Education, 2020). In relation to pupils' efforts, some informants mention forgotten gym kit, attendance and whether the pupils are quiet when the teacher is

speaking, as elements considered in assessing effort. The last of these was mentioned by only one informant, whereas forgotten gym kit and being on time were said by five informants to be included in the assessment of effort. According to the guidelines, these are not things which should affect the final assessment in PE. Leirhaug et al. (2016) argue that the values of the individual teacher form the basis for assessment in PE. This seems to concur with the findings in this study, where PE teachers base final assessment on elements that, according to the guidelines, ought not to be included. That the informants include many different elements in the concept of effort, is supported by previously presented research, indicating that PE teachers incorporate the concept of effort in various ways (Aasland and Engelsrud, 2017). These findings can be explained by Gundem (1990) dimensions regarding how teachers interpret curriculum and learning objectives differently. These findings also make it relevant to highlight that PE teachers have much freedom when it comes to making assessments, and that there is a need for more follow-up and professional development for PE teachers. Here, we will point to Walsh et al. (2022) who suggest that teacher educators come together to discuss and understand the concepts and principles related to curriculum changes to develop their conceptual understanding of curriculum implementation – a discussion that allow them to deal with curriculum change regardless of the specific curriculum.

Effort considered in a new way with more prominence

The third main finding was related to effort considered in a new and more prominent way. The changes in the use effort after the introduction of LK20 can be seen in the context of Arnesen et al. (2013), who showed that around half of PE teachers changed their assessment practice after LK06. This is a finding which is also interesting considering that effort is to be understood in the same way in LK20 as in LK06, after the revision. It is, nevertheless, difficult to conclude exactly why LK20 has had this impact on the concept of effort. It may relate to the informants experiencing effort as more important and more prominent in LK20 than in LK06, which is supported by the curriculum (Directorate for Education, 2019).

The findings can be said to be in line with the curriculum's intention - that effort should be better integrated in LK20 (Directorate for Education, 2019). These findings are interesting in connection with Fullan (2016) concept of need, which concerns the extent to which teachers see change as necessary. That the informants are positive about this perceived change may be a factor influencing the teacher's work with implementation. The teachers' experience and capabilities will be central to how change is handled (Fullan, 2016). That the teachers are both positive and have good knowledge of the concept of effort from before, will contribute positively to the implementation of LK20 (Fullan, 2016). Stine is the only informant who does not agree that LK20 allows for more effort than before. She appears generally more critical of some of the competence targets in LK20. Stine believes that pupils who are not in good physical shape should not achieve high target attainment, even if they try.

According to Aasland and Engelsrud's study of PE teachers, effort was something that the teacher "could easily see" (Aasland and Engelsrud, 2017, p. 5). The results from our study do not seem to be entirely in line with this statement. Several of the informants

problematize the concept of effort, drawing in the importance of dialogue with pupils, and pointing out that effort is more than what is visible to the teachers. At the same time, some of the informants' statements do coincide with Aasland and Engelsrud's (2017) study, as some only mentioned elements visible to the teacher. With that said, none of them mentioned "working hard" and "sweating" as being components of effort, as Aasland and Engelsrud's (2017) study indicates. These differences can also be said to align with Gundem (1990) descriptions regarding the perceived curriculum. The perceived curriculum suggests that teachers' interpretations of the curriculum may vary (Gundem, 1990). Our findings suggest that there may be variations in how the informants have interpreted the curriculum, thus revealing differences in practices.

In the light of the aims of PE, it may be positive that the informants emphasize effort more with LK20. This may lead to pupils learning that effort forms an important part of physical activity, as well as more pupils experiencing mastery in the subject now that the element of skill is less prominent. Previous research has pointed out that effort can help pupils to get a higher grade (Prøitz and Borgen, 2010; Annerstedt, 2010). Our findings also indicate this, as the informants emphasized that the pupil's effort is crucial for achieving top grades, as highlighted by Anne: "To get a top grade, I think you have to use the skills you have to make others better and be positive in the subject, in addition to the effort that I expect."

Anders statement that the final assessment in PE after each grade is based on three content components: effort, skills, and fair play, may indicate that multiple PE teachers at Anders school use this three-part division, even under LK20. If this is the case, it may suggest that local traditions and assessment practices hold strong influence in different schools (Leirhaug et al., 2016; Redelius et al., 2009). This can be seen as problematic since neither the emphasis on skills in LK20 is prominent (Evensen, 2020), nor is the term "fair play" used in the competence goals of LK20 (Directorate for Education, 2020). However, according to Fullan (2016), collegial factors can influence the direction of implementation. Considering this discussion, it can be argued that there is still a need for more uniform assessment practices in PE.

The link between efforts and attitudes

The fourth main finding was related to the link between effort and attitudes. The finding of attitude as being important to PE assessment, is supported by Annerstedt (2010), who points out that pupils' attitudes to the subject are considered more important than the actual competence targets, by some PE teachers. Although the Directorate for Education (2019) highlights effort being integrated to a greater extent in LK20 than in LK06, it is specified in the regulations to the Education Act (2020, § 3–3) that behavior is not to be assessed in the subject. Fullan (2016) emphasizes that it is important, with new curricula, that the teachers understand what the aim of the change is, and how this can be achieved in practice. It is not a given that the teachers understand what they must now do differently. We will argue that even if our findings suggest that the PE teachers understand the aim of the change, they somehow struggle to understand how this can be achieved in practice. Furthermore, Fullan (2016), stresses that it can be challenging to find clarity in a reform, possibly leading to a false clarity among teachers given that the changes are open to

interpretation. Our findings suggest that the teachers find the new curriculum “wide” and open to interpretation, which makes the assessment practice challenging.

Conclusion

In this study, an investigation has been undertaken into how nine PE teachers at secondary school reflect about their assessment and how they have changed their assessment practice in terms of effort and physical tests after the introduction of the new curriculum (LK20). The results show that none of the informants used physical tests as a measure of the pupils’ endurance/strength, and that physical tests did not count towards the teachers’ final assessment. This accords with the [Directorate for Education \(2021\)](#) recommendations regarding the use of tests, who highlight that physical test should usually not be used for assessing pupils in PE. The results support previous research, showing that the informants use and understand effort in different ways in their assessment practice. The analysis also indicates that half of the informants have changed the way they use effort in assessment after the introduction of LK20. This is substantiated by the informants in that they are more concerned that the pupils use their abilities to make others better. The analysis further indicates that the informants feel that effort has been given greater standing, and prominence in LK20 than in LK06, following the revision in 2012. From a critical point of view, it is a weakness that the informants had only worked with LK20 for just over a year when the interviews were conducted, and therefore that their assessment practice is not yet well established. Assessment practice and reflections may change when the informants have more teaching experience under LK20. Furthermore, even if the use of [Fullan \(2016\)](#) and his key phases in relation to the introduction of education policy-driven change and reforms seem appropriate in the discussion of the results, other theories may have been useful. Finally, our findings point towards much freedom related to PE teachers’ assessment practice, and the practical implications is a need for more follow-up and professional development for PE teachers’ assessment practice, by giving PE teachers the opportunity to take further education courses in relation to assessment practice in PE. We will also point to [Walsh et al. \(2022\)](#), who points to the importance that teacher educators come together to discuss and understand the concepts and principles related to curriculum changes, to develop their understanding of curriculum implementation. Even if these argumentations are related to teacher educators, PE teachers will also benefit from such a strategy. The main goal of this study was to evaluate PE teachers’ assessment practice in relation to the new curriculum (LK20). As [Biggs \(1996\)](#) highlighted - if there are a mismatch between curriculum and the assessment process, this is problematic. If a competence or a physical ability that is not a learning outcome is measured in PE, this is not correct in relation to the department’s intention with the curriculum. Other countries describe learning outcomes where physical tests are natural (as fitness), and such tests could be conducted. However, research point towards conducting such tests in a very pedagogical matter, and strive to make fair assessment of the pupils. The new PE curriculums in Scandinavia describes that effort is an important part of PE and should be assessed, as our findings indicate happens.

It appears that there has been a change in the informants’ assessment practice in line with the curriculum’s intention, with less focus on skills and more on effort. It is also in line with the curriculum’s intention that

the informants do not use physical tests as a measure of the pupils’ endurance/strength, and that effort has been given a greater place in PE. However, as previous research, the results indicates that the teachers understand and interpret the concept of effort in different ways – which is problematic according to the need for an objective assessment practice ([Arnesen et al., 2013](#); [Larsson and Nyberg, 2017](#); [López-Pastor et al., 2013](#); [Evensen, 2020](#); [Killian and Woods, 2021](#)). Research has recently indicated that further research into curriculum-based PE is needed ([Løndal et al., 2021](#)). In this sense, this study is a contribution to making current and future teachers aware of their own assessment practices.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical research regulations for research were followed, and the study has been approved as being in line with the guidelines of the Norwegian Centre for Research Data (SIKT). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

TT: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Validation, Writing – original draft, Writing – review & editing. AS: Formal analysis, Validation, Writing – review & editing. PL: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing.

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