



Innovating examinations in teacher education

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Foreword

I find it reasonable to start off by thanking all the people I have been so fortunate to encounter on my journey. Starting with my supervisors Roger Säljö and Trond Eiliv Hauge, they have had a major impact on the content here and my development. In addition, Gjert Langfeldt made a crucial contribution in the final stages. I also want to honor the leaders and members of the ADILA-project at the University of Agder who made this work possible and provided a valuable cross-discipline perspective. Ghislain Maurice Isabwe and Gunnar Horn were particularly generous in the last stage of my phd-period. Furthermore, the PROTED centre and the University of Oslo represented by Rita Hvistendal and Andreas Lund, made this project possible and have my thanks. My colleagues at the institute of pedagogy should be thanked for their input and support. Hilde Johannesen, Roger Fromeide, and Dina M. Schoder have all done an excellent job as liason librarians during my period. My gratitude also goes to all fellow researchers I met at “Knausen”, and they provided a much-needed environment for informal discussions. Many thanks to Aksnes, Aamodt Nielsen, Heddeland, Lechner, Askland, Menning, Amdal, Kvamme, Tveito, Garshol, Anundsen, Horverak, and several others for the time we had there. In addition, it is necessary to thank Turid Skarre Aasebø and Inger Marie Dalehefte for following up and providing the necessary means to finalise this dissertation. Finally, a huge thank goes to my wife Siri Nordby for invaluable support and input, my parents and family.

Sammendrag

Lærerutdanning er en av de mest betydningsfulle utdanningene i verden. Det legges mye ressurser i utvikling og innovasjon for at denne skal fungere best mulig, både nasjonalt og internasjonalt. Likevel er det noen tilbakevendende dilemmaer som dukker opp i en akademisert utdanning av lærere, og særlig forholdet mellom teori og praksis blir fremhevet som et vanskelig område. Alle elementer i utdanningen må derfor bidra til bygge en enhetlig og meningsfull utdanning for lærerstudenter.

Denne avhandlingen tar utgangspunkt i et konkret eksempel hvor innovasjon av lærerutdanningen er i sentrum, og fokuset er rettet mot en ny eksamensform som ble introdusert ved Universitetet i Oslo rundt 2013. Eksamensformen ble utformet for å bedre mulighetene for integrasjon av praksis og teori i vurderingsformene, og det ble benyttet video-opptak av undervisning som metode. Det digitale formatet representerer en ny måte å tenke eksamen på, og er følgelig et interessant objekt som illustrerer mulige tilnærminger til innovasjon.

Interessen i studien er å finne ut hvordan de ulike aktørene som lærerstudenter og ansatte responderte på den nye utfordringen, og hvordan deres responser står i forhold til den uttalte ambisjonen om et bedre samspill mellom ulike elementer i lærerutdanningen. De tre ulike delene tar utgangspunkt i kvalitative intervjuer av lærerstudenter (N=11), innholdsanalyse av eksamensbesvarelser (N=21) og innholdsanalyse av sensorenes tilbakemeldinger til studentene (N=421).

En analyse i hovedsak er basert på sosio-kulturell teori viser at den nye eksamensformen er et redskap som gir flere ulike muligheter for handling, og som stimulerer til mange slags kreative responser blant lærerstudentene.

Studentene uttrykker også at de er fornøyde med det nye formatet, og viser at de kan utnytte det nye formatet ved å demonstrere sine kunnskaper om praksis.

Likevel er det grunn til å undres på om strukturene i konteksten støtter opp under det nye formatet i tilstrekkelig grad, spesielt når det rapporteres om manglende forberedelse og stilistiske tilbakemeldinger fra sensorene.

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1.0 Teacher education and assessment practices

1.1 Introduction

The background of this dissertation is my interest in analysing how pre-service teachers and university teachers respond to, and cope with, an innovative examination design in teacher education. In the case presented here, the University of Oslo and the local authorities decided to design and implement a new video-examination format as part of the teacher education programme. Serving as an example of how development comes about in teacher education, a study of this innovative examination will contribute to what we know about how teacher education is affected by such initiatives.

Teacher education is an extensive and widely discussed area of study among various stakeholders. Since teachers are seen as key actors in the implementation of educational and political ambitions, the education of these professionals is a vitally important function in most parts of the world. This is reflected in the huge amount of attention paid to this programme area by policymakers, legislators, scholars, media and the population in general. International organisations and agreements are also involved as they aim to provide optimal education and training of teachers, and vast resources are spent on innovation and analysis. One salient issue is the attempt to make this education relevant in an increasingly complex society, and precisely for this reason, the search for high quality in and relevant input for teacher education is a much-debated issue (see for instance Hudson & Zgaga, 2008; Loughran, 2017).

A brief glance at the history of teaching tells us that the teacher role has come a long way from being an unregulated occupation to being an institutionalised profession. The descriptions of early teacher practice reveal that the requirement for becoming a teacher was often based on insight into subject knowledge (Shulman, 1987). The local authorities had the power to decide who was qualified for such work. A gradual process over time has professionalised teacher education where it has become an academic programme in higher education. While the benefits of this development are obvious, some challenging issues have also arisen because the practical aspects of the profession have entered an institution where most structures by tradition have been established to support a theoretical

approach. At the same time, higher education has expanded significantly in recent decades, and as Schneider (2018) points out, several dilemmas must be considered when transforming teacher education into mass education.

One of the most important missions for teacher education is to equip future teachers with the necessary skills to cope with various work situations. To do so, a knowledge base for the profession must be defined and a programme that supports the appropriation of such knowledge must be established. Fenstermacher (1994) argues that several epistemological issues need to be resolved to provide qualifications and insights into what is required to become a teacher. In his view, the profession needs input from several types of knowledge, such as formal and practical knowledge, all of which will have different positions in the academic environment. Without delving further into his discussion, it is sufficient for the purposes here to point out the concern Fenstermacher raises about how practical knowledge can be acquired in a reasonably dependable way. Up to this point in time, researchers have found a wide range of concepts that may underpin what we consider to be effective, practical teaching, such as classroom management (Dicke, Elling, Schmeck, & Leutner, 2015) and lesson planning (König, Bremerich-Vos, Buchholtz, Fladung, & Glutsch, 2020). There are a high number of such necessary teacher skills due to the multifaceted nature of teaching, and as Adoniou (2015) points out, it is not enough to “know that” and “know how”. When she argues that an integrated understanding of the various domains of teacher-relevant knowledge is needed, this is an indication of the profound complexity of the topic.

From a student perspective, there appears to be a significant gap between practice and theory in teacher education. A study by Bråten and Ferguson (2015) showed that pre-service teachers in Norway found practical knowledge to be more valuable for their future work than the more formal aspects. This is not a new issue, but has been debated for some time, like when Lortie (1975) elaborated on the topic some forty-five years ago and Dewey (1904) more than hundred years ago. This recurring demonstrates that the issue is one of the more commonly recurring challenges for teacher education. An integrated understanding of teachers' knowledge base seems to be difficult to convey to pre-service teachers, and several novice teachers report that they experience a so-called “practice shock” during their first years in service (Dicke et al., 2015). According to Korthagen (2017), the lack of connection between campus-based teaching and teacher-training periods

may result in a fragmented education. Like other researchers, he proposes that the pre-service teachers should be given multiple opportunities to apply theory to practice and reflect over the content in various settings (Cheng, Cheng, & Tang, 2010; Cheng, Tang, & Cheng, 2012; Darling-Hammond, 2010, 2014; Heggen, Raaen, & Thorsen, 2018; Zeichner, 2010). Currently there is no consensus on how this can be done in a meaningful way, but several attempts have been made to strengthen the connection between various elements in teacher education.

This research-based approach to defining the content of teacher education is, however, only one part of the picture. The design and content of teacher education is also the result of long-term development where many stakeholders play a part. International agreements play a significant role, function as the foundation of national regulations and have a significant amount of influence on the process. Compared to earlier forms of organisation where the local authorities were in charge, teacher education is now also an activity based on centralised ideals. These are then part of a “hyper-narrative” which has introduced the measurement, competition and standardisation of education (Stronach, 2010). The general principles behind the Bologna (Klemenčič, 2019; Vögtle & Martens, 2014) and PISA (Elstad & Sivesind, 2010) developments are based on the aim to enhance the collaboration between and mobility of students across borders.

In the Norwegian context, which is the realm of this study, the central authorities are responsible for ensuring the quality of teacher education. Compared to other specialisations in this sector, the government has extensive control over details in teacher education through white papers and reforms (Afdal, 2013; Friedrich, 2020). In recent years, several examples of the tangible results of this control can be seen in the adjustment of the requirements, length and structure of the education to fit new national and international standards (Kunnskapsdepartementet, 2013). While such changes potentially renew and improve education, they also put a strain on the system responsible for implementing the new standards (Brunsson, 2009; Cuban, 1990; Fullan, 1993).

In this landscape of change, local initiatives are still visible and can be a significant contribution to the overall development of teacher education. As stated above, this study is based on a specific case where a video examination has been introduced as an attempt to renew this important part of the education programme.

1.2 Assessment as an integrated part of teacher education

The practice of testing learning outcomes through examinations stems from a long-standing tradition that has been present in higher education for centuries. In recent decades, the current use of examinations has been called into question due to the impact they have on learning strategies among students (e.g. Carless, 2015; Rowntree, 1987). The basis for this discussion can be traced back to the nineteen seventies and the gradual realisation of how examinations often were the centre of attention for higher-education students (Miller & Parlett, 1974). It was found at this time that testing situations inspire both “deep” and “surface” learning approaches, depending on how the students perceived the tasks they were given (Marton & Säljö, 1976a, 1976b). This means that learning and assessment are intertwined in several ways, and the viability and purpose of examinations have become the focus of extensive research (for instance, Black & Wiliam, 1998; P. Knight, 2005).

In the case of teacher education, examinations are also described as a central component, and affect the pre-service teachers’ learning in various ways. For instance, they serve to filter and determine the progression of the pre-service teachers during the modularised programme (Allen, 2017), but also direct focus on certain parts of the curriculum (Sjöberg, 2018). According to Schoenfeld (2007), assessing teacher knowledge in a meaningful way is difficult due to the inherent complexity of the teaching profession. In his view, several dilemmas are connected to the process of developing suitable examination formats where competency and skill can be demonstrated properly. For the most part, examination formats in teacher education are based on written products (Erixon & Josephson, 2017), which means that the demonstration of competency must often be mediated through text.

The discussion of how to innovate examinations has followed different patterns, where one alternative seems to involve changing the conceptual frames from examinations being a summative test to becoming a process-orientated task. Portfolio examinations have been tested as a way of assessing students’ learning in higher education since the late 1990s (Dysthe & Engelsen, 2011). This format involves systematic work with various products over time, feedback from the educators and the choice of final material to be assessed. In this way, examinations become formative in the sense that the candidates learn through several steps

during their courses. This has also been tried as a part of teacher education, with some promising results (Hauge, 2006; Strudler & Wetzel, 2011). However, despite the potential advantages, experience has shown that this format also has several challenges that are difficult to overcome. Involved parties, such as the students and educators, have to familiarise themselves with entirely new roles and processes, and the result does not match the expectations. As Dysthe (2007) concluded, “learning culture and assessment are so dependent on one another that we cannot change one without the other”. She added that “assessment has always been a political issue” (p. 27), suggesting that the context of higher education must address other concerns than just student learning. This example illustrates that changes in this context involve a number of considerations, both on the micro and macro levels of operation.

Digital technology opens new ways for undertaking assessment, which is also the case in this study. Prior attempts at using this in teacher education include tasks where pre-service teachers worked with visual images of practice, such as noticing details in classroom situations presented in a video. An early example is found in the US, where pre-service teachers watched and analysed realistic teaching situations (McIntyre & Pape, 1993; Pape & McIntyre, 1993). The local initiative was well-received, the pre-service teachers performed well, but the project was abandoned due to lack of resources and support (McIntyre, Personal communication, September 21, 2018). More recently, the VATK (Video Assessment of Teacher Knowledge) tool (Wiens, Beck, & Lunsman, 2020; Wiens, LoCasale-Crouch, Cash, & Romo Escudero, 2020), and the Observer Tool (Stürmer & Seidel, 2015) are examples of new types of testing teacher knowledge based on video-recorded classroom situations. These and other studies report good results and represent innovative ways of demonstrating different types of knowledge.

This dissertation centres on a similar attempt to establish a new examination format in teacher education where video technology is used as a task element. The technology was designed by the *PROTED* centre and introduced as an ordinary examination mode at the University of Oslo in 2013. The intention behind the design was to connect practice and theory through visual media, but also to align the various elements in the teacher training through a suitable examination format. During the examination, the pre-service teachers watch a video of an unknown

situation and are then to use both their knowledge of practice and theoretical knowledge to analyse this genuine example from school (Lund & Engelién, 2015). A design like this is directed at addressing the above-mentioned dilemmas, and the intention is to give the teacher educators a new tool for assessing their students' capabilities while using and integrating different types of knowledge.

The interest in the current study is to examine in depth the implementation of this video-examination design as a regular part of teacher education. Considering how previous attempts to change examinations, for example, the portfolio test faced impediments due to the established culture, the focus will be on describing and discussing how the examination impacts and interacts with the various actors on different operative levels. Here three levels will be explored: the individual [micro], the group and local level [meso] and the overall organisational system [macro]. The reason for this division is that the individual actors, students and educators, will be at the centre of the changes, and their responses will be of interest when it comes to how the innovations are interpreted. The introduction of new tools with unknown affordances in a well-established examination tradition is an interesting area to explore. Such individual interpretations will affect and also be affected by the group level, which constitutes the learning culture. This meso level is also under the influence of the macro level where the overriding decisions and rules are made. All in all, these levels and the interplay between them constitute the context for innovations, such as video examinations, and co-determine how this innovation will be understood and may provide new opportunities to demonstrate professional knowledge.

Three research questions constitute the core of this investigation:

- How did the pre-service teachers and educators respond to the new examination design [micro]?
- In what ways do these responses align with the intention of integrating knowledge of practice in teacher education [meso]?
- What characterises higher education as a context for innovation and change of examinations [macro]?

To provide fruitful answers to these questions, a three-part analysis approach will be used to examine various aspects of this topic.

The first study presented in an article entitled “Pre-service teachers’ experiences of a digitised examination design: The inter-relation between continuity and change in an institutional context”, reports on qualitative interviews with eleven informants. The aim in this article is to discover how the new examination design has affected the student teachers’ approaches to learning.

The second study, a continuation of the first, is centred on the content of the student teachers’ examination reports after sitting for the video examination. The title “Affordances of a video examination: Opportunities for pre-service teachers to demonstrate professional knowledge of teaching and learning” reflects on the important question of how the video examination can test additional aspects of teaching knowledge. The study, designed as a content analysis of 21 examination reports, aims to reveal how students make use of experiences from classroom practice and what they have studied when they analyse a given situation.

The last part of this study is an analysis of the assessors’ feedback to the student teachers entitled “Providing assessment feedback to pre-service teachers: A study of examiners’ comments”. A total of 412 written messages given over three years is the basis for another content analysis. This material will reflect on both the process of providing feedback and the teacher educators’ perspectives on what they deem valuable in the video-examination design.

In sum, this is the foundation of a study where the area being studied will be examined from various perspectives.

2.0 Assessment practices in teacher education

2.1 Review of literature

While a wide range of related issues could be included here, only a selection of issues will be reported. The process of finding and selecting information has focused on some core topics relating to the investigated topic.

2.2 The literature review process

This literature review is the result of a process that is mostly aligned with the narrative tradition (Waterfield, 2018). A systematic approach is sometimes used to provide a reliable and transparent process (Randolph, 2009), and the procedural sometimes mechanical way of gathering relevant literature through systematic searches may also be beneficial when searching for relevant research on a limited and focused field. However, as Black and Wiliam (1998) point out, such approaches also have their shortcomings.

Instead of settling on some sort of a systematic approach, various search methods were used to find the current selection of literature, ranging from using conventional searches in databases to so-called “snowballing” (Schlosser, Wendt, Bhavnani, & Nail-Chiwetalu, 2006). The latter involves investigating literature lists in relevant literature. Many of the databases that were used to find literature for this project had relevant sources for this project. The main bulk of research was found through EBSCOhost, Scopus, Web of Science, Eric, Google Scholar and Oria.

Determining keywords for the search process was challenging due to the complex field of investigation. Unlike fields of science where keywords are part of an agreed-upon taxonomy, much of the material on the current topic is spread across various disciplines and carries various labels. Therefore, the approach used for the review has for the most part been a process based on accumulated experience. In the end, some keywords proved more fruitful than others, for example “higher education,” “teacher education,” “goal,” “assessment,” “video,” “pre-service teachers” and “feedback”. To expand and elaborate on the search, keywords such as “writing,” “exam,” and “technology” were added. Combining these keywords involves Boolean operators known to either expand or narrow the scope of the search. Moreover, the most recent journal issues were examined through the

“Browzine” service. Literature from the last ten years was preferred, but older material was also considered.

The following review is not an exhaustive account of relevant research, but a summary of recent literature in the field.

2.3 Research on teacher education

Based on previous reviews of teacher-education research (Cochran-Smith & Villegas, 2015; Cochran-Smith et al., 2015), the field can be described as multifaceted and fragmented with many small-scale studies. Therefore, this section concentrates on specific topics relevant to the current study.

Research on teaching and learning in teacher education touches on many of the same issues as seen in the general context of higher education, such as quality and reflection (Foong, Nor, & Nolan, 2018; Horn & Cattell, 1966; Zahn et al., 2020). However, learning is often conceptualised according to the type of education that is being investigated, for instance “learning to teach” (Mutton, Burn, & Hagger, 2010), “teacher preparation” (Cochran-Smith & Villegas, 2015; Schneider, 2018) and “professional learning” (Eraut, 1994; Heggen et al., 2018). The knowledge needed to become a teacher is conceptualised in several ways. Some draw on the “Pedagogical Content Knowledge” (PCK) approach (Shulman, 1986) to illustrate how various domains of insight are necessary to become a good teacher (Evens, Elen, Larmuseau, & Depaepe, 2018). A recent interest is the field of developing digital competencies among pre-service teachers (Galway, Maddigan, & Stordy, 2020; Instefjord & Munthe, 2017), sometimes conceptualised as “Technological Pedagogical Content Knowledge” (TPACK) (Cubeles & Riu, 2018; Koehler & Mishra, 2009).

Various teaching methods are explored as a means of promoting the above-mentioned kinds of knowledge, as well as other methods for facilitating learning among pre-service teachers. Writing is clearly a vital part of teacher education, as in other disciplines in higher education (Erixon & Josephson, 2017; Roald, Wallin, Hybertsen, & Stenøien, 2020). Creating an environment for dialogic learning is suggested as a way to inspire the students (Assen, Koops, Meijers, Otting, & Poell, 2018; Tingjia & Simpson, 2020), in addition to such alternative teaching approaches as flipped learning (Özüdogru & Aksu, 2019), writing reflective

journals (Dumlao & Pinatacan, 2019) and using videos to stimulate reflection (A.T. Williams, 2020). An emphasis on promoting student reflection and deep learning is visible in much of the research (Baeten, Struyven, & Dochy, 2013; Blomberg, Sherin, Renkl, Glogger, & Seidel, 2014; Calandra, Sun, & Puvirajah, 2014; Manburg, Moore, Griffin, & Seperson, 2017). Technology-based methods are frequently discussed as a solution for advancing the field of professional learning, for instance, in cases where simulations bring students closer to practice (Levin & Flavian, 2020).

Moreover, a relatively common aim found in much of the research is to understand pre-service teachers' experiences both before and during teacher education (du Plessis, 2020; Haraldstad & Kristiansen, 2020; Scales et al., 2018; Zeki & Güneyli, 2014). For instance, their perspectives on the teacher-training period are valued as a source for making adequate improvements in the course (Köksal & Genç, 2019). There is also a concern about the motivational aspects of the pre-service teachers, such as developing interests during the teacher-education programme (Rautiainen, Mäensivu, & Nikkola, 2018), engaging in one's own learning (Fletcher, Ní Chróinín, & O'Sullivan, 2019) and creating meaningful environments (Kostiainen et al., 2018).

Teacher education has various contexts and stakeholders (Livingston, 2018). One set of rules applies when the student teachers are on campus, while others are in play during their periods in placement schools (Heggen et al., 2018). The in-practice training through mentoring is seen as a valuable part of professional learning (Mena, Hennissen, & Loughran, 2017; Trevethan & Sandretto, 2017). However, the pre-service teachers may experience that the connection between on-campus and in-practice training is lacking, and that this aspect should be better organised to increase their mutual relevance (Zeichner, 2010). Such work is visible in a study made by Cavanna et al. (2020) where educators work to improve coherence in teacher education. Through a mixed method approach they found that clear visions of how to achieve better coherence existed among the educators, although their approach to the issue seemed to differ between contexts.

A comparison between the different teacher-education programmes in a number of countries shows the many different approaches to organising the content (Darling-Hammond & Lieberman, 2013; McGarr & Emstad, 2020; Rigney, Dana,

& Vanderhauwaert, 2021). Admission processes and criteria, as well as content, appear to be determined by national rather than international standards (Dolan, 2017; Vaillant & Manso, 2016). The various traditions within didactics and curricula are also noted as being significantly different when it comes to European and American approaches (Werler & Tahirsylaj, 2020). The Norwegian education system has undergone significant changes in recent years. The most prominent of these is a quality reform where the teacher-education programme has been extended into a five-year master's degree course (Kunnskapsdepartementet, 2017). This was established by the central authorities through a series of white papers, where standards were created to describe what the outcome of the teacher education should be (Karseth, 2020).

2.4 Research on assessment practices

One of the main aims for designing the video-case examination is the attempt to assess teacher-relevant knowledge. The topic of assessment has become one of the more extensively researched fields as it is also connected to learning outcome (Barnard, Whitt, & McDonald, 2020; Black & Wiliam, 1998; Breivik, Blikstad-Balas, & Engelién, 2017; Broadfoot & Black, 2004; Pereira, Flores, & Niklasson, 2016). This section will include some of the recently debated issues that are considered relevant for the context described here.

2.4.1 Educator perspectives on assessment

High-stakes testing is believed to have considerable impact on learning processes, and Biggs and Tang (2011) even claim that "...assessment is the senior partner in learning and teaching. Get it wrong and the rest collapses" (p. 221). Seminal studies from the sixties (Scriven, 1967) and seventies (Marton & Säljö, 1976a, 1976b) pointed out that testing had varied impact on students' learning and learning approaches. This point raised awareness on learning mechanisms in relation to the use of assessment tools. Contemporary research tends to be focused on such topics as how assessment formats can promote learning in a formative way (Black, 2015) and how they can inspire deep learning approaches (Gerritsen-van Leeuwenkamp, Joosten-ten Brinke, & Kester, 2019; Villarroel, Boud, Bloxham, Bruna, & Bruna, 2019).

The "assessment cycle" has been proposed as a model of how examinations can be perceived as an element in a circular pedagogical process (Reinholz, 2016). In

practice, this means that examinations are not just instruments for measuring learning outcome but an integral part of the course planning as a whole (Boud et al., 2018; Dawson et al., 2013). Therefore, it is important to expand our knowledge on how students react to various examinations. One approach is the concept of “consequential validity”, checking whether a test promotes the targeted forms of learning among students (Admiraal, Hoeksma, van de Kamp, & van Duin, 2011; Deeney & Shim, 2016; Hitchcock, Onwuegbuzie, & Khoshaim, 2015; Tiekstra, Minnaert, & Hessels, 2016). The similar “backwash effect” conceptualises examinations as a backdrop for the students when they interpret the curriculum that they are working with (Prodromou, 1995).

Educators’ understandings and beliefs about assessment vary (Taras & Davies, 2017). In a qualitative study of educators (N=9) and their assessment practices in higher education, Reimann and Sadler (2017) found that there is considerable variation in educators’ understandings of assessment. Some of the educators had a detailed and intricate logic behind their use of assessment, which indicates a high level of awareness on this topic. Another qualitative study of educators (N=33) conducted by Bearman et al. (2017) supports these findings in several ways. They noticed that there are discrepancies at times between design and implementation due to local affordances. The educators they studied had to think in a strategic way and navigate between organisational and environmental factors when they decided which assessment formats to use.

Innovations and other kinds of changes in assessment practice are not always met with enthusiasm by educators. Deneen and Boud (2014) report that there can be significant resistance against compulsory changes among university staff, and the reasons are based on individual preferences. Deneen and Boud suggest three main categories of concerns fuelling this resistance: pragmatic, procedural and epistemic concerns, which indicates that the resistance is based on a number of factors. Although the educators welcome changes in learning activities, they do not appreciate changes in assessment, especially when they believe they come from audits. In addition to such concerns, Ramsey and Khan (2020) found that emotions impact educators’ decisions when they face dilemmas relating to new approaches. Although they describe the general change, and not assessment in particular, this is also worth considering.

For an educator, providing feedback to students is considered to be a cornerstone of the formative assessment concept (Bailey & Garner, 2010; Evans, 2013; Hattie & Timperley, 2007). However, providing useful feedback is no easy task, and many educators struggle to find a beneficial way of doing this (Boud & Molloy, 2013; Haughney, Wakeman, & Hart, 2020; M. Johnson, 2016; Molloy & Boud, 2013). As Mumm, Karm and Remmik (2016) claim, learning outcome will decline when the feedback given follows the summative format. This kind of feedback is often performance focused, offering praise and criticism, and seldom providing any advice for future examinations (Hughes, Smith, & Creese, 2015; Orsmond & Merry, 2011). While written text is often the preferred choice for providing the feedback, it has obvious shortcomings due to language ambiguities (May, 2013). Alternative ways of providing feedback that use technology have been tested, and although some methods show promise, they require some investment (Fawcett & Oldfield, 2016; Parkes & Fletcher, 2017; Turner & West, 2013). “Feedback literacy” has been proposed as a skill that can improve both students’ and educators’ abilities to convey and receive feedback (Carless & Boud, 2018; Gravett et al., 2019; Joughin, Boud, Dawson, & Tai, 2020; Sutton, 2012; Van Heerden, 2020). A study of written feedback comments showed that examiners often provided information on task level with no “feed-forward” messages (Arts, Jaspers, & Joosten-ten Brinke, 2016).

2.4.2 Student perspective on assessment

High-stakes testing has been investigated from a student perspective as well. The student group is a diverse entity with people from all levels, walks of life and ages (Carreira & Lopes, 2019). This means that they have a broad range of interests, and a focus that may differ from the educators (Goos, Gannaway, & Hughes, 2011). According to Sotardi and Brogt (2019), students base their expectations of examinations on previous experiences, and there are reasons to believe that they look upon examinations as an end point and not a part of their learning process (Pastore & Pentassuglia, 2016). One recent study conducted by Lynam and Cachia (2018) sheds light on how students (N=23) are more concerned about emotional aspects of the examination situation, and that stress has a negative impact on their performance. This factor is apparently dependent on such variables as predictability of the examination, which means that the information given in advance is of vital importance for the experienced tension during testing. The emotional aspect of high-stakes testing is found to be a vital component affecting

student performance (Banks & Smyth, 2015). For instance, emotional states like anxiety and stress are well described in both recent theory and research (Kahu, 2013; Pekrun & Linnenbrink-Garcia, 2014).

To cope with examinations as an emotional and high-stakes situation, students have employed all kinds of tools and methods to improve their chances at achieving a better result. A study conducted by Norton, Tilley, Newstead and Franklyn-Stokes (2001) identified several possible strategies. Their survey of students' behaviour (N=267) suggested that often used techniques included choosing the easiest title or use interesting references to optimise their performance (79%) and being extra careful to refrain from writing anything controversial (15%) (p. 276). Furthermore, cheating behaviour was another technique as pointed out by Norton et al. (2001), where they found that copying material appears to be a common occurrence among students (p. 277). Using existing material without references (45%) and even copying another student's coursework (22%) are examples of how the students work. Studies of plagiarism (Ellery, 2008; Heckler & Forde, 2015; Hellas, Leinonen, & Ihantola, 2017) confirm this tendency, and it is suggested that technological advancements facilitate the copying of texts (Eret & Ok, 2014). "Contract cheating", where people are paid to write examination answers for others has also become an issue with the increased use of home examinations (Amigud & Lancaster, 2019). Although AI technology may aid the work in disclosing cheaters (Dawson, Sutherland-Smith, & Ricksen, 2019), new formats with new affordances appear to facilitate new practices.

Students want feedback after tests, and preferably something that they can relate to, understand (Vattøy, Gamlem, & Rogne, 2020) and use in their continuing studies (Marie, 2016). Students' engagement with feedback can improve their future performance (Zimbardi et al., 2017), but it depends on their willingness to act on it (Bailey & Garner, 2010; Vattøy et al., 2020). The delivery format may be of some importance in this regard (Boud & Molloy, 2013), but some cases reveal that students appear to be mainly interested in the grade (Winstone, Bourne, Medland, Niculescu, & Rees, 2020). In research on students' perspectives, students seem to prefer continuous communication with their educators (Dowden, Pittaway, Yost, & McCarthy, 2013; Sutcliffe, Linfield, Riley, Nabb, & Glaszard,

2019). In this way they can build their “feedback literacy” (Carless & Boud, 2018; Joughin et al., 2020).

2.4.3 System perspectives of assessment in higher education

On a system level, such as the local-, national- and international-authorities levels, assessment is a tool with many functions and implications. It has a key monitoring and credentialing role and for this reason it must have high quality. But it is not easy to define quality, and of the various aspects that have been identified, reliability/validity issues have been singled out as particularly challenging (Chatterji, 2013). Existing examination formats may not be suited to measure the knowledge in question (S. Knight, Shum, & Littleton, 2014), and will consequently not be accepted as valid instruments.

Furthermore, assessment is also connected to the marking process, and the use of grades. An inconsistent use of grades has been reported across various disciplines (Lipnevich, Guskey, Murano, & Smith, 2020), in addition to inter-marker reliability issues (Herbert, Joyce, & Hassall, 2014). In cases where text assignments are assessed, the tacit dimension is particularly important and may lead to individual rather than standardised judgements (Zahn et al., 2020). Several solutions have been proposed, such as establishing courses for examiners to establish common ground.

One system level response to such reliability/validity issues has been to introduce standards and criteria that will aid the measurement process. This approach is often criticised in research due to the problem of formulating standards and criteria properly without ambiguity (Sadler, 2017). Defining content in this way may deprive educators of some of their freedom to compose a curriculum (Ormond, 2019), but it has also been pointed out that the work of the educators and examiners is at stake. Tacit knowledge and intuition tend to be used in the marking process even when criteria are provided (Bloxham, Boyd, & Orr, 2011; Bloxham, den-Outer, Hudson, & Price, 2016; Sadler, 2010), and the criteria are rarely operationalised sufficiently to aid such processes (Gynnild, 2013).

2.4.4 Examination formats used for high-stakes testing

Among the common formats, the written school examination has long historical roots (Gipps, 1999). Although it has been modernised in recent years through the use of computers (Clarke & Simonsen, 2013), the text-based product is still the core element in the practice. Formats that include writing or typing are frequently used, and the written school examination is reported to be the most common format used in the Norwegian context (Ørnes, 2015). One probable explanation is that the written school examination is considered to be a viable option when reliability is juxtaposed with cost of resources (Swing & Coogan, 2010). With the increasing number of students enrolling in higher education, pragmatic considerations come more into play when choosing a test format (Saarivirta & Karppinen, 2016).

The innovation of examinations follows a number of paths. The concept “innovation” itself is not always clear (Bevitt, 2015), and is sometimes replaced by similar terms, such as “enhancing” (Roscoe, 2013) and “improving” (Newhouse, 2015). The objectives behind innovating examinations can be to reduce student tension and stress, increase engagement in the test and improve validity (Shute, Leighton, Jang, & Chu, 2016). Many of the recently reported innovations include the use of digital technology (Ion, Cano, & Cabrera, 2016; Pereira et al., 2016), where there is also a discussion on the potential and the drawbacks associated with these (Deeley, 2018). Bennett, Dawson, Bearman, Molloy and Boud (2017) report on a study of educators’ experiences of such innovative formats, and the finding is that some of them had to be modified if they were to become viable alternatives or were even simply abandoned. Another aspect is the well-being of students and staff during such innovation processes, and that their perspective should be part of the consideration (Jones et al., 2020).

Innovation covers both making alterations to existing test practices and making completely new examination activities. In the context reported here, the video-examination design may be described as an innovation due to the combination of digital tools and media and can be seen in the light of similar formats.

2.5 Video as a tool in teacher education

Video technology is used in the current context as a way to enhance the video examination. Other studies of this tool provide insights into what this tool affords.

For instance, video may serve as a tool to document practices, and observations and analysis of such practices may improve professional development (Blomberg et al., 2014; Borko, Koellner, Jacobs, & Seago, 2011), increase student reflection (Calandra et al., 2014; Reitano & Sim, 2010) and raise so-called “classroom awareness” (Fadde & Sullivan, 2013). The latter concept involves interactive use of video to develop the ability to recognise critical patterns in classroom events, and react accordingly (Fadde & Sullivan, 2013). Using images from practice in this way is known from other professions, such as the medical and healthcare fields (Watson, Stevenson, & Hawkins, 2015), and have been analysed in terms of professional vision and situational awareness (Endsley, 2016; Schritteser, 2014).

When it comes to teacher education, video documentation has taken on an important role in other innovations than the described video-examination format investigated here. For instance, a reported project in Norway illustrates how video may support supervision of student teachers through the recording of their practice (Mathisen, 2012; Mathisen & Bjørndal, 2016). This application of hand-held devices, such as smartphones and tablets, was developed to support the sharing of video and immediate comments/feedback by both peers and supervisors. Moreover, watching video of own or others teaching performances may aid pre-service teachers in reflecting on teaching practice, and give them valuable input on their road to becoming in-service teachers (Charalambous, Philippou, & Olympiou, 2018).

Student teachers are novices in their field so that the video content might be quite difficult to interpret when used for educational purposes. Blomberg, Renkl, Sherin, Borko and Seidel (2013) draw upon the theory of cognitive load to explain why students tend to make premature evaluations of the video content. With limited prior knowledge of teaching, it seems necessary to have some kind of support or scaffolding to guide the student teachers in their observations and analysis of video recordings. Yadav (2008) interviewed 16 pre-service teachers to shed light on their perspectives on different types of video cases. They reported that the concept of videos cases was inspiring and stimulated discussions, and that the scaffolded format which included some clues was preferred over the open-ended one. Apparently, this made it easier to analyse the content for the pre-service teachers.

Several methods for improving teacher skills through videos have been tested, for instance the Classroom Video Analysis (CVA) programme (Kersting, Givvin, Sotelo, & Stigler, 2010) and Video Assessment of Teacher Knowledge (VATK) (Wiens, Beck, et al., 2020). Both these projects use video vignettes to identify certain aspects of teaching practice, and it appears that the students are able of coping with the task. Taking a slightly different approach, “the observer tool” was designed to measure pre-service teachers’ observational skills. By presenting video vignettes between two and three minutes in length, the students have to describe and predict certain outcomes of the displayed situations (Seidel, Blomberg, & Stürmer, 2010; Seidel & Stürmer, 2014; Seidel, Stürmer, Blomberg, Kobarg, & Schwindt, 2011). While the results are reported to be promising, none of these formats have yet to be used on a large scale.

Video recordings of classroom activity would allegedly help the students to visualise ways in which the instruction could be given (Beck, King, & Marshall, 2002). At the same time, Hatch, Shuttleworth, Jaffee and Marri (2016) found that the use of videos in teacher training is a complex endeavour. According to their study of pre-service teachers’ use of video recordings, the media must be implemented with careful consideration of the affordances. For instance, a potential tension was noted between interpreting videos individually and as a group. While the video in itself did not elicit reflections on one’s own performance, the group discussions of the video recording seem to be a valued opportunity to receive input on one’s teaching performance (Hatch et al., 2016). This particular use of videos is recognised in the organising of so-called video clubs, where in-service teachers gather to discuss recordings of their own performances. This has proved to be beneficial even for experienced teachers, and the members report that they have become more astute at noticing details (Van Es & Sherin, 2008). According to Zhang, Lundeberg, Koehler and Eberhardt (2011), this way of using video is an activity that may generate new perspectives, although it has been pointed out that the quality of discussions is important for learning with videos (Alonzo & Kim, 2018). All in all, the video tool seems to be well-suited for various learning and assessment purposes and inspires professional learning among the students.

2.5.1 The video-examination design

To begin, it is important to provide some background information on the video-examination design and look into earlier research and literature on the topic. However, as the examination has only been in use for a relatively short period of time, there is not that much research to report on.

The video-examination format presents the students with a video case of a classroom situation. The examination candidates are then prompted to write their observations and undertake an analysis of what they have observed. Moreover, they are instructed to select one issue from the case to discuss in light of relevant teaching and learning theory.

The design was piloted and implemented in teacher education during the 2012/2013 academic years at the University of Oslo, Norway. It was developed by the Centre of Professional Learning in Teacher Education (PROTED) (Lund & Eriksen, 2016), and the examination has now become an ordinary part of the teacher training. Initially, this was a three-hour home examination, but was expanded to a four-hour format soon after. Without providing grounds for the decision, the length of the examination was recently adjusted to five hours (University of Oslo, 2016). The task formulation has also undergone some changes over the years. The first version of the video examination included this text (translated from Norwegian):

The first part of the exercise begins with an observation, where you, based on relevant theory, are to explain the central observations in the case. The next step is to formulate an issue which can shed light on how you as a teacher can work with one of the topics you have observed in the case, in your Didactics Subject 2. Discuss the issue in light of pedagogical and didactic theory. You can also include teacher-training experiences where they are relevant to support your argument. (Lund & Engelién, 2015, p. 142)

Here the student teachers are asked to look for *central* observations in the video and use *relevant* theory to explain what they see. In the next period (2014-2015), which is also the most relevant period for this dissertation, the task was formulated somewhat differently:

The first part of the exercise begins with an observation, where you, based on relevant theory and with the use of relevant concepts, are to explain

important observations in the case. The next step is to formulate an issue that can shed light on how you as a teacher can work with one of the topics you have observed in the case, in your Didactic Subject 2. Discuss the issue in light of pedagogical and didactic theory. You can also include teacher-training experiences where they are relevant to support your argument. Refer to the case where it naturally fits in the discussion.

The slight reformulation includes instructing the candidates that they must *use relevant concepts* in the first part, and the observations are supposed to be *important* rather than *central*. In addition, the candidates are encouraged to apply examples from the video case in their discussion. A more recent version was introduced in 2016-2017, with additional changes:

The first part of the exercise begins with an observation, where you, on the basis of relevant theory and concepts related to learning, teaching and/or class management, are to explain important observations in the video. Based on these observations, choose a topic that is relevant to your Didactics Subject B. Discuss this topic in the light of pedagogical and didactic theory, and incorporate teacher-training experiences where they are relevant to support your argument. Refer to the video where it naturally fits in the discussion. (Nilsen & Mathiassen, 2016, p. 5)

Now *class management* has become part of the first task, and instead of choosing an *issue*, the student teachers have to find a *topic* to discuss. The last two sentences have also been reformulated without changing the meaning. While a newer version of the examination (2018) is virtually unchanged, the last sentence now states: “Refer to the video case in the discussion” (University of Oslo, 2018). This means that the use of examples from the video case is no longer optional in the second task.

The video case presented in the examination, approximately ten minutes long, presents a selected excerpt from a genuine classroom situation. A new case is recorded for each year, and thus, the student teachers have no advance knowledge about what the content might be. The case that was used in 2015 presented a lesson in the Norwegian language subject where a teacher led his pupils through the topic of “realism” as a literary era (for a detailed description, see the article “Pre-service teachers’ opportunity to demonstrate their knowledge about teaching and learning through a video-examination design”). The student teachers are permitted to watch

the video as many times as they like, and at any point during the examination. Prior to the examination, they have also been given the opportunity to attend a seminar where the basic principles of video analysis are presented.

The video-examination format may be worked on anywhere, and all available resources are allowed for solving the tasks. This means that the students are free to utilise whatever tools they deem helpful to give good answers to the tasks. Bearing in mind the liberties the students are given during the test, a design like this is comparable to home examinations (C. M. Johnson, Green, Galbraith, & Anelli, 2015). Some research on the video examination during the pilot phase suggests that most students preferred to answer the examination at home, and some chose to collaborate with other student teachers (Lund & Engelién, 2015). Apparently, collaboration was a way for them to feel more secure in the examination context, and not primarily as a support for solving the tasks (p. 143).

An overarching goal of this video-examination design is to test the students' professional competence, not their ability to present theoretical ideas alone (Lund & Engelién, 2015, p. 142). Potential advantages of using video in the examination is that the assessment method could become more ecologically valid and make practical experiences more relevant than before (p. 143). The theoretical background for the video-examination design is socio-cultural theory, and more specifically, how mediation of digital tools changes the perspective on learning and assessment (Lund & Engelién, 2015). Considering the notion that learning has a performative aspect (Säljö, 2010), Lund and Engelién (2015) propose that the assessment of students' knowledge should have a more dynamic form (p. 139). They assume that the video-examination design gives a better opportunity for the student teachers to demonstrate their multifaceted training; both theoretical and practical aspects of teaching are addressed by using a video case.

Another aspect of the development of the video examination is the notion of constructive alignment (Biggs, 2014). Instead of creating a new and isolated examination design, a guiding principle behind the design was to create an examination that would give relevance to other elements in the teacher education course in which it was embedded (Lund & Engelién, 2015). By using a digital platform and involving experiences from teaching practice in the assessment

situation, the video examination gave relevance to those aspects of the course. Connecting various lines like this strengthens the coherence and structure further.

3.0 A theoretical lens for analysis

3.1 Theoretical background

Examinations have an important position within the higher-education system and, due to the way they are used, can be considered as instruments of power in many ways. For instance, the choice of topics in an examination signal what parts of a course are valued and may then affect how the students study. In this chapter it will be argued that a broad approach is needed to investigate various aspects of the embedded examination practice. As mentioned above, the overall aim is to provide answers to a three-fold question concerning (a) the pre-service teachers' and educators' responses to the video-examination, (b) how their responses align with the intentions and (c) characterisation of higher education as a context for change of examinations. Addressing a nested system that spans different levels of operation means that the investigation must focus on both individual and collective issues.

The context studied here can be regarded as a complex system with a nested structure. Various components, such as tools, rules and actors, interact and produce a multitude of connections. Hence, the university and the many activities that take place there are the result of several processes where both internal and external actors are involved. A complexity of this kind has certain implications for this study. Studying examinations as an isolated component in the university system will not grasp the full impact of the current innovation. Therefore, a broad scope will be used in the investigation to create an understanding of how processes transverse the various levels of operation that may be found in teacher education and higher education in general.

3.2 Studying higher education as a nested system

To understand the complexity of the higher-educational structure, a brief glance at the historical background will introduce some of its comprehensive content. Universities were once autonomous units where most of the activities were decided and initiated by the local authorities. Humboldtian notions like academic freedom and *Bildung* were seen as key values (Backhaus, 2015), and a relatively small number of privileged students were tutored in such institutions. The universities gained their reputations through scholarly achievements, such as research development and discoveries. Gradually, higher education and its development of

science and research became a cornerstone for societal progress and a centre of power as more and more human activities were built upon higher knowledge.

It has been argued that with their local control, universities have failed to change to adapt to developments in the modern world and have therefore been forced to change by the external authorities (Nybom, 2003, p. 150). Core features of higher education have changed drastically in recent years. Instead of being an exclusive option for an elite, higher education has become available to large portions of the general population and is necessary for many types of activities. Academic freedom has thus been challenged by managerial ideas, and the control over the system has, to a large extent, been transferred from the local authorities to centralised departments, politicians and policymakers. Some ideas from organisation theory will be seen in contrast to traditional values of the university (Stronach, 2010), and may turn universities into what Habermas described as “mechanical” and “soulless” entities (1987, p. 3). For some, changing the framework of higher education in this way is to change the very idea that universities originally were built upon (Holford, 2014).

However, despite the many changes, several of the earlier ideas and ideals remain, which leaves higher education in a mixed state between continuity and change (Bleiklie, Henkel, & Kogan, 2005). Decisions are made on several levels and interpreted by several actors. Values are also drawn between traditional and modern lines. In sum, these kinds of context will form a nested and complex structure where each actor must relate to a larger, overarching system in their everyday practice.

The current investigation is situated within this complex field where activities, rules and standards affect each actor. Any introduction and use of examinations cannot be simply looked upon as a matter that impacts individuals or groups but must be seen as a part of processes that may be traced across sectors, and even across nations. Although the current study is centred on one specific examination, its relevance stretches outside the local context due to this complexity. The study of this new approach will be more than an example of a novel examination format, but an example of how such an important tool is used within the context of a large organisation with several stakeholders.

3.2.1 Examinations as study objects

The study object at hand is centred on a video examination in teacher education and within the nested structure of the university. On an individual level, an examination and its outcome can be seen as a “boundary object”, meaning that it is relevant beyond the current context (Akkerman & Bakker, 2011). For a student, the impact of examinations may have major consequences, and a failed result can mean that a whole year of studies is wasted. The emotional impact is also reported as severe, since an inferior result is often interpreted as a lack of capabilities (Spangler, Pekrun, Kramer, & Hofmann, 2002). Moreover, both the students and teachers in a given course are affected by the examination format and topics covered by it. Teaching to the test or the “backwash” effect are well-known phenomena where learning processes are impacted by future testing (Prodromou, 1995). Students tend to adjust their efforts in line with the upcoming examination. In addition to having such impact, the overall results of examinations go beyond the actor level, and may raise questions regarding relevance of teaching, programme structure and so on. A low score on examinations over time can even be interpreted as the system having low quality and may give reason for adjustments or new reforms. It is therefore of some importance to investigate examinations as a tool which is not neutral but associated with power and power relations.

The examination design investigated in this study was developed by the Centre of Professional Learning in Teacher Education (PROTED) as a response to the teacher-education reforms that were introduced in Norway at the time (Vestøl & Lund, 2017). The intention was to improve the alignment between the various elements in teacher education, and the analysis of video could potentially increase the relevance of teaching practice in formal test situations (Lund & Engelién, 2015). Hence, the situation includes several components, such as the individual actor, the teacher-education programme and the centrally initiated reforms of teacher education.

This complexity is not reflected in comparable studies of examinations where the focus tends to be centred on aspects of the innovation. For instance, Wiens, Beck et al. (2020) report on the validity and reliability of a video-based assessment design for teachers, and only briefly mention cost and time aspects in their discussion. In the same vein, Gharib, Phillips and Mathew (2012) compare an

alternative examination format with existing ones and examine how the new format has impacted student performance. By approaching the subject of examinations in such a way that makes isolated aspects salient, examinations are considered to be neutral tools, and far-reaching questions about their place in the larger system are not part of the analysis.

As mentioned above, universities and colleges are currently in a transition stage from being self-regulated institutions to becoming actors in a greater, national and international market like the Bologna Process (Klemenčič, 2019). This means that the current study of a video examination is embedded in the context of an organisational nature and influenced by various agencies.

While several previous research reports have overlooked the nested nature of higher education, the intention in this study is to address the complexity seen in this system. Only when change in assessment practice is seen both as part of teacher education and as part of university practice, can the subject in this study be seen in a relevant frame.

3.3 Choice of theoretical lens

Based on this line of argument, the choice of theoretical lens has been made with the intention of capturing the multi-layered nature of the teacher-education context. The theory must cover both how the individuals act and develop within the system, and how their actions relate to this greater context.

A socio-cultural framework, as proposed by Vygotsky (1978), is deemed suitable to capture the complexity of the context due to the broad scope used when investigating learning processes. Since this theory was first proposed, it has been developed and tested in contemporary research and can be a flexible tool for covering various social settings and their components (Moll, 2013; Smagorinsky, 2011). Genetic analysis was proposed by Vygotsky as a mode of inquiry where both the individual cognitive development (microgenetic) and the development of other genetic domains in which the individual takes part (ontogenetic, sociogenetic, phylogenetic) are considered (Wertsch, 1985).

Socio-cultural theory was proposed and developed in a period where the understanding of organisations was limited. Only recently has Wertsch (2010) discussed how the Vygotskian framework can capture the nested structures of institutions. The previous section looked at how the context of teacher education in recent years has become increasingly complex due to relations across institutions and nations. Organisations and organisational concepts have also become significant parts of the contemporary way of working, thinking and living, in most cultures (W. R. Scott, 2014). Hence, the investigated situation here calls for an extended theoretical frame beyond the socio-cultural aspect. In order to point out and properly analyse various characteristics about organisations, more specific tools adapted to the range of problems found in higher education are needed (B. Johnson, & Fauske, 2005).

Within this perspective of Nordic or neo-institutional theory, a viable tool for analysing organisational properties of higher education are the works of Johan G. Olsen and Nils Brunsson. Brunsson (2002) and his analytical framework addressing organisational “hypocrisy” will be especially useful when it comes to explaining the current status in the higher-educational context. Combining the two theories of socio-cultural and organisational ideas is not common but was perceived as a necessary step to create a lens with sufficient clarity when it comes to identifying various aspects of the organisational nature. For instance, it is necessary to consider the rules that apply, how they are monitored, different positions in the organisations and so on.

It was also found important to introduce three different levels of operation in the higher-education sector to separate and identify patterns in this context. Inspired by, for example, ecological systems theory (Bronfenbrenner, 1979) and social psychology (Katz & Kahn, 1966), the labels “macro”, “meso” and “micro” have been used to differentiate between these levels. Beginning with the latter, all activities that are made on an individual and social level are here seen as belonging to the micro level of operation. While the meso level of operation encompasses the local education entity, the macro level of operation is considered to be the national higher-education system and the relevant authorities. This division serves the general purpose of outlining the categories for analysis.

3.4 Social-cultural learning theory

A socio-cultural understanding of cognitive development considers cultural and historical contexts to be especially important. Vygotsky (1978) is the founder of the socio-cultural theory, and his work will, for the most part, be the theory used here. According to his theory, people are not considered to be isolated subjects, but a part of communities where they interact and connect with their surroundings in various ways. History and culture are seen as part of the frame in which the individual learns. His concepts on development have since been elaborated on by other researchers so that the theoretical framework is still under development.

Compared to other possible approaches relevant to this study, a socio-cultural perspective will add to the analysis by exploring the mediated nature of human development. Such aspects as cultural tools, how they are utilised, and the participants' previous experiences are essential elements here. In particular, the three concepts of tools, mediation and affordances give explanatory power in this dissertation. An analytic lens of this type will provide a wide perspective on how students and educators engage in various activities in the institutional context, and how changes may affect their actions.

Some of the concepts commonly used in sociocultural theory, and important for this dissertation, are “tools”, “mediation” and “affordances”. It is necessary to clarify how these are understood and how they relate to each other. We begin with clarification.

3.4.1 Tools

As Vygotsky (1978) and other theoreticians suggest, in development over the ages, humans have utilised various tools to interact with their surroundings for various purposes (e.g. Donald, 2001). This concept encompasses most physical objects used for various purposes, but also mental strategies and structures that aid the user in one way or another.

Some general qualities of tools are that they are not neutral objects, but their shape and content will affect the users' handling of them and learning, according to Säljö (2005). An example presented by Wertsch (1998) refers to how the so-called QWERTY keyboard (named after the order of the keyboard letters) illustrates how tools may be shaped for a particular purpose, as this setup of letters was originally constructed to slow down typing, and thereby prevent typewriters from jamming.

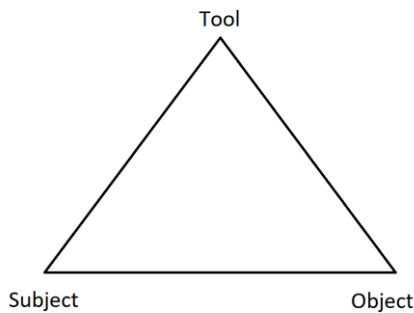
Even though the typewriter is now basically obsolete, modern keyboards are still using the same setup that slows typing speed. This example illustrates how tools are shaped by history and context, and that their original purpose does not always match their current one.

According to Vygotsky (2012), an important aspect of human learning and information storage is the use of signs as tools. His theory of language appropriation, and the use of language for learning, is worth noting here. As claimed by Bakhtin (2010), most human activity involves the use of language (pp. 60-61). It can be described as a meaning-making tool, and Vygotsky (2012) named the written form “deliberate semantics”, i.e., the use of signs to externalise internal speech, and thus a way to reflect on human thinking (p. 193). Vygotsky argues that this process of externalising thought is quite difficult due to differences between internal and external speech. In his view, inner speech is condensed and impossible to understand by anyone other than the thinker, while written language should be explicit and understandable to others. Therefore, a transformation from internal to external speech is required to clarify what we think, and even though it may be a process where awareness is raised, it is also considered demanding in terms of abstraction. A tension between internal logic and meaning making between individuals is at the core of theories about communication (Bakhtin, 2010; Rommetveit, 1974). Moreover, Vygotsky (2012) points out that writing is often a matter of conveying messages to an unknown reader, which raises the level of complexity even further. Compared to an oral conversation, where all participants have some notions about each other’s tacit knowledge about the topic, writing will often be without such an implicit preconception, and every aspect of the topic must be made clear in order to clarify the message.

This description of how written language is a difficult tool to master points to a dilemma at the centre of most writing processes and is thus highly relevant here. Examinations can be conceptualised as a monitoring tool where the students are given an opportunity to demonstrate knowledge they possess on a certain topic. Since the activity tends to be based on the use of written language, the writing process will sometimes become part of the monitoring, and thus invoke such emotions as stress and fear.

3.4.2 Mediation

The concept of mediation is here understood to refer to how tools shape actions. Vygotsky used a triangular model to illustrate how human experience is sometimes mediated. This simple relation is sufficient to illustrate the basic principle of mediation:



[Figure 1: Mediation illustrated, relation between tool, subject, and object]

The line between subject and object can be a direct experience but can also be mediated through a tool. It is possible to claim that we are increasingly dependent on tools; in our contemporary time, an increasing number of tools are available to facilitate people's interaction with their surroundings. Some basic principles behind mediated are worth exploring. For instance, mediation is something that can be trained or at least explored. Starting as a novice, all agents undergo a period of learning to master and appropriate the tool in question to understand its potential (Wertsch, 1998, pp. 46-58). Furthermore, tools can be replaced by other tools, and thereby alter the mediation process somewhat. This has been called "re-mediation" (Säljö, 2005), which means that the subject and object are the same, but the tool has changed. Such changes or transformations of tools may be part of processes where tools are consciously designed to fit a particular purpose. However, the transformation of tools is often the result of a coincidence, or "spin-off" (Wertsch, 1998, p. 58), where materials and inventions are used in new places and for new purposes. The relation between tools and mediation can be quite complex and difficult to trace in detail. In contrast to the basic situation where a single individual utilises a tool for a defined purpose, many cases involve a wide range of subjects handling material and immaterial tools to achieve several objectives. As an example, the programming of a website is a matter of handling the computer and associated programmes, in addition to using special language and strategies to make the site appealing, informative and accessible. Each part of this process may be described in isolation as goal-oriented use of tools, but the entire process will

make more meaning if perceived as a whole. This is also the case in this dissertation, where several actors and tools are involved, but the actions will not be considered as isolated events.

While the notion of mediation is suited for describing the use of defined tools and the action of humans, it has been expanded very much over the last fifty years or so. Attempts have been made to explain a wide range of complex relations. For instance, Tho, Trang and Gregory (2020) found that “deep learning approaches” can be considered a mediator between “positivity” and “quality college life”. Following the logic of Wertsch (1998), if the concept of mediated action were to be all-encompassing, its meaning would collapse, and it would be difficult to find a proper definition for analytic purposes (p. 25). Hence, the objective of this dissertation is to identify some crucial tools that are used in the situation in question and analyse their role.

A specific tool may mediate different objectives, depending on the user and his/her ability to exploit its properties. Language can, for instance, mediate a vast number of experiences, where language use may range from basic conversation to advanced poetry. Not all these actions are equally accessible to all users, and as pointed out above, most tools require training before they can be used. This obvious difference in mediation means that one artefact will be interpreted and utilised in various ways by various users, which may be conceptualised as “mediation outcome space”. Inspired by the notion of “learning outcome space” (Marton & Säljö, 1976b), this conceptualisation is used to refer to the various purposes a tool may be used for. According to Hutchby (2001), such a multitude of uses is not the result of individual creativity, but of what the tool affords. Compared to historical tools, modern digital tools will often afford a wider range of mediated actions due to their flexibility.

3.4.3 Affordances

Tools have certain “affordances”, which here means that they have a recognisable combination of properties. This concept is important for this dissertation as it helps to point out the various qualities about the examination format that are recognised by students and educators.

This concept has been posited by Gibson (1977), who defined it as the properties of a given object revealed through perception. For instance, a surface may appear slippery, and it can potentially afford slipping or sliding. Even though the concept is commonly used to describe only advantageous properties, and thus in contrast to “limitations” or “constraints” (M.L. Williams, Burnap, & Sloan, 2017), it is not understood in this way here. Gibson (1977) believed that the concept covers both beneficial and injurious properties (p. 68), which will be the understanding of the concept in the following text. Furthermore, affordances will not only include observed properties, but all aspects revealed through human senses and functions. To elaborate on the concept, Gibson (1977) argued that humans have proved to be able to manipulate objects, and thus alter the affordances to suit a particular purpose. This is an important point here, due to the introduction of a novel type of examination. He also claimed that affordances of certain substances or objects may also be hidden and sometimes misperceived (Gibson, 2015). The affordances of an unknown tool are not obvious to the viewer due to the lack of previous knowledge. In the situation described here, both pre-service teachers and educators encountered an examination format for which they had no prior experiences.

Recognition of affordances is a result of experience and learning (Hutchby, 2001). To discern the various affordances a tool possesses, it is necessary to explore them in detail. Considering tools based on signs, such as text, numbers and notes, their affordances are determined by how they are interpreted, and the context in which they are used.

3.5 Considering higher education through a socio-cultural lens

By focusing the proposed analytical lens on higher education in general, and teacher education in particular, some structures become clear. The socio-cultural perspective will be used to focus on how various social settings affect peoples’ actions and reactions. It is a widely accepted notion that people react in different ways to a given phenomenon depending on where it occurs (Olson, 2003; Smagorinsky, Wilson, & Moore, 2011; Säljö & Wyndhamn, 1993). This is obviously the case for higher education and teacher education.

Higher-education institutions have certain commonalities with other institutional contexts. They are often contrasted to “natural” arenas, such as domestic surroundings, (Vygotsky, 1997) in the sense that they are organised meeting places

with certain norms and rules. Even though the students are active parties in the context, they are also affected by the existing culture. For instance, the learning that takes place there will largely involve understanding phenomena that exist outside of the context. Any attempt to introduce different phenomena to study means that they may well be at risk of being understood as detached from their normal occurrence. Being decontextualised in this way means that objects here are isolated from their natural surroundings and reduced to how they appear and what attributes they have. Engeström and Tuomi-Gröhn (2003) emphasise and problematise how knowledge can be transferred from one context to another, and in their view, there is an epistemological difference between two given contexts (p. 21).

This has implications for higher education in general, and most certainly for teacher education. Over the years, a significant amount of literature has been published on theory-practice issues that arise when learning to be a teacher (for instance Dewey, 1904; Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Shulman, 1998). This perceived problem for both educators and students points out that the institutional context affects their learning efforts. Apparently, the knowledge of teaching practice is not easy to generalise and transfer across contexts (Eraut, 1994, pp. 41-44).

As a reaction to this inherent problem, higher education has introduced several methods to make a closer connection between “natural” and institutional learning settings. Tools that in an academic setting model and visualise practice have been introduced in educational institutions because they afford the exemplification of various phenomena. The use of video as a tool to mediate classroom practice in the reported examination design may be seen as an example of this. Säljö (2005) points out that the use of tools like these is a common method for facilitating learning in the institutional setting (p. 135). Creating models or imitations of the phenomenon in question would potentially help the learner to conceptualise the practice in question. However, the use of such examples may also be misinterpreted by the learner (Säljö, 2005, p. 135).

Another tool that has a prominent position is language. It mediates various types of communication and makes it possible to gather and store knowledge orally and in writing. Moreover, an academic language has been established to support the

activities related to higher-order thinking. Vygotsky (2012) separated everyday (spontaneous) concepts from scientific ones, which he claimed to be more complex and difficult to learn. Ivanic et al. (2009) argue that writing in the academic context has its own particular characteristics and can be defined as a writing genre of its own. It is therefore reasonable to claim that an academic language is part of the higher-educational culture.

Students who enter higher education are expected to adopt to the culture found in higher-education institutions (Perry, 1999), which involves the mastering of such activities as reading texts, writing essays and solving tasks. The issue investigated here is no exception in this regard, which means that the pre-service teachers are engaged in various types of activities during their period at the university. Writing is also an important tool for educators. Many of their daily routines and actions are mediated through writing, and therefore the above-mentioned difficulties apply. Even though the position as an educator involves having some insight into the use of text for educational purposes, there may still be some difficulties. For instance, correcting and commenting on the examinations of pre-service teachers requires a concise and clear image of a “correct” answer.

By and large, there are many such characteristics in the higher-education context, and most of them affect the members of the institution. By engaging in this type of education, they will have the opportunity to appropriate knowledge that is specific to the setting. Drawing upon an analogy posited by Schön (1987), over time an actor will store a massive repertoire of images and understandings when taking part in a special environment. This is well known from the studies of cultures (Cole, 1998; Rogoff, 2003), and here this means that each student and member of staff establishes a way of acting in this particular context by interpreting the various elements they encounter.

3.6 Organisation theory framework

The organisational-life framework proposed by Brunsson (1985) may shed some light on the organisational aspects of the higher-education sector, as a basic set of concepts helps to create a general understanding of vital structures. According to Brunsson, organisations are a vital part of modern society (Brunsson, 2000), where organising and coordinating action can be broken down into some general principles (Brunsson, 1985). Even though universities and higher education in

general may not be considered as true organisations, analysing such entities is still relevant as the many similarities outweigh the differences (Brunsson, 2009, p. 62).

Brunsson (1985) proposes two main approaches an organisation can take to make changes: the rationalistic and impressionistic approaches. The first uses a systematic methodology to find the best solutions along rational-decision patterns and undertakes suitable actions based on these plans. However, as Brunsson argues, this step-by-step solution would leave the organisation less able to make necessary and timely actions. In contrast, an impressionistic approach is oriented towards making the necessary changes happen and is not bound to strictly rational processes. Such an approach has also been called “irrational” (Brunsson, 1985) since actions, and not rationality, comprise the leading principle behind the decisions.

Brunsson (2002) explains how various stakeholders in organisations sometimes have several demands that may be conflicting and contradictory, and thereby impossible for the organisation to fulfil completely. In such cases, a viable option for the responsible organisation is to satisfy its stakeholders by using its various forms of output to respond to the different demands. Brunsson (2002) uses political parties as an example to demonstrate this:

Hypocrisy is a fundamental type of behaviour in the political organization: to talk in a way that satisfies one demand, to decide in a way that satisfies another, and to supply products in a way that satisfies a third. (p. 27)

Talk, decisions and actions are here inconsistent, and will be seen as a display of hypocrisy.

Finally, hierarchy is a vital part of organisational life (Ahrne & Brunsson, 2019). Members are not equal in all senses, but some individuals or groups are given leadership over others. This is commonly decided by the organisational structure and is understood by its members. In the case of higher-education institutions, the relation between educators and students may be considered hierarchical. Even though this is not an example of direct leadership, some degree of power is involved.

3.6 The dual nature of the university

The introduced theories suggest that higher education can be perceived as both an institution and an organisation, meaning that its properties are aligned with both institutional and organisational ideals. This duality will be taken into consideration in the analysis and discussion.

The explored context can then be described as a place where learning is organised in subject-specific courses and programmes that are usually concluded within a given timeframe and lead to a pre-defined certification. Some components of this context originate from a historical background when universities were more autonomous, while others may have been introduced or altered by organisational structures.

The video examination that has become part of this system is meant to promote and monitor learning, and this tool for assessment is sanctioned by awarding grades. The duality between institution and organisation is visible in this practice. Examinations are the results of traditions (Gipps, 1999), but also tools used to fulfil organisational principles. Institutions are responsible for credentialing, formalising and documenting the transfer of knowledge as a vital part of the educational practice (Olson, 2003, p. 101). As with other socio-cultural tools, examinations cannot be considered to be neutral instruments, but are tools of power and part of a practice with conflicts and tensions (Havnes & McDowell, 2007).

There is a distinct difference between the members of higher-education institutions. Different rules, monitoring tools and sanctions apply to the various groups, and they will thus have different identities and objectives. They may even have different perceived norms and values. Educators are expected to be a catalyst in such fields as research, supervision and education. The student group deals with different expectations, for instance that they should adopt certain routines like attending classes, reading the course literature, engaging in group work and preparing for examinations.

3.7 Analytical strategies

The aim has been to find a suitable analytical strategy to answer the three-fold question concerning the (a) pre-service teachers' and educators' responses to the video-examination, (b) how their responses align with the intentions of the

examination format, and (c) the characterisation of higher education as a context for change of examinations. The applied theoretical perspectives and tools will be outlined below.

The research project has centred on three different aspects of the video examination and its implementation. In the first study, a group of pre-service teachers were interviewed to find out how they perceived the examination format and how they responded to it. Their answers provide some insight into what kind of tools they reported they were using and what actions were mediated. In the second study, a sample of examination reports was investigated to find out what kinds of teacher-relevant knowledge were displayed. A main issue here was to see if the examination format afforded the demonstration of knowledge in various ways. The third study was another investigation of written material, namely the examiners' feedback to the pre-service teachers after assessing the video examination. The intention was to find out how the examiners approached the task, and what advice they would give the pre-service teachers.

These three studies have provided interesting insights from various angles, but their connection to the greater whole is yet to be explored. The upcoming analysis will therefore attempt to combine and make sense of the studies as parts of the same context. The theoretical lens will be used to focus on how each of the actors and their actions are embedded in a nested system. The aim is to explore how the various actors make use of available tools, what affordances the tools have and how the mediated actions promote their goals. Furthermore, bringing the various contributions together may give insights into the institutional and organisational properties of higher education. Using the framework suggested by Brunsson, certain structural aspects of the context in which the video examination is embedded will be explored.

A productive route for navigating the upcoming study is therefore to review the findings of the three studies, with special attention placed on the concepts of tools, affordances and mediation. Thereafter, the salient findings in this first stage will be interpreted in light of the various proposed levels of operation.

4.0 Method and design

This chapter will explain the methodological approach for and considerations made in the current research, such as choice of perspective and ethics.

4.1 The background of the research

The aim of this study was to investigate innovations in higher education, where the use and implementation of digital technology had a vital role. The explorative approach used means that the findings have been conceived within a context of discovery (Hanson, 1958).

The process of finding a suitable case started with mapping possible instances according to a number of criteria. For instance, the project had to be available for investigation so relevant data could be accessed. This is an important issue because if there had been a high degree of secrecy about or personal interest in the content, this would have been a potential source of difficulties for the research. Of course, potential benefits were balanced against potential impediments. To follow the advice of Pryor (2010, p. 166), it is wise to look for an intersection between the practical and the desirable. Bearing this in mind, the time horizon was also an aspect to consider for ensuring the feasibility of the research. Thus, the case in question had to be something already started and in progress, preferably where the data material could be collected right from the start. As the timeframe for this thesis is three years, several delays in the process could undermine the viability of the project.

Bearing these criteria in mind, the search resulted in a number of potential cases where the video-examination design showed the most promise. This test format had been recently introduced at the University of Oslo as an regular part of teacher education, and as mentioned above, it involves both a digital solution and a video case that is part of the test. This design was developed by the Norwegian Centre for Professional Learning in Teacher Education (PROTED) and implemented by the Department of Teacher Education (ILS) as part of the ordinary studies programme. This case was promising in many ways because it involved teacher education, use of technology, assessment, and to some degree, the higher-education system as the context. New, digital examination formats are on the verge of taking over analogue formats in the Norwegian education system (Ørnes, 2011,

2015), and an investigation of such a concrete case of new formats is therefore quite relevant.

The formal agreement made with the University of Oslo with respect to investigating the video-examination design brought with it some restrictions, and the work was also part of a collaborative venture between the University of Agder and the University of Oslo. The agreement opened for collecting necessary data, provided that the project satisfied all formal criteria and was approved by the Norwegian Centre for Research Data (NSD). The document was signed in June 2015 (Appendix 2), and the planning of the final design commenced.

In hindsight, it could be argued that the process of mapping potential fields of research took too much time and should perhaps have been prepared in advance. However, there were considerable benefits from establishing a proper basis for investigation. Since the video-examination case touches on several relevant topic areas, there are many angles from which to approach the topic. Most of these topics are also quite interesting for policymakers, educators, students and technicians, which adds to this investigation's broad relevance. A research horizon like this also coincides with the basic intentions of the Norwegian research ethics committee (Den Nasjonale forskningsetiske komité, 2006, p. 99), which requires that research serve societal interests.

4.2 Decisions and design

The video examination introduced at the University of Oslo had a format none of the involved student teachers had encountered before, and in most cases likely represented a novelty for the educators or assessors as well. The implementation of a new examination design created a disruptive and quasi-experimental situation, where elements were introduced or altered to investigate the responses (Bryman, 2012). Without placing too much emphasis on this aspect, it did mean that there was a range of issues that could be of interest for investigation. For instance, it is relevant to ask how the examination design was made, what the video-case was supposed to illustrate, how the educators perceived the new mode of assessment and so on. There were, in other words, enough perspectives to conduct several studies, but feasibility, and the time and resources available were limiting factors. With these considerations in mind, the study was restricted to elaborating on a few related core topics that were believed to cover some of the most relevant aspects.

The plan was to review the work in several articles, and therefore the investigation had to be divided in separate focal points. At the same time, these had to be part of a comprehensive whole and part of a synthesis. A possible solution could be to follow some of the same logic as in grounded theory (Bryman, 2012; Strauss & Corbin, 1997), where an initial inquiry would constitute the development of the subsequent steps. Inspired by this line of thinking, the research design took shape as three separate research projects, each using the former study as background, but approaching the topic from a different angle. In the decision-making process, aspects such as timing and consent of the involved parties were important, but other factors, such as actuality and probable outcome, also play a major role. The final design is described below.

4.2.1 Part 1: The student perspective

One important aspect of the implementation of the video examination, and pre- and post-processes is how the student teachers perceived it and the ways in which they responded to it. The concept of “consequential validity” (Boud, 1995) was taken into use in the investigation because a new test approach can alter the student teachers’ approach to learning. The initial interest of this first study was thus to investigate how the new video examination affected the students’ preparations for it and how it was later revised to address more general experiences of this new examination format.

4.2.1.1 Research problem

Since the video examination situation was something out of the ordinary for the student teachers, it was interesting and important to find out how they had reacted to the situation. As mentioned above, with access to all kinds of resources, they were instructed to watch a video of a genuine classroom situation and analyse it in light of the theoretical literature in the study programme. The research questions thus focused on three aspects of the reported responses, namely the preparation they made in advance of the examination, the resources they used during the examination and how they compared the examination to other known examination formats. Drawing on a socio-cultural perspective, cultural tools and mediational means were seen as important elements in the process both before and during the examination (Wertsch, 1991).

4.2.1.2 Method of investigation: Interview

Different methods were found to be relevant for the investigation of this issue, for example observations, ethnographic studies and interviews. The latter method was preferred because interviews might reveal in-depth first-hand experiences. Moreover, the personal interview is a method that is more flexible in terms of time and space, which in this case could be a definite advantage (Kvale & Brinkmann, 2009). Compared to the other mentioned methods, the interview is dependent on the interviewee and the number of details he or she might provide. The limitations come from the fact that unconscious actions that are understood as habitual, sometimes called invisible mediations (Moll, 2013, pp. 35-36), may be omitted from their descriptions due to their lack of awareness. Blind spots like this could reduce the value of the interviews, and it is therefore incumbent on the interviewer to elaborate on issues that arise and pose the right questions. Considering all such advantages and disadvantages, interviews were chosen as the stand-alone method in part one and suited the explorative nature of the research project and the issue of feasibility.

The informants in this study were recruited from a class of student teachers recently starting on their fourth year of studies. All of them had sat for the video examination some five months previous and were thus in a position to recall most details about the process. While the timing was not ideal, as they were already concentrating on the next upcoming examinations, this was the best option within the bounds of the project. Nonetheless, the impressions they still had of the video examination were sufficient for shedding light on the topics of interest. Two seminar groups, consisting of approximately 40 students each, were approached and introduced to the project. They were given the information they needed to decide if they wanted to participate, both orally and in writing (Appendix 7). This first round included details about the purpose of the research and the practical implications it would have. Initially, 16 volunteered to participate as informants and wrote their names and contact information on a list. However, when it came time to set the dates for the interviews, six of them withdrew. One additional student was recruited later, so in the end there were eleven informants.

The interviews followed a semi-structured design (Hesse-Biber & Leavy, 2006, pp. 125-126; Kvale & Brinkmann, 2009), with a set of open-ended questions to encourage the informants to speak freely. This also gave the interviewer the

necessary degree of flexibility to keep the conversation centred on the chosen topic, and the freedom to probe into issues as they arose. The interviews were conducted at the institute the students were attending, which might have been an advantage in terms of reducing potential stress. However, the interview situation itself seemed to make some of the students somewhat nervous, which is to be expected. The majority had few problems expressing themselves, while a few had to “warm up” before the conversation began to flow without too much hesitation.

The interview guide (Appendix 3) started with a few questions on issues the informants could talk easily about. For the most part, this seemed to function quite well, and some of the informants even talked in length about the teaching profession and their teaching philosophy. Following this, the interview guide was narrowed down to focus on the research questions and areas of interest. This included, for instance, how the student teachers perceived the examination design beforehand, and how they prepared for the challenge. Some of the informants gave short answers to the questions and seemed to expect that the interviewer would follow up, while others were close to unstoppable.

For several reasons, for example lack of time and opportunity, the interview guide was not piloted. Looking back, this should probably have been done as a number of issues of interest emerged during the first few interviews that could have been explored in more depth. Piloting would have provided the insight needed to edit the interview guide and thus yield richer material. Re-interviewing informants was also an option, but the benefit this might have given was not considered vital to the study.

All eleven interviews were recorded on a Dictaphone. In anticipating any defects or errors in the recording, a smartphone was also utilised as backup. The interviews were stored on the Dictaphone and later transferred to a computer for transcription. All the recordings have later been deleted for personal data-security reasons. The length of each interview varied from approximately 20 to 50 minutes. The duration was somewhat dependent on how each informant responded to the questions; some were quite talkative, while others answered each question succinctly with few reflections or digressions. The pace of their speech varied somewhat, and often the informant took time to think during the interviews. The material was then transcribed into full-length text.

4.2.1.3 Analysis of the interview data

Hesse-Biber and Leavy (2006) suggest that interview data can be analysed within the frames of three categories based on an ontological point of view. For this case, the constructivist category seems to be the most suitable because of the way the data has been processed. The interviews were mainly analysed in the transcribed form, i.e., documents providing a text version of the conversation. The analysis comprised several steps, where the first involved taking notes on what was said. An initial read through gave a general impression of what each interview contained, and at the same time, which topics could be used for later coding. It is possible to characterise this method of analysis as a stance between data-driven and concept-driven coding (Gibbs & Dunbar-Goddet, 2007, pp. 44-45), which would mean that some of the codes originated from the initially used topics. It would appear that most answers were reflections on the questions asked, but at the same time, unanticipated topics emerged from time to time. After organising the notes, some ideas for codes became more evident and had to be tested in a second reading to see if they could be used. A process like this has been described in the research literature as a spiralling rather than a linear process and requires an iterative process with analysis and re-analysis (Hesse-Biber & Leavy, 2006, p. 289). The next step involved the use of revised codes to analyse the material as a whole, and thus some patterns could be identified. Exploring these patterns further resulted in some findings, while others had to be rejected as they lacked sufficient legitimation in the data. At the same time, some interviews were deemed to have interesting, unique qualities that might serve as contrasting cases for illustrating the above-mentioned findings. These were described and analysed further and brought to the foreground to illustrate some points in the article.

4.2.1.4 Validity and reliability of the study

As a constructivist logic is followed here, the line between ontology and epistemology is somewhat unclear (Guba & Lincoln, 1989, p. 109), and thus the role of the scientist is not to be objective (Silverman, 2001, p. 87). This is the main reason why many find that establishing validity and reliability is challenging, at least if these two terms are understood in a positivistic sense (Kvale, 1989; Polkinghorne, 1989). For some researchers, the alternative has been to change the terms (Golafshani, 2003), replacing validity with “trustworthiness”, for example (Østerud, 1998). This thesis uses the terms validity and reliability, but they are

interpreted somewhat differently from how they are understood in “hard” science. Instead of referring to the quality of measurement, validity and reliability are here interpreted to refer to the quality of the entire process, from planning to how the findings are reported (Kvale & Brinkmann, 2009, pp. 253-254). The outcome of the research is here partially dependent on the researcher and his active role in the construction and interpretation of the data. Consequently, this role and possible biases and prejudices must be questioned (Silverman, 2001). It is part of human nature to be guided by one’s own beliefs and convictions, and instead of suppressing them, this aspect should be taken into account during the research process. Kvale (1989) claims that *to validate is to question*, which would involve several rounds of self-reflection in the research process, especially in connection with the issues that are known to be of importance to the quality of the research. This has been implemented here as a principle to guide the reader through the various decisions that have been made.

Concerning this first part of the research, some methodological aspects should be considered. For instance, the low number of volunteers made it impossible to select informants according to different backgrounds, gender, age and so on (Hesse-Biber & Leavy, 2006). Since all of the informants were volunteers, this might even lead to a possible bias, as posited by Rosenthal and Rosnow (1975), who found that volunteers tend to be resourceful people with particular characteristics, and that might be the case here as well.

4.2.1.5 Ethical considerations

All the informants were supplied with the necessary information about the project in advance; there was no coercion nor misleading information to encourage participation. The project was reported to the Norwegian Centre for Research Data (NSD) well in advance of the interviews, (Appendix 6), and it was also approved in good time before commencing the interviews (Appendix 1). The recordings, list of students and other identifiable data were anonymised and also deleted on completion.

The data retrieved from the interviews were treated with care, and therefore all subjects were presented as respectfully as possible. When creating a history like this there is always the risk of reveal too much of their identity, and the presentation could potentially be seen as troublesome. In this process, some less

significant details were altered to guarantee the anonymity of the informants, and all controversial topics were treated carefully.

4.2.2 Part 2: The examination reports

Since the first part examined the experiences of the students, the second part probed more deeply into its findings to explore how the students actually solved the video-examination tasks. Some of the possible approaches here could be to investigate how they analysed the video, what the parts of the videos they deemed relevant and how they justified their selections of events. As the video-examination design was an unfamiliar format that they had no prior experience of, this potential challenge might lead to several responses. As seen in the first part, the students reported having a variety of approaches to the examination, and this could have led to different responses to the tasks. From an educator's perspective, it was also interesting to look more closely into which theories the students applied, and what kind of research problems they formulated. This video examination might elicit other answers than what are produced with the ordinary written task format and could represent a disruptive technology in this regard. In other words, there are several issues for the research to shed light on.

To study these issues the researcher must investigate either the students' perspectives or the written answers to the task, or both. The examination reports were readily available material to work with since they are anonymised and stored digitally. According to the regulations, there is no need for a formal application to investigate such data, which increases the feasibility of the study. As the students who were interviewed in part 1 provided rich data about the student perspective, there was little reason to involve another group in a follow-up investigation.

The administrative staff at the Teacher Education Department (University of Oslo) selected the examination reports for this study, choosing a random sample based on some suggested criteria. These criteria were based on characteristics of the candidates, for example what subject specialisation they had and what grade they achieved on the examination. A total number of 21 examination reports formed the material for this study.

4.2.2.1 Method for investigation: document analysis

Document analysis, which has been the sole method used in both parts two and three of this thesis, can be defined as a “detailed examination of documents produced across a wide range of social practices, taking a variety of forms from the written word to the visual image” (Jupp, 2006, p. 79). In this case, written material from the institutional practice of high-stakes testing has been investigated.

Document analysis is seldom used as a stand-alone method, which is something that Prior (2003) finds to be odd because written material has a quite dominant position in most areas in modern society. Even though such methods have been used frequently in recent studies (Tight, 2012), the sources are commonly official documents, such as policy statements and government reports. This may be due to the prominent position critical discourse analysis has in sociology and communication studies (Winther Jørgensen & Phillips, 1999). At any rate, the institutional context has many available sources for investigation, and most of the activities taking place there are dependent on different types of documentation.

Four quality criteria measures are used when researching documents: “authenticity, credibility, representativeness and meaning” (J. Scott, 1990, p. 66). Since the examination reports can be traced back to the source, the origin is known, and there should be few reasons to question their credibility. However, one fundamental issue that is relevant here is whether the material is suitable for answering the research questions (Duedahl & Hviid Jacobsen, 2010). Unlike other situations where document analysis is applied, the material consists of several documents, written by different authors, which cover the same issue. All in all, however, the data provide an opportunity to find tendencies and patterns across different documents. The chosen sample of 21 examination reports should be a representative selection, but there is always the risk that they are not. To reduce possible bias, a larger sample could have been obtained, other criteria for sampling could have been used or the methods for randomisation could have been changed (Ringdal, 2007, pp. 96-100). These are considerations usually related to quantitative research methods, but still applicable to ensure a representative selection in this study.

Furthermore, the examination reports that were analysed in part 2 of the project can be said to represent the candidates’ performances, affected by the conditions

under which they were written. The material is anonymous, no names are used, and since it is written in a digital format there is no handwriting that could have been used to reveal the identity of the author. There may be some writing characteristics, such as misspellings and styles, but apart from this, there is no indirect information about the writer.

4.2.3 Part 3: Feedback from assessors

As a part of the video-examination design, all students should be given written feedback from the assessors after the examination. Considering the question of summative and formative assessment methods, feedback like this could be interpreted as a step in a desired direction. Apparently, providing feedback has become increasingly common for digitalised examination formats and might also be the rule rather than the exception in the future. Moreover, feedback will give the students the necessary insight into which criteria they are measured by, which is also a formal signal of what is regarded as important.

Bearing this in mind, there are several reasons why it is important to examine the feedback given to the students. What have the assessors emphasised, are there suggestions for how to improve, and, if so, what do these suggestions focus on?

As part of the formal agreement with the institution, the material was collected by asking the Teacher Education Department at the University of Oslo for access. As some of the feedback has been written in an abbreviated way, with brief comments, it was deemed reasonable to analyse all of them, giving material consisting of three years of assessment with feedback.

4.2.3.1 Method of investigation: Document analysis

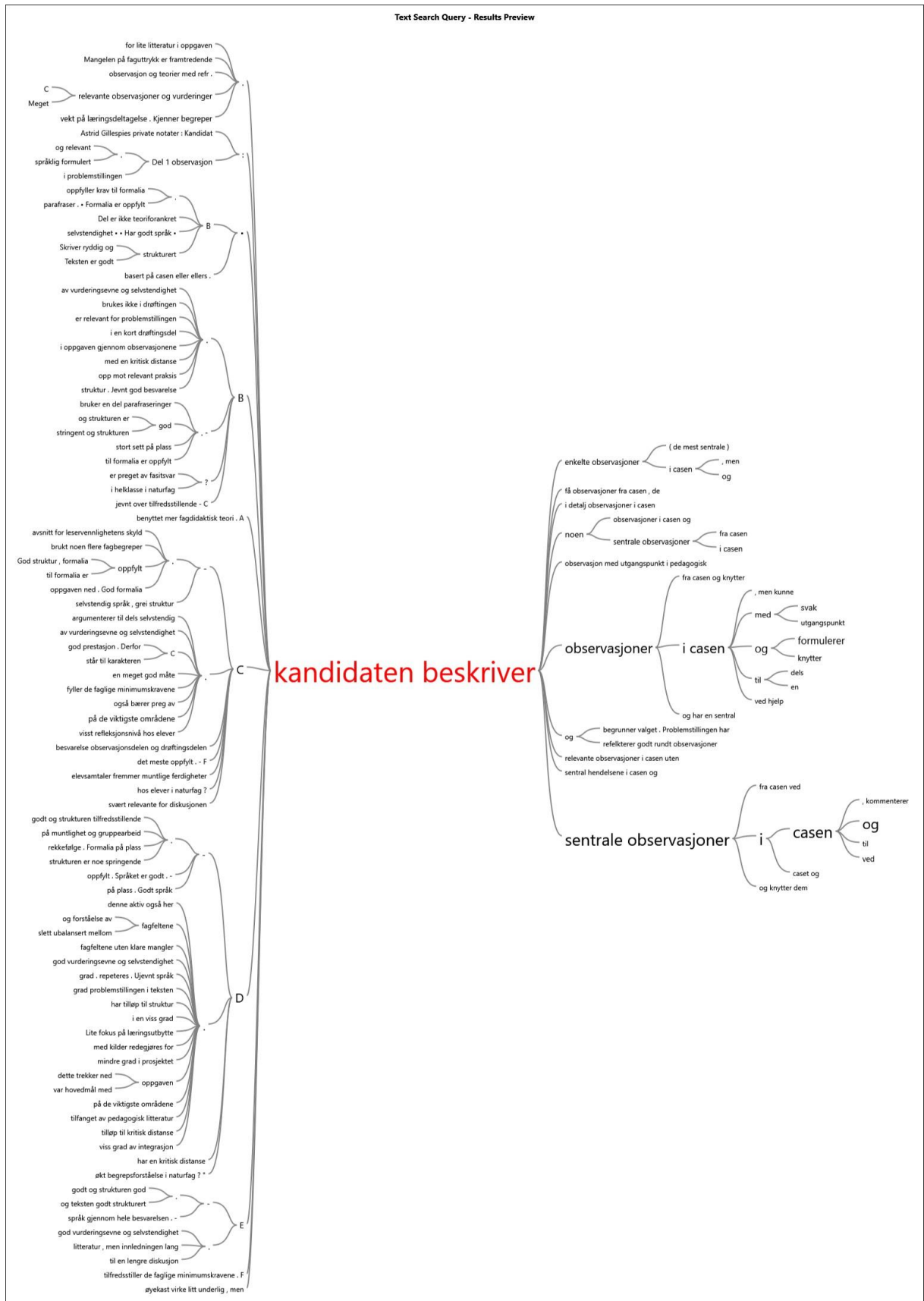
As in part two, the preferred investigative method is to analyse the written material, which was the feedback that was given. The written instructions all assessors received before the examination are also analysed here as they are the foundation for their work.

Using the same four quality criteria measures here as in part two, many of the same points are relevant. For instance, the representativeness of the data is based on both the content and the selection of acquired material. Based on the above-mentioned research-interest, the content would most likely give the answers needed. The

feedback given from the beginning of this video-examination design was available for analysis, which would ensure a fair degree of representativeness.

N-vivo software was used to analyse the research data, and some functions proved to be helpful in this work. Finding tendencies in the material could have been done manually, but since the feedback contained a number of similar and repeated phrases and expressions, it was beneficial to undertake a computer analysis. Several approaches were tested, where “word frequency” appeared to be especially useful in the search for particular elements in the texts. N-vivo is able to recognise words, alone or in conjunction with others, and counts the number of times they occur in a given text. In this approach, the feedback was analysed in one respect, which was then analysed further using “word trees” or “word clouds.” These are a visual display of the result of a word count, and in “word trees,” the word or expression is presented in the various contexts in which it occurs. For instance, Figure 1 represents a quite complex word tree where the expression “kandidaten beskriver” (the candidate explains) is presented with all the occurring combinations of words.

[Figure 2. A word tree generated by N-vivo on the basis of the expression “kandidaten beskriver”. Written in the original language, Norwegian]



The branches represent the possible combinations, and the size of the fonts indicates the frequency of the words used. This tool visualises tendencies in the material and enables the user to obtain an overview of a large amount of text.

5.0 Summary and discussion

This chapter begins with a presentation of the three research projects, and continues with an attempt to find answers to the research questions:

- How did the pre-service teachers and educators respond to the new examination design[micro]?
- In what ways do these responses align with the intention of integrating knowledge of practice in teacher education [meso]
- What characterises teacher education as a context for innovation and change of examinations [macro]

The overarching implications for research methodology, theoretical development and empirical studies will also be discussed.

5.1 The three research studies

The empirical material is presented in three reports that are reviewed here in chronological order. While these reports will address issues at various levels of operation, some of the findings may be relevant for all of them.

5.1.1 Article 1: Pre-service teachers' experiences with a digital examination design: The inter-relation between continuity and change in an institutional context

[Authored by Erik Adalberon, Trond Eiliv Hauge and Roger Säljö, published 2019 in Acta Didactica, 19 pages.]

This article reports on a qualitative study where 11 pre-service teachers shared their experiences of the digital video examination through semi-structured interviews. The aim was to shed light on the following research questions a) “what resources and tools do the pre-service teachers report drawing upon when preparing for and completing the digital examinations”, and b) “how do the pre-service teachers interpret and reflect over the digital design and its affordances compared to traditional examination formats in higher education?”

Using a socio-cultural framework, the study focused on how the pre-service teachers utilised and adopted tools when encountering the video-examination design, but also how they reflected on its new affordances. After transcribing and analysing the data material through coding, some of the salient findings in this study were:

- The pre-service teachers were mainly positive to the new format

- They drew upon existing knowledge of examinations to find a viable strategy in advance
- Writing skills were considered vital for demonstrating knowledge
- The possibility to collaborate with peers during the examination was found valuable by some
- They reported lacking experience in video analysis
- Some of them reported writing text in advance for use during the examination
- They expressed that they wanted in-depth feedback afterwards

These findings illustrate how the introduction of a new examination format with a new set of affordances generates a multitude of responses from the students. Some may be possible to predict, while others were quite surprising. For instance, writing skills is a known and quite common issue for students in higher education, while the use of pre-written text is an approach that has not been described before. In all, the various range of solutions they reported suggest that the affordances of the examination design allowed the pre-service teachers to be creative and innovative, probably beyond what the designers had intended.

The conclusion of this study suggested that the video-examination format is well-received by the pre-service teachers, but that the novelties, and uncertainties they cause, drives them to find alternative ways to respond. Apparently, such development and evaluation must be carefully planned with respect to the existing learning culture from which pre-service teachers and educators draw their current experience and should be accompanied with sufficient preparations.

5.1.2 Article 2: Affordances of a video examination: Opportunities for pre-service teachers to demonstrate professional knowledge of teaching and learning

[Authored by Erik Adalberon, published in Educational Theory and Practice in 2020, 18 pages.]

The second article reported on a study of pre-service teachers' written examination reports. A selection of 21 reports was analysed to ascertain if the pre-service teachers were able to demonstrate various forms of teacher-relevant knowledge. The research questions were a) "what categories of teacher-relevant knowledge

were discernible in the examination reports”, and b) “at what stages of the examination were the different types of knowledge discernible?”

The method in this study was qualitative content analysis. Based on socio-cultural theory, the interest was to categorise and analyse the content on three categories of teacher knowledge suggested by Cochran-Smith and Lytle (1999): knowledge-for-practice, knowledge-of-practice and knowledge-in-practice. This conceptualisation involved a differentiation between types of knowledge. The theoretical knowledge needed for practice is counted as one such domain, acquired knowledge teachers have of practice is another, and finally the reflections they make when integrating the two is knowledge-in-practice.

The findings were centred on two main points. First and foremost, the pre-service teachers demonstrated that they were able to apply all the suggested types of knowledge to analyse the video. Although their knowledge-in-practice was only visible in glimpses, it was still an important part of their answers at this stage of the examination. In comparison, in the second step of the examination, where they were prompted to discuss a self-composed problem statement, their answers were mainly based on knowledge-for-practice. This part was also written in a different style, where citations were used frequently, and the answers were also longer in general. The video-analysis task gave a broad range of responses from the pre-service teachers. It would seem that the video mediated a wide range of experiences, and some situations in the video were even interpreted in totally opposite ways.

In theory, the video examination was intended to be a format for assessing the pre-service teachers’ practical knowledge of teaching. Their examination reports reveal that they used knowledge-in-practice sparingly compared to the theoretical knowledge-for-practice. The conclusion was therefore that the video examination has a potential to make practice-relevant dimensions, but that it is not yet fully developed or supported to be a rich opportunity to demonstrate teacher-relevant knowledge.

5.1.3 Article 3: Providing assessment feedback to pre-service teachers: a study of examiners' comments

[Authored by Erik Adalberon, published in *Assessment and Evaluation in Higher Education* 2020, 14 pages]

The final article reports on a study of assessment feedback to the pre-service teachers after the video examination. One of the main aims of the innovators was to implement the video examination as part of a package based on “constructive alignment” theory (Biggs, 2014), where various elements in the course should be mutually supportive. In the present case, all pre-service teachers received brief feedback from the examiners which gave them better insight into the evaluation process. The interest was therefore to find out a) “how was the feedback organised”, b) “what characterises the written content” and c) “what kind of information does the feedback provide?”

The theoretical background was based on socio-cultural theory, and more specifically, on Vygotsky and his notion of language as a communication and thinking tool (Vygotsky, 2012). The data material consisted of 411 written feedback texts provided over three years (2014-2016), which meant that various examiners had been involved in the process. Content analysis was used to find structures, word clusters and general content. The latter was based on previously established categories (Hughes et al., 2015; Ivanic, Romy, & Rimmershaw, 2000).

The findings were that although the feedback was written by different examiners during the investigated period, some structures were evident across the feedback texts. For instance, the feedback was presented in five pre-defined categories pertaining to the grading criteria, and the content was clearly based on similar phrasing. Most of the comments could be traced back to the grading criteria, national standards and the formulations seen there. The similarities between comments were so striking that texts appear as if they were copied. This suggests that the examiners based their comments mainly on official sources, and not their own personal evaluations of the content. However, some idiosyncratic comments were found in the material, indicating that the formulaic way of providing feedback was not always sufficient. In these comments, additional justifications for grading surfaced, giving further insight into how the examiners assessed the examination.

In light of the recent focus on feedback as a source of learning, this study raised some important questions about the process of providing such information. While the formulaic approach that was found in this study may be a reliable and time-saving method, due to the apparent copy and paste way of providing comments, the learning value of such feedback is at best questionable.

5.2 Educators' and students' responses

Each of the reported studies contributed new insight into how this novel examination format affected the users and their responses. Several aspects are worth exploring further on this micro level of operation.

The pre-service teachers appear to be well acquainted with the higher-education context. In the interviews, they discussed work procedures, tools and social practices within this frame as a very natural part of their identity as a student. Writing and the academic writing style were clearly a concern for most of them and were believed to be a key part of demonstrating knowledge. Furthermore, the second study of their examination reports revealed that they also knew how to write using the correct terminology and proper in-text citations, much like what Nesi and Gardner describe as “polished texts” (2012, p. 24). The pre-services teachers' goal for studying was clearly to become teachers, but most of them expressed that they wanted to deliver decent performances on examinations.

Therefore, the video examination was seen as a new challenge for the pre-service teachers. In some ways, this was a familiar tool with written components and predictable frames that resemble previous examinations, but at the same time, the use of vignettes showing genuine teacher-training situations was not known from before. This tool is not something they knew from before and represented a set of new ways to mediate their knowledge. An analysis of how they responded will be made in terms of altered affordances.

5.2.1 Affordances of the video examination and the actors' mediated actions

The video examination can be characterised by its many discernible affordances, and the pre-service teachers were able to identify qualities that opened for various types of mediated actions. For instance, there were liberties they could take that they recognised as beneficial, while the time constraint of four hours was seen as challenging. Many drew upon knowledge of previous examinations and what they

know about the affordances. For instance, several of the pre-service teachers knew that regular home examinations afforded use of literature and collaboration with peers, which affected the way they prepared. They gathered notes, wrote searchable documents and organised the literature for quick reference during the time they had available. Concerning the collaboration, about half of them reported to be collaborating with peers, and only during the video analysis part.

The analysis of the video vignette also enabled them to use experiences from teacher training. Several of the pre-service teachers noted that it was possible to write texts about theory in advance and paste these excerpts directly into their report as the digital format in combination with an open-ended task afforded such actions. This apparently helped them to cope with the time constraint of four hours, which they did not find to be sufficient for an optimal performance.

All these affordances contributed to a rich examination format, and created a substantial “mediational outcome space”, where several types of mediated actions were possible.

The actors’ mediated actions can be seen as a function of their goals and the perceived affordances of the video-examination design. For instance, since writing still was a major mediator for knowledge in this examination, they believed that their writing skills would affect their performance significantly. The pre-service teachers’ view on capabilities and experience of the use of language, and perhaps also mastery of the writing genre, would thus be vital for their hope of delivering a good performance. In turn, this was related to the emotional response, such as being concerned, stressed and so on, as seen in previous research (Erixon & Josephson, 2017; Kahu, 2013; Pekrun & Linnenbrink-Garcia, 2014). Finding solutions like writing text in advance, making searchable notes and collaborating with others during the examination are probably alternative paths to achieving their goals, and other ways to cope with the format.

The writing of text in advance is a particularly interesting response. By having a prepared arsenal of “polished texts” containing theoretical content and references, they were able to give an appropriate response to the task. This would involve browsing their pre-written texts and recognising a proper response rather than composing the content during the examination time. The double abstraction

believed to be part of the writing of inner speech (Vygotsky, 2012, p. 192) has been altered through this move. Since the writing has taken place ahead of the examination, the response is now partly the result of editing and composing, and thus a demonstration of such skills. However, the task of analysing video was not affected directly by this response. As seen in the second study, their examination reports contained more elaborate and theoretical answers to part two.

The pre-service teachers demonstrated that to some extent they were able to use the video vignette as a tool for drawing on their own teaching practice. The many qualities of video as a mediator of practice have been described in previous research, and bearing this in mind, the response here is not surprising (Blomberg et al., 2013; Hatch et al., 2016). The tool allows for a broad range of interpretations (Charalambous et al., 2018), and can therefore also be demanding to work with. Their lack of experience in this field limits their opportunity to make full use of its potential (Deeley, 2018). In theory, the mastery of tools comes with practice (Wertsch, 1991), which was visible in the study of pre-service teachers' answers. The need for proper training when unfamiliar technology is used has been reported as a common issue in higher education (Cubeles & Riu, 2018).

Several of the pre-service teachers interviewed in the first article also felt that their experiences of teaching were irrelevant for use in an examination report. Seen together with the limited use of knowledge-in-practice found in the second study, this may be an issue which impedes the intention of assessing the pre-service teachers' knowledge of practice. Although the format affords the use of such knowledge, several of the pre-service teachers apparently believed that theoretical knowledge-for-practice is the best way to demonstrate their competence. In previous studies of professionals and their practice, a common view is that putting knowledge into words can be challenging (Freidson, 2001). In the present case, it is not easy to determine if this is a widespread perspective among the pre-service teachers, and if so, how this came about. In addition to the difficulties of analysing one's own practice, the teacher-education environment and culture impacts the pre-service teachers' thinking. Something in this context seems to make them think that theoretical knowledge is valued more in test situations than knowledge acquired through one's own teaching. For instance, structures that reward the display of theoretical knowledge can be perceived, or this is a notion that the pre-service teachers have due to previous results.

Finally, the introduction of the video examination impacted the educators as well. Even though this study only explores the examiners' feedback to the pre-service teachers, it is obvious that a novel examination format must be interpreted and responded to by the educators. The provision of feedback was also an entirely new experience for the examiners, and as substantiated in the third study, there were inconsistencies for the actors. Considering that written feedback often is ambiguous and difficult for the students to interpret (Arts et al., 2016; Dowden et al., 2013; Van Heerden, 2020), this skill requires practice and time for examiners to master. The results of the third study demonstrate that the examiners chose to write the feedback in close relation to the criteria, which meant formulaic comments rather than individual response. It is thus possible to question what their intention was by doing so, and what value this full-scale provision of feedback had due to the lack of explanations and insight into the evaluation process.

In sum, all the involved actors are facing changes in this examination, and their solutions appear to be driven by their immediate goals like performance and accountability. The outcome is thus a diverse and unpredictable response rather than a uniform and predictable one.

5.3 The aim of constructive alignment

The background here is the intent to increase alignment between the various constituents in the course (Biggs, 2014). Much research underscores the need to consolidate the various elements in the education of teachers (Cavanna et al., 2020; Darling-Hammond, 2014; Korthagen, 2017), and assessment is often seen as one of the most important aspects in need of improvement (Allen, 2017). The video examination, in addition to structural changes in the course, was implemented as a response to an ongoing reform aimed at raising quality. It contained video elements that are known from research to highlight the student teachers' reflection skills, and potentially professional learning. Other projects report promising findings about using video for testing advanced skills (Wiens, Beck, et al., 2020; Wiens, LoCasale-Crouch, et al., 2020).

As seen in the first article, the new examination format was well received by the pre-service teachers, and they demonstrated that they were able to analyse the video vignette to some extent. It is possible to claim that the novel examination

format, and its new affordances, has introduced new impulses to the teacher-education field and that it reinvents what it means to demonstrate types of knowledge in a test setting. Glimpses of integrated knowledge can also be spotted in the pre-service teachers' examination reports, which suggests that this format may be a step forward in many ways.

At the same time, other actions reported by the pre-service teachers are not in alignment with and even counter to the intention of creating a coherent teacher-education programme. For instance, writing text in advance is not a response that the design was meant to elicit, and this can rather be seen as an example of how the various affordances of the examination were exploited. Answering an examination in this way means that the text is the result of editing rather than a product of internal in-the-moment reflection. Moreover, the new activity, video analysis, had apparently not been properly introduced and embedded in the course. As reported in other research (Alonzo & Kim, 2018; Hatch et al., 2016), most of the actors here were novices in this field, which meant that each actor had to figure out how to approach this novelty on their own. The multitude of approaches and lack of elaborate discussions on the video vignette suggest that there is still untapped potential in this area.

The examiners' feedback comments were also a part of the overall strategy of constructive alignment. This service is suited to give the pre-service teachers some insight into how their examination was graded, but as the results demonstrated, the comments mainly copied the phrasing of the grading criteria. This approach mediates two questionable outcomes. First, since video analysis was a minor element in the criteria, only a brief passage about the responses to the video was provided in the feedback. This signalled indirectly to the pre-service teachers that the video analysis was of minor significance for their performance. Compared to such dimensions as structure and writing style, it apparently counted equally as much. The second point is that the formulaic feedback may be closer to a closed comment than an inspiration for further learning. This style would perhaps be a feasible way of providing quick feedback due to the copy-paste affordances of digital text, but there are few of the nuances and insights necessary to convey a complex and meaningful message often noted in research (Hattie & Timperley, 2009).

Thus, it appears that the actions taken to achieve a constructive alignment have resulted in a variable outcome. Just as other researchers have warned, constructive alignment is not a straightforward task, and a mechanistic use of criteria may only create an illusion of quality (Loughlin, Lygo-Baker, & Lindberg-Sand, 2020). The concept of constructive alignment has been based on quite advanced pedagogical thinking, which mainly takes place between actors on the micro level of operation. An attempt to initiate the constructive alignment from the meso level of operation apparently requires close collaboration between all actors involved to make it work. If constructive alignment is to lead to success factors, the educators must have the ability to identify student learning. As Biggs (1996) stresses, academic requirements should prevail over administrative concerns, and he points out that managerial principles might “discourage qualitative approaches” (p. 361), which can be seen in the case here.

5.4 Characteristics of the context

The final issue here is an attempt to widen the scope and characterise the teacher-education sector as a context for innovation and change. Even though the current study does not provide empirical material that pertains to this level directly, some reflections on the macro level of operation and its relation to meso- and micro level will be made.

In general, the macro level of operation has a significant influence on higher education in a number of ways. The background for the current case is that a major reform has recently been introduced with the aim of improving the quality of teacher education (Kunnskapsdepartementet, 2013). Such processes can be seen in light of the rationalistic decision-making approach, which involves planned change. Like any other rational process, the actors behind reforms have certain intentions that they hope to realise (Brunsson, 1985). A general aim in this recent reform is to improve quality through new organisational models, such as changing teacher education to become a five-year master’s education.

The macro-level decisions will be filtered through the meso and down to the micro level, following a number of paths. One concrete example is when the wording of official documents, such as white papers, is understood differently in different institutions (Gynnild, 2011). In the current context, the quality reform and the formulations have called for new teacher-education programmes where the courses

and the content will be altered. Translation of centrally controlled reforms means that local adaptations will be present (Elken & Stensaker, 2018; Noda, Kim, Yung Chi Hou, & Chou, 2020), and result in concrete actions. The video-examination format is one result of implementing the national reform on the meso level of operation, and its content will be further negotiated by the actors at the micro level which is seen in this study.

Such filtering across levels in the organisation can also be noticed in this study when the standardised grading criteria (Universitets- og høyskolerådet, 2019) are used in the assessment feedback. The original intention behind such criteria was to establish common ground for understanding performances and grades. When translated to the meso level, these guidelines are used as a framework for the examiners' feedback where the content will be adapted to the topic in question. This negotiated result must then be interpreted further on the micro level where the pre-service teachers have to make sense of the wording. This journey from the initial meaning up to the interpreted result points to a connection between the larger context and the local actions, as seen in the study of Bearman et al. (2017).

It is important to recognise that the video-examination format has been developed in between the macro and micro level where various considerations have been taken into account. It was designed in response to a reform but is also meant to assess the pre-service teachers' knowledge in a more adequate way. This kind of duality means that the examination format is supposed to fulfil a number of expectations from various stakeholders, as seen in other research (Brew, Boud, Lucas, & Crawford, 2020; Noda et al., 2020). The video-examination format is suited to address problems found in teacher education, such as the relation between theoretical and practical knowledge and the integration of them. At the same time, the video examination fits the overall ambition of improving quality through new technology and innovative approach.

Operating in between these two different kinds of logic requires the actors to balance between them, a demanding task, as the meso level and result have the potential for conflict and contradiction, as other research has also pointed out (Brew et al., 2020; Ramsey & Khan, 2020). This gives grounds to suggest that one major characteristic of the context is an epistemic difference between the levels of operation. Structures established from a macro level are often built on the

rationalistic and organisational logic (Brunsson, 2002), but as demonstrated in this study, responses on the micro level are seldom based on the same input-output based model. Instead, much of the actions going on at this level of operation is a navigation between individual goals, emotions, creative responses and other aspects that constitute an organic whole. Potential mismatches between macro level ambitions and micro level actions are therefore quite likely to happen and may result in what Brunsson (2002) calls organisational hypocrisy.

5.5 Summary of the study and its implications

Examinations have been important components in the traditional university and have an important position in teacher education. Even with the change in roles and content introduced by the new formats, these kinds of tests are still turning points in learning processes, where students and educators commit much time, effort and attention. Examinations are clearly high-stakes situations through which performance is measured, progress will be decided and even the quality of the teaching is assessed. All in all, these tools have a prominent position and co-determine much of the activities at this level of education. Therefore, any changes should be made with care due to this pivotal role examinations have (Jones et al., 2020).

This study illustrates how a video-examination format may inspire for alternative thinking about assessment as an element in teacher education. Using video vignettes as a tool can help aligning campus-based knowledge and knowledge of practice in a meaningful way. However, potential downfalls exist, and the need to support all actors involved during the implementation process is obvious. To learn from previous attempts to innovate examinations, such as the portfolio (Dysthe & Engelsen, 2009), it is necessary to pay attention to the existing learning culture and the context in general. The various responses noted here illustrate how actors may handle new challenges unless they are informed and guided properly.

Furthermore, the study contributes to the current understanding of examinations, also beyond teacher education, by exploring how changes in examinations affect the actors. As illustrated in the findings, many of the responses have been influenced by what the new format affords, and how knowledge may be mediated. However, the relation between affordances and responses is not predictable to a major degree, and each change in the examination format may have a broad

mediational outcome space. For instance, the students' individual writing is often seen as a documentation of knowledge (Nesi & Gardner, 2012), but with digital technologies and new opportunities, the text can be constructed through various writing and editing processes both before and during the examination. As this study and other studies have shown (Hellas et al., 2017; Jang, Lasry, Miller, & Mazur, 2017), students are inclined to make use of the affordances presented to them. This makes the outcome hard to predict, and this will then have impact on how the educators and policymakers can plan for change.

Moreover, innovations of examinations appear to be demanding processes for the involved parties. As noted in this study, the pre-service teachers and the educators had to put much attention on and effort into finding adequate responses. Currently, there is much work still to do and adjustments need to be made before this new examination format can have a firm place in the learning culture. As seen in other studied contexts (Kolster, 2020a, 2020b), innovations will be adapted for and alter the context in which students learn, sometimes with unintended outcomes. The effects are difficult to trace to any great degree and may be seen more as disruptions in the students' and educators' work. While the video examination can add to the selection of available test formats, the process of adopting it is likely to take time.

Both the unpredictability of the actors and the efforts needed to implement innovations must be given careful consideration. Since the outcome is difficult to predict in advance, the result of innovations cannot be easily planned in detail. However, large organisations like those in the higher-education sector tend to base their work on rationalistic approaches. The actors in charge require decisions that are well-planned, and often accompanied by great visions for the future organisational work. Changes are often motivated by aspects that improve efficiency or quality in general, but the findings here imply that such rationalistic approaches are difficult to achieve. Brunsson (1985) argued that most organisations can overcome strict rationality by following an impressionistic way of making decisions. He suggests that the process should be inspired by existing knowledge rather than determined by it. In this way, leaders will not aim to predict the outcome directly and accept some degree of uncertainty when it comes to the final result. Trust should rather be placed in the actors on the meso level of

operation and their ability to balance the various considerations needed to achieve professional learning.

5.6 Theoretical and conceptual aspects

Socio-cultural theory and neo-organisational theory have been used for this analysis. While this research lens has had certain advantages, some shortcomings can also be noted.

First, socio-cultural theory is a flexible framework that can be applied to most situations where human action is at the centre of attention. The concepts of tools, affordances and mediation have the power to explain simple relations in a comprehensible way. To elaborate, the concept “affordance” is here understood as all perceivable qualities, and it has been especially useful in this case to point out the changes between existing and novel examination formats. At the same time, this kind of labelling can be seen as an over-simplification of human perceptions and actions. This approach comes with certain analytical advantages, such as drawing large lines in the learning culture, but also some disadvantages. One example of this is when the concept affordance is expanded to encompass most perceivable properties of objects and entities, which means that it is difficult to define precisely. In this way, no clear distinctions are possible.

By adding the mid-range theory from Brunsson (1985), organisational properties become more visible and substantial. Although it is not common to use socio-cultural and neo-organisational perspectives together for research purposes, this turned out to be an adequate solution here. The lack of precision mentioned regarding socio-cultural theory can be compensated for by using well-established theoretical frameworks from neo-organisational theory. Although Brunsson’s use of value-laden terms like hypocrisy and irrationality can be seen as normative, and perhaps not aligned to the descriptive nature of Vygotsky, they represent defined and applicable concepts for analysis. Instead of explaining the mismatch between talk and decisions through the socio-cultural framework with affordances, the use of the concept of hypocrisy provides an existing and well-described understanding of these phenomena.

6.0 References

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Article 1: Pre-service teachers' experiences with digitised exam design: The inter-relation between continuity and change in a institutional context

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Pre-service teachers' experiences with digitised exam design: The inter-relation between continuity and change in an insitutional context.

Abstract

This article reports a study of a full-scale digital exam in a five-year master program of teacher education in Norway. The innovative design involves observing a video case based on an authentic classroom situation and analysing the case in light of educational theory and subject content knowledge. All parts of this format are solved on a computer with Internet access. The study is centred on the pre-service teachers' experiences of this open-ended and unfamiliar testing format. More specifically, the intention has been to analyse (a) what kinds of preparations they engaged in; (b) how they solved tasks during the exam; (c) their reflections on this mode of examination. Interviews with 11 informants have been conducted, and the content is summarized in three selected cases, plus a thematic study across the interview sample. The results indicate that innovations like this are interpreted and approached against the background of pre-service teachers' expectations, and the open exam format engaged the pre-service teachers to draw upon a wide range of resources both when preparing and solving the exam tasks. It is, however, timely to question whether the introduction of the exam format, based on faculty interest and intentions, will have the intended impact on procedures for evaluation in an established learning culture.

Sammendrag

I denne artikkelen rapporteres en studie av en full-skala digital eksamen som har blitt benyttet i et femårig masterprogram i norsk lærerutdanning. Det innovative designet er en fire-timers nettbasert og digital eksamen som innebærer observasjon av en video case basert på en autentisk klasseromssituasjon, og en analyse på bakgrunn av pedagogisk og fagdidaktisk teori. Hele eksamenen besvares via en data med nettilgang. Studien er rettet mot studentenes erfaringer med denne åpne

og ukjente eksamensformen. Mer spesifikt er intensjonen å analysere a) hva slags forberedelser de gjorde, b) hvordan de løste eksamensoppgavene under selve eksamen, og c) refleksjonene de hadde etter en slik eksamensform. Intervjuer med elleve informanter har blitt gjennomført, og innholdet er oppsummert i tre case-studier samt en tematisk studie på tvers av utvalget. Resultatene tyder på at slike innovasjoner blir tolket og bearbeidet på bakgrunn av studentenes forventninger, og at de benyttet en rekke ulike ressurser for forberedelse til og gjennomføring av eksamensoppgavene. Det er imidlertid betimelig å stille spørsmål om introduksjonen av et slikt eksamensformat, basert på fakultetets interesser og intensjoner, vil ha den ønskede påvirkning på vurderingsprosedyrer i en etablert læringskultur.

This article is centred on the issue of assessing professional knowledge in teacher education and will focus on a specific case in which a new approach to examination is introduced in an established learning culture

The backdrop here, namely the education of teachers, is considered a complex process. Prototypically, general teacher education builds on learning in an academic setting and practicum periods in schools. On the one hand, students learn at university about the subjects, didactics, educational theory, evaluation and other fields that are relevant for the profession. On the other hand, they learn by being involved in practicum periods, in which the intention is that they apply and transform the knowledge acquired in the academic setting and simultaneously gain experiences of classroom teaching that will enrich their understanding of what the teaching profession is about.

The evaluation and examination of professional knowledge is an essential part of teacher education (Richmond, Salazar, & Jones, 2019; Schoenfeld, 2007; Stürmer & Seidel, 2015). There is a long history in academia of testing traditional academic knowledge through oral and written exams, projects and other paper-and-pencil activities (Gipps, 1999). Considering the complex nature of the profession, questions have been raised about the relevance of traditional formats used when assessing other aspects of the professional learning than the academic elements (Knight, 2002).

Several attempts have been made to create more dynamic ways of assessing professional knowledge in teacher education over time. For instance, the Teacher Performance Assessment (TPA) was launched in the United States several decades ago to assess pre-service teachers' classroom performance, and it has gained widespread acceptance (see Chung, 2008, for details). In addition, assessments of performative aspects of teaching have been attempted through competency-based tests, for instance by using videos to test the students' 'professional vision' (Stürmer & Seidel, 2015, p. 54). Along with comparable approaches to assessing teacher knowledge (for instance Lee, 2005; Wiens, Hessberg, LoCasale-Crouch, & DeCoster, 2008), these examples illustrate a variety of alternative attempts to capture the complexity of the teaching profession in examinations.

In this article, our focus is centred on another recent attempt to assess professional knowledge in teacher education. A digital full-scale exam design with video cases was tested out and introduced at a university in Norway in 2013 and has since become a mandatory test for the pre-service teachers. It can be described as follows:

- Solved online through a web browser with basic text editing functionality
- Individual exam with a four-hour time limit.
- Can be solved anywhere and all resources are allowed.
- The exam starts with a 10-minute (approximately) video case of an authentic classroom situation. The scene is taken from an upper secondary classroom, and the subject is Norwegian language. It is possible for the pre-service teachers to replay the video during the exam.
- The first task is to describe important observations in writing and analyse them in light of relevant theory.
- The pre-service teachers are thereafter asked to focus on a topic they have observed in the film and analyse it.
- Marked with grades A–F by two independent assessors. Counts as 40% of the total grade in a 20-credit course.

The exam format was developed to suit the recently reformed five-year master program in teacher education, and the overall intentions with the design were to make the academic study more relevant for, and more closely connected to, the teaching profession (Lund & Engelién, 2015). Our interest here is concentrated on the situation in which an innovative exam format, with new rules and affordances, is introduced to pre-service teachers. More particularly, the investigation will be centred on how the pre-service teachers perceive the novelties against the background of their previous experiences of examinations.

Analytical frames and research interest

Assessment procedures are often discussed in terms of design, validity and reliability, but, as argued by Boud et al. (2018), how assessment practices turn out is often dependent on the participants and the local resources available in the

specific setting in which they are deployed. Exam formats may be shaped to serve a certain purpose, but the environment in which they are embedded will determine the actual response. Regarding the digital exam we have analysed, our research interest is focused on how the pre-service teachers manage the new format, and how the affordances of the situation co-determine how they handle the exam tasks.

The general analytical background for this study is sociocultural (Säljö, 2001; Vygotsky, 1978), with an interest in the role of mediating tools and how pre-service teachers interact with the exam design and the tasks presented. From this perspective, an exam or test is conceived as a material and cultural practice rooted in what is a well-established learning culture that has emerged over a long time (Hodkinson, Biesta, & James, 2007; James & Biesta, 2007). The digital exam represents a disruption in the sense that the examinee has to handle various uncommon tasks. Instead of responding in writing to a set of questions, they have to comment on and analyse a video clip of classroom interaction. In the exam situation, they must decide how to describe the situation, what is distinctive about it from a professional point of view, and what conceptual tools are appropriate for analysis and problem solving. A process like this also implies writing a report that is quite different from traditional exams, and this may appear as a new genre of writing and testing for the pre-service teachers (Ivanic et al., 2009, p. 20; Prior, 2006).

Although learning cultures are believed to be dynamic, they are also considered enduring over time (Hodkinson, Biesta, & James, 2007). Hence, the introduction of new exam formats may cause tensions in light of the pre-service teachers' various expectations, and in particular, their 'assessment expectations' (Struyven, Dochy, & Jansens, 2005, p. 329). The pre-service teachers in this study are familiar with commonly used exam formats in the Norwegian higher educational system, such as written school exams, take-home exams, oral exams and essays (Ørnes, 2015). It is thus reasonable to believe that these formats are recognised and well understood. The pre-service teachers' approaches and expectations to such exams have emerged from previous experiences with such methods for assessing knowledge and their affordances.

The point of departure for this specific analysis is an interest in the pre-service teachers' responses and reflections around the new digital exam, and in particular what role resources and various tools played in their problem solving and task reporting. The study concerns significant aspects of this process: (a) the

initial phase of exam preparations; (b) the actual writing of their individual exam report during the exam; (c) their reflections after taking the exam. The research questions we seek to answer are as follows:

- What resources and tools do the pre-service teachers report to draw upon in when preparing for and completing the digital exam?
- How do the pre-service teachers interpret and reflect over the digital design and its affordances compared to traditional exam formats in higher education?

Assessment practices in professional education

Established exam formats have obvious shortcomings in the context of professional training (Knight, Buckingham, & Littleton, 2014), and performative and collaborative elements of professional competences will seldom be displayed and tested in these procedures. Even when the students use professional language (Mäkitalo & Säljö, 2018), several vital aspects of vocational performance are hard to ascertain through paper-and-pencil testing (Eraut, 1994).

In recent decades, the possibilities of assessing professional competence in alternative ways have increased due to developments in digital technologies (Court & Bamber, 2009). In areas such as health education, simulations and resources such as mannequins and virtual patients have been introduced to assess students' performance and skills in a challenging and clinically relevant manner (e.g., Boulet, 2008; Hulsman, Mollema, Hoos, De Haes, & Donnison-Speijer, 2004). Other digital innovations, such as virtual labs and virtual microscopes, also offer new settings for testing professional skills (Helle & Säljö, 2012; Petersson, Lantz-Andersson, & Säljö, 2013). The interactive nature of such resources enhances the opportunities for examining knowledge and skills, as students may be exposed to a broad range of problems that they have to solve in a dynamic and challenging environment.

The development in digital technology will provide new opportunities but also present new challenges in evaluation practices (King & Boyatt, 2015; Laurillard, Oliver, Wasson, & Hoppe, 2009; Voogt, Knezek, Cox, Knezek, & ten Brummelhuis, 2013). Important challenges to address concern educational cultures and prevailing pedagogies and forms of teaching, teacher beliefs and motivations

for reform. In general, the high complexity of study designs and programs also adds to the problem of consistency of Information- and Communication-Technology (ICT) use across institutional levels (Hew & Brush, 2007; Lawless & Pellegrino, 2007; Ottenbreit-Leftwich et al., 2012; Polly, Mims, Shepherd, & Inan, 2010). Although one recent report concludes that the implementation of ICT for assessment purposes is slow in the higher education context (Raaheim et al., 2018), some attempts to innovate are worth considering.

The use of video technology has shown promise in the context of educating teachers (Plöger, Scholl, & Seifert, 2018). According to Christ et al. (2017), who conducted an international study among teacher educators, different video methods facilitate different kinds of significant outcomes. For instance, Pape and McIntyre (1993) report on an early attempt to use video cases as part of evaluative practices, and they conclude that this design offers a way for students to implement their experiences in the context of realistic examples. In the process of analysing video cases, the abilities of students to observe and analyse instructional practices come into play. These are considered core skills for professionals and attempts to include such elements in exams have been tested in many teacher education programs (Blomberg, Sherin, Renkl, Glogger, & Seidel, 2014; Borko, 2016; Darling-Hammond, 2016). At a general level, the use of video technology in exam situations has similarities with the main ideas behind the paper-based case methodology in the sense that both support the development of skills related to integrating and contextualising theoretical and practical knowledge (Goldman, Pea, Barron & Derry, 2006; Masats & Dooly, 2011; Santagata & Guarino, 2011). However, it seems reasonable to assume that the multimodal and dynamic environment enabled by video documentation adds to the realism and professional relevance of the attempts to examine such integrated skills.

In sum, there are several reports of how technology, and video technology in particular, has been introduced in the context of examinations in teacher education. Each example sheds light on what the technology affords, and to some extent, the impact such a change in examination practices will have for educators and students. The intention of this article is to contribute to an increased understanding of this topic by investigating a case where teacher students have experienced a digital exam design that includes video documentation for assessment purposes in professional training. Since this example is part of a regular educational program, with high stakes for all involved parties, we argue that the insights provided will be of special interest.

The digital exam design

The backdrop here is a digital exam design, which is part of an integrated course of studies of education (pedagogy), pedagogical content knowledge (subject didactics) and school practice. In this program, the pre-service teachers must pass four other course exams of the integrated study program during their fourth and fifth years of education. These are given in formats the pre-service teachers know well, such as essays, reports, take-home exams and assessments of practical training in their placement schools. All these formal exam situations are intended to combine an assessment of the integrated use of theoretical knowledge of the different study disciplines with the experiences the pre-service teachers have had during their practical work in school.

The digital exam design is based on a video case of classroom teaching. It is framed by an open-ended task description, and the instructions in their exam papers read as follows (own translation from Norwegian):

The first part of the exercise begins with an observation, where you, based on relevant theory and with the use of relevant concepts, explain important observations in the video case. The next step is to formulate an issue that can shed light on how you as a teacher can work with one of the topics you have observed in the case, in your didactic subjects 2¹. Discuss the issue in light of educational and subject didactic theory. You can also bring in practicum experiences where they are relevant in supporting your argument. Refer to the case where it seems natural in the discussion.

This format is built on a set of general and formal requirements of writing (e.g., restrictions regarding the re-use of earlier exam work and peer assignments and instructions about how to make use of literature references and how to include citations). The pre-service teachers are allowed to utilise available literature, whether online or in books, and texts they bring with them as long as they follow accepted reference rules. In addition, the digital exam design allows the pre-service teachers to sit anywhere they like and to collaborate with others. In advance of the exam, they had access to an exemplar video for training purposes and were invited to a seminar in video analysis.

¹ The number pertains to the pre-service teacher's second subject specialization

Method

The unit of analysis in this study is the individual informant and his or her reported experiences of the exam design before, during and after the exam. To provide insight into these experiences, one-on-one semi-structured interviews were chosen as a favoured method for investigation. Compared to other potential methods like observation, a semi-structured interview gives insight into the informant's experiences of certain events and topics. The group of pre-service teachers was approached at the beginning of their fourth year and given information about the study before being asked to participate. There were 142 pre-service teachers in the whole programme, distributed over several subject specialisations: science (35), mathematics (6), Norwegian (L1) (23), social science (34), English (13), history (20), religion (4), Spanish (2) and German (2). Initially, a group of 16 informants volunteered to participate, but five withdrew before the interviews were about to start. Eleven informants were deemed to be a sufficient number to ensure that the results are not biased, except for typical 'volunteer subject' issues (Rosenthal & Rosnow, 2009). Our consideration is that non-volunteers would be difficult to reach in other research designs as well, and that a sample of 11 informants would accurately reflect the group of pre-service teachers. The informants we ended up with were nine female pre-service teachers and two male, between 22 and 28 years of age.

The interviews were conducted approximately six months after the digital exam in 2015. Due to institutional arrangements, our investigation could not have started earlier. The timing may not be optimal considering that the details of events may have been forgotten. However, most informants remembered vital events from their exam experience and were able to reflect on the whole process even at this point.

The interviews

After consenting to participate, the 11 informants were interviewed individually over three days. Semi-structured interviews (Kvale, 2008) were conducted using a pre-defined interview guide based on the research interest and adding follow-ups relevant to the topics of the study and the pre-service teachers' responses. The questions were organised in three thematic sections: (a) preparation for the digital exam; (b) experiences with the digital exam tools and the situation; (c) evaluation of the exam at a general level. The interviews varied in length between 32 and 98 minutes depending on how many details each of the participants

included, to what degree they elaborated their answers and whether they had any reflections on the issues.

Coding and analysis

The data comprised 11 transcriptions from the interviews and were organised using QSRs N-Vivo 10. The coding was mainly based on topics that appeared in the responses. A data-driven coding like this entails that the codes were derived from the data rather than from pre-existing concepts (Gibbs, 2007). The software N-Vivo includes a function for labelling parts of the transcribed interviews as ‘nodes’ (Bazeley, 2011). This allowed us to establish various nodes during the initial analysis based on the content of the interviews. These nodes were later organised and categorised pertaining to our three main interests described above, resulting in a final set of codes.

Case descriptions were chosen as a method to illustrate central points in our analysis, and to make a somewhat more ‘thick description’ (Denzin, 2011) of how the pre-service teachers reacted to and experienced the situation. We ended up with three cases as a way to demonstrate a variation in experiences and responses, and at the same time to illustrate some patterns in their descriptions. Our selection process was based on which informants had both unique and common responses among the 11 informants. For instance, both Sam and Rita reported to be self-confident in the exam setting but had different approaches to the exam situation. The remaining eight informants were used to validate the case information and highlight general patterns across the sample as a whole.

The validity of the study

We consider validity to be a matter of trustworthiness, rigour and quality (Golafshani, 2003) in all phases of the interview process (Kvale, 2007, p. 123). Furthermore, the interviews were completed in late 2015, and the exam design has been developed slightly since then. After four years, we would argue that the results are still relevant since the issues raised are transferable from the context at the time to contemporary issues about examinations. Research design and findings should be evaluated on internal consistency, both at the level of the participants and existing studies in the field.

Ethics

In our work on this research project, we have followed the ethical guidelines set by Norwegian research authorities (Den Nasjonale forskningsetiske komité, 2006). More specifically, all participants were informed both in writing and orally

about the project, what their participation would involve, and that they could withdraw at any time. The anonymity of the informants was ensured by using aliases, and no information that might reveal their identity was or will be exposed. All direct citations are translated from Norwegian, and great care has been taken to preserve the original meaning.

Results: Exam preparations and approaches to solving the task

In this section, three cases are provided to illustrate the characteristic approaches to exam preparation and task solving that this design generated. Following this, the central tendencies seen across the sample is presented.

Three case descriptions

The following case descriptions illustrate how three pre-service teachers prepared for and responded to the digital exam. The cases describe some of the driving motives and resources utilised in the preparation and writing of the exam report.

Rita – utilising new opportunities

In advance of the digital exam, Rita and some of her peers gathered and divided course-relevant books and articles to study in equal portions. They wrote and shared notes to maximise the overview of relevant themes. Rita organised the notes in a digital format and categorised the content, which allowed her to browse through the notes and pick up relevant themes when composing her exam report.

Ahead of the exam, Rita tested the home network to ensure that the exam platform worked properly. She wrote her report while sitting in her kitchen. When the exam started, she watched the video case several times and made notes of her observations. Thereafter, she wrote her immediate impressions and later revised the descriptions in a second round. She compared her interpretations with the previously written notes before she decided on a theme that would be reasonable to elaborate according to the exam instructions. Her chosen exam theme was aligned to her academic subject specialisation.

Despite the time constraints of the exam, Rita claimed that she had *managed to complete the task in four hours*². She was satisfied with her achievement and reported that she would likely prepare in the same way next time, if possible. However, she was not particularly fond of writing under time pressure, and she believed her performance could have been better if she had had more time.

² Written in italics to signify that this is a direct quote from the interview – Translated from Norwegian

Concerning the digital exam design, she believed it was slightly more relevant to the teaching profession than many other formats she had experienced: *To have an observant view on instruction, and make a connection to theory, I believe, enables me to show a little more of the connection to [teacher] practice.*

At the same time, she did not see any reason to include her own experiences from practice as part of her exam report, as she did not have an insight on the subject presented in the video. In her view, the differences between the subjects were so significant that the teaching experiences would be incomparable.

Sam – following familiar patterns

Sam found the digital exam to be quite similar to the take-home exam format he knew well, as he had permission to sit anywhere and use all available materials. He decided to follow a strategy he commonly used for take-home exams. Like most of the other pre-service teachers in the course, Sam attended the seminar in which observations and analyses of video cases were discussed, but, as he said, *I would not say we have worked a lot with how one observes a video.* Of course, he had observed other lectures during his practicum, but as he remarked, *a video case is another type of observation than I've been doing as a teacher.* In his view, the observation in the classroom is bound to the context, whereas video-documented observation is centred on an entirely new and unknown situation.

On the day of the exam, Sam worked alone, *sitting home by a coffee table while a cat was running around in the apartment.* When writing his observations, he paid extra attention to the teacher's behaviours and actions that he believed to be relevant for understanding teaching. He admitted to consciously focusing on certain elements in the video that would point in the directions he wanted. He said his choices were influenced by a previously written course assignment. He had browsed through a copy of this assignment during the exam looking for inspiration. He also used available books and articles during the exam. Furthermore, he chose not to include many of his own experiences as a teacher in the exam report. They were too *subjective*, he felt, and furthermore, he argued that his interpretations of teaching would be misplaced in this subject-related and high-stakes exam task.

Sam was not particularly content with his performance on the digital exam, and the result did not live up to his expectations. He pointed out that he had misinterpreted the nature of the task, and his writing plan did not work properly due to the short time available. In retrospect, he concluded that he should have prepared differently and adopted a regular school exam type of preparation.

Marie – exploring the affordances

Like Rita, Marie and some of the other pre-service teachers formed a study group to write and share summaries of the course literature. She found this to be a useful and timesaving method for getting an overview of the learning content, compared to reading the literature in full. Because of the limited exam time, she decided to take a chance with an unconventional preparation method. The open-ended exam format inspired her to explore the affordances of the exam format and choose a theme in advance that could relate to the upcoming video case. She decided to work out texts ahead of the exam on a theme of a general nature, namely, communication. She thought it would be easy to adapt the texts to the anticipated classroom situation coming up in the video case. She wrote several pages in a digital document that could be used to *cut and paste, and editing, during the exam*. Marie felt they had received too little guidance from the lecturers regarding video observation and analysis. The lecturers *almost expected the students to know such things from before*, she said.

Marie reported sitting together with a handful of her friends at the university when viewing the video. After they had watched the video twice, they spent 20 minutes exchanging ideas about what they had observed and what they could include in the assignment. Then, they separated for individual report writing.

Overall, Marie appreciated the use of a video case as the starting point for the exam work. For her, it made the task more realistic. Moreover, she perceived the discussion with her friends during the exam as very *rewarding*. Regarding her strategy of writing pieces of text in advance, she believed it worked so well that she would have done the same thing again. However, she realised that there were some drawbacks with her choice, such as a *weaker connection between text and case*, and she believed it might be more reasonable to write a larger portion of the assignment there and then.

Summary of the cases

In two of the cases, the pre-service teachers went into discussion groups before the exam, where they shared their readings and understanding of the course content as well as digitised notes. One of the groups also met to watch the classroom video together and shared their observations for 20 minutes as the starting point for their reporting. In the third case, an individual approach was chosen when preparing for his exam. Two of the pre-service teachers were sitting at home when they wrote their reports, while the last one used the university

facilities. One student, Marie, chose to prepare pieces of text on a general theme of communication beforehand to use during the exam. Another also used pre-prepared digitised notes with summaries of the course literature. Each of the initiatives they report both before and during the digital exam seems to be entirely based on their individual dispositions or experiences drawn from their existing learning culture.

Furthermore, they used different exam models with which they were familiar when preparing for the digital exam (e.g. a take-home exam, school exam or an academic subject-related exam). The cases reflect how the pre-service teachers tried to adapt to the new exam genre. All three were reluctant to utilise their experiences of practical teaching when completing the exam task. They seemed to have implicit expectations of what should be written in an academic exam, and this presumption did not include such personal accounts of teaching. They also reported experiencing time pressure during the exam, which made it additionally difficult for them to reflect on their practicum experiences in the exam context. It would seem that the digital exam, with all its various novelties, represents a disruption for the pre-service teachers that does not match their assessment expectations.

Patterns across all the pre-service teachers

Some common response patterns can be observed across all the interviewed pre-service teachers. Answers from the rest—named Dina, Kristin, Sara, Nora, Tara, Ingrid, Kim, and Anne—are used to complete the picture.

<p><i>Positive attitude toward the digital exam concept.</i></p>	<p>The pre-service teachers appreciated the video case as a concept, and they spoke of it in positive terms, such as <i>intriguing, exciting, amusing and good.</i></p>	<p>Kristin: <i>I remember I thought to myself that it was a clever mode of examining because it was more... you get a little more inside of the classroom, with that film.</i> Nora: <i>I think it was good because there were a lot of different themes we could focus on – I focused on concepts, (...) and it was the use of</i></p>
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		<i>PowerPoint that one could tie to ICT.</i>
<i>Use of previous exam experiences.</i>	All reported that they approached the digital exam by comparing it to their previous experiences with familiar examination types. Although they perceived the upcoming digital exam as a different format, they tended to rely on their traditional strategies for preparing.	<i>Dina: (...) when you are sitting at a school-exam, you have... no chance of anything, you just have to know it (...) you just need to have control on where you can find things, but you also need to have general control on what it's all about.</i>
<i>Academic writing skills at stake.</i>	Several of the pre-service teachers mentioned that writing skills were important for their performance on the digital exam. They reported having different experiences of using writing as a tool to formulate their knowledge. In comparison with other formats, they said that the task included an unfamiliar type of writing.	<i>Ingrid: Maybe it would have been better for those who are good in Norwegian, for example, who are used to writing assignments, but I'm using a long time to formulate myself.</i>
<i>Lack of experience with observing and analysing teaching.</i>	The pre-service teachers reported having little specific prior knowledge of observation and	<i>Tara: We have never practised how one is supposed to interpret</i>

	analysis that they could draw upon in the exam situation. The task of observing and analysing the video case was thus perceived as quite different from what they were used to, and some of them were worried about the exact requirements of the task.	<i>and write something like this.</i>
<i>Text writing in advance</i>	Many of the interviewed pre-service teachers reported that they wrote some text in advance that they intended to use in their exam reports.	<i>Anne: I simply wrote three texts about themes we might get, and that I could adjust to the video case.</i>
<i>Student collaboration as a resource.</i>	A majority of the pre-service teachers reported using their peers as resources both before and during the digital exam.	<i>Nora: We watched the video, and then everyone went together out from the study halls, or like, five or six, and then discussed what we saw. And then I went in again, and after that, we didn't talk anymore.</i>
<i>Using examples from practice.</i>	Few of the pre-service teachers found their own practice experiences to be explicitly relevant to the content of their exam report.	<i>Kim: If I was to change between case and [own] practice and... I don't know. It wasn't natural in my report then. I believe I only wrote about it at one point.</i>
<i>In need of in-depth feedback.</i>	The pre-service teachers received a short, written	<i>Dina: The feedback wasn't helpful at all.</i>

	feedback after the exam, and although most of them reported it to be a fair judgment, some found little use for it.	Kim: <i>I was satisfied with that. I just read it, like... briefly.</i>
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Discussion

Developing skills for observing and analysing teaching and learning situations is crucial for teachers as professionals (Blomberg et al., 2014; Borko, 2016; Darling-Hammond, 2016). This has been a leading idea in the development of the digital exam explored in this study. Our investigation of a digital exam design implemented in full scale has revealed that the use of video case, based on a selected episode of classroom practices, can function as a mediating means for the pre-service teachers' reflections on teaching and learning. This finding is not surprising considering earlier research on video use in teacher education, where the mediating role of videos has been found to be central (Christ et al., 2017; Fadde & Sullivan, 2013; Goldman et al., 2006; Grossman, 2005; Krumsvik & Smith, 2009; Tripp & Rich, 2012; Wiens et al., 2013).

The general impression from the interviews conducted here is twofold. First, it can be claimed that the informants were engaged and motivated by the new exam format, particularly by the video scene connected to classroom teaching, the possibilities for student discussions and individual writing using personal themes. The pre-service teachers reported to utilise a varied set of knowledge resources and digital tools when preparing for the exam and when producing their reports during the examination. For instance, they spoke of how they prepared digital notes and texts to use in their report writing. In addition, some recalled having organised study groups and shared notes related to the expected exam themes. Some details may have been forgotten during the six months that had elapsed since they completed the exam, but no particular negative reactions to the extended digital exam format have been revealed in this study.

On the other hand, it is also possible to see that the new affordances of the exam format provoked uncertainty among the pre-service teachers about issues like the genre of writing and the anticipated assessment. As the pre-service teachers reported, they approached these challenges by drawing upon knowledge of previous exam experiences. Our three cases illustrate the variety in their

reasoning and use of resources, and this tendency was also seen among the other pre-service teachers. Some said they used a take-home exam format as a model, while others used academic and subject-oriented exam or school exam models when completing their reports. In addition, some of the pre-service teachers were motivated to explore whole new ways of writing (e.g. by combining pre-prepared texts, systematic descriptions of video events, ideas from peers and an inquiry-based approach in analysing their chosen exam theme). The result would be a range of approaches in which each found a preferred solution to solving the tasks.

One reason for this diversity in approaches may be the reported need for more guidance before the exam. Although the pre-service teachers were offered to attend a seminar in video analysis and received written feedback after the exam, the overall support from the educators was not perceived to be sufficient for solving all aspects of the exam properly. The task of observation and analysis was particularly challenging, and many believed their skills in this area were to rudimentary. Most found it difficult to include their own experiences from the practicum in the exam report and had problems to connect these two fields of knowledge. In addition, most found the written feedback afterward to be less helpful for their understanding.

Thus, this qualitative study indicates that the introduced exam design at times communicates contradictory messages regarding the knowledge to be assessed and how to solve the exam task in practice. At a general level, the pre-service teachers in this study expressed that they appreciated the new design, but at the same time, they seemed to be torn between already established models and genres of writing with which they are familiar. It would seem that they were not sure about the assessment criteria and were unsure of how this exam format would be judged. The pre-service teachers' responses to the exam format may be explained as part of a conflicting institutional message about exam models (i.e. how exam history is embedded in institutional practices mediating contradictions and tensions when innovations are introduced). The responses may also be explained as part of a genre conflict for the individual pre-service teacher based on his or her earlier exam experiences (cf. Ivanic et al., 2009; Prior, 2006).

An additional point of interest is the potential use of collaboration during this exam format. Discussions during a high-stakes situation are not common in higher education and were not something the pre-service teachers had encountered before either. Previous investigations of this exam format suggest that this collaborating activity was motivated by insecurity about the exam (Lund &

Engelien, 2015), but this study offers additional insight into how some pre-service teachers also found such discussions of the video to be generative for their analysis and understanding.

Implications

Even though there are several limitations to this study, such as the number of respondents, it offers insight into how a full-scale digital exam with various affordances can be implemented in a large institutional setting and an established learning culture. The most significant changes from traditional exams were the video case and the management system for individual student reports incorporated in a digital exam platform. Combined with the open-ended exam task and its specifications, these tools seem to play a crucial, mediating role for the pre-service teachers in processing their exam reports. Regarding the exam's objective of stimulating the pre-service teachers to demonstrate their ability to integrate knowledge about teaching and learning, the study highlights several critical parts of the exam design: (a) the pre-service teachers chose to bypass their individual exam experiences and adapt to new models/genres of testing; (b) how and to what extent learning cultures at the institutional level support a problem-oriented approach to examination. The task of integrating theoretical and practical knowledge remains one of the greatest challenges in teacher education (cf. Blomberg et al., 2014; Darling-Hammond, 2014; Grossmann, 2005), and the example provided here illustrates the complexity of the issue. A potential lesson learned from the findings in this study is that innovations and their intended influence on the existing learning culture should be carefully planned and evaluated.

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Article 2: Affordances of a video examination: Opportunities for pre-service teachers to demonstrate professional knowledge of teaching and learning

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Affordances of a video examination: Opportunities for pre-service teachers to demonstrate professional knowledge of teaching and learning

Abstract

The present study reports on an alternative examination design where pre-service teachers took part in observation and analysis of a video-recorded classroom situation, and how this affected their opportunities to demonstrate their conceptual knowledge of teaching and learning. The findings from analysing twenty-one written examination reports suggest that the pre-service teachers were able to make use of the video-recordings in a meaningful way to discuss professionally relevant issues. However, their responses to the various parts of the examination differed. While the first part elicited a wide range of responses and interests, the last part was dominated by clearly academic aspects of knowledge.

Introduction

Teacher education is an area of professional training in a constant state of change. School reforms and new policies have implications for the design of teacher training. Since the education of teachers in many countries comprises academic training conducted within the traditions of higher education, learning is characterised by methods used in such settings. For instance, students and educators are instructed through modularised programmes and courses that constitute the curricula, and intermediate and final examinations are used to determine the progress towards the goal of being a certified teacher. This pattern of training will have direct impact on how learning is practised and understood in this context.

The content of teacher education tends to be quite diverse, reflecting the complex nature of the teaching profession, ranging from general schoolteachers to a wide range of subject specialists. Pre-service teachers must take courses in subject-specific and general pedagogical topic areas. Moreover, there will be periods of practical-training placement in schools where the students learn how to exercise the profession of teaching. The route to graduation thus covers various types of learning, both in the traditional academic sense but also in classroom contexts. Sometimes this move between different sites of learning takes place within the same course. In this landscape of professional training the students will also

encounter different examination formats: oral and written examinations and evaluations of their performance during teacher-training periods. Some examination formats are well suited for demonstrating what the pre-service teachers know of the performative side of teaching, while others might only focus on their academic knowledge in the traditional sense of mastering a discipline (Villarroel, Boud, Bloxham, Bruna & Bruna, 2019). The consequence of testing only selected parts of the students' knowledge could ultimately be that they will pay little attention to the subjects that are not assessed. A well-known principle in higher education and elsewhere is that the ways in which tests are organised will impact the learners' approaches to learning (Marton & Säljö, 1976), sometimes described as the "backwash effect" (Prodromou, 1997, p. 209).

A recent attempt to address the issue of how to develop examinations in the context of teacher training has been made in a Norwegian university. Similar to an earlier project in the US (Pape & McIntyre, 1993), this examination design includes a video-recorded classroom event as an examination task. The students are expected to analyse the events documented in the video as part of the test. The principle of using video as a mediator for teaching purposes is well known and documented in other research projects on video technology (Christ, Arya & Chiu, 2016; Gaudin & Chaliès, 2015), but is rarely used for examination purposes.

The video examination format in question has now become a regular part of the teacher education at the Norwegian university where it first was introduced. The format is an integrated design, which means that students are instructed and tested across different disciplines, such as educational theory, pedagogy, subject specialisation and classroom experience using this examination format. Being one of two examinations in this twenty-credit course, it counts for forty per cent of the total grade (A-F). The exercise is solved individually during a four-hour exam, and the test is taken online. This implies that the pre-service teachers can take the test anywhere they like, using any means they find useful: Resources like books, notes, web-resources and so on are available during the examination period, and the pre-service teachers may even collaborate, should they wish to do so.

The practical arrangements are as follows. A video case of an authentic classroom situation is presented at the beginning of the examination. This video is identical for all the pre-service teachers taking the examination in the year in question, irrespective of their specialisation. After watching the video as many times as they like during the examination period, they then have to address the following:

The first part of the exercise begins with an observation, where based on relevant theory and through the use of relevant concepts you are to explain important observations you have made in the case. The next step is to formulate an issue that can shed light on how you, as a teacher, can work with one of the topics in your subject specialisation that you have observed in the case. Discuss the issue in light of your pedagogical and subject specialisation. You can also include teacher-training experiences where they are relevant to support your argument. Refer to the case where it is natural to do so in the discussion (original in Norwegian, my translation). [The examination paper is not publicly available.]

One of the explicit intentions underlying this design of the test is to improve the relevance of the students' personal experiences from classroom practices and to support their ability to combine them with concepts and theories encountered during their studies at the university (Lund & Engelién, 2015).

This examination format differs from more commonly used written examination formats in the sense that the pre-service teachers are expected to show that they can apply their knowledge of teaching and learning to the events observed in the video. Using cases for educational purposes in teacher education is known from e.g. Shulman (1992) and this approach has later been tested with varying degrees of success (Shin, Brush, & Saye, 2019). This innovation is interesting due to the wide range of changes it implies for both educators and students in the higher education context. A previous analysis of this video examination design found that the novelties of the examination format challenged already existing conceptions of what it means to take an examination (Adalberon, Hauge, & Säljö, 2019).

Research interest

The aim of this article is to investigate the ways in which the video examination design allowed the pre-service teachers to display their knowledge of learning, instruction and classroom activities by producing written analyses of educational practices. Assuming that they have acquired knowledge from various sources, such as course literature and teacher-training periods, the interest is to ascertain whether or not they are able to display this knowledge through this particular examination format.

To explore how pre-service teachers respond to such a challenge, a sample of twenty-one examination reports has been collected and analysed to answer the following research questions:

1. What categories of teacher-relevant knowledge were discernible in the examination reports?
2. At what stages of the examination were the different types of knowledge discernible?

To analyse the examination reports, the conceptualisation of teacher-relevant knowledge proposed by Cochran-Smith and Lytle (1999) has been used, where knowledge is categorised as either *for*, *of* or *in* practice (see below).

Background

To specify the video examination design further, it is given at the end of the pre-service teachers' sixth semester as a part of the regular evaluation. It is thus a high-stakes situation for the students, which makes it an interesting object of analysis. It is given in a recently reformed teacher education programme where the overarching intention was to strengthen the alignment between different elements in the course and to develop pre-service teachers' competencies in using digital technologies in school (Lund, Bakken & Engelién, 2014).

The video case used in the examinations in this particular year is approximately ten minutes long, and shows a teaching situation from a regular Norwegian school. A new case is made for each year the examination format is used.

Events in the video case that the twenty-one students watched may be summed up as follows:

The subject taught in this lesson is Norwegian literature. The recording begins with a male teacher giving his pupils a brief introduction to the lesson. He explains that they are going to work with a literary era called realism. In what follows, the teacher gives a lecture on the topic. During his lecturing, he poses some questions related to various issues he discusses, but no student in the video responds to his questions. Only a few of them look at the teacher during his presentation. Following this part, the teacher uses an interactive smart-board to present short video examples to illustrate his points. This first part lasts approximately four minutes.

In the next section of the video, and after the teacher has shown the video excerpts to the class, he tells the pupils what the vignettes are supposed to illustrate. Shortly after

this, he hands out some worksheets with questions relating to the literary era of realism and tells his pupils to work on them in pairs.

The pupils follow his instructions, and the activity in this part of the video is mostly about answering the tasks. The teacher circulates in the classroom and supports his pupils: some of them ask him questions, while others raise their hands to signal that they need guidance. For the most part, the teacher repeats or clarifies what he said previously, and instead of giving direct answers, he asks the pupils guiding questions relating to the content. The video ends abruptly, after approximately ten minutes. No comments are made, nor is information given about the context.

Theoretical framework

The topic in this study is investigated through a socio-cultural perspective (Vygotsky, 2012; Wertsch, 1998). Aiming for a broad scope, this investigation goes beyond the individual pre-service teacher's struggles to understand and answer the exercise and focuses on the context in which these participants answer the examination. One important question is to ascertain how the various tools included in the format can help the students to mediate their knowledge. The format encourages the pre-service teachers to observe and analyse a video-recorded event, and they are to put their answers in writing within the examination's time limit. Thus, the pre-service teachers are prompted to use their abilities to note and observe, as well as to formulate and organise their thoughts and reflections in an analysis of their observations. The video examination design is an interesting case where different tools are in play, and where the video element adds to the affordances of the examination. This approach will provide new opportunities for pre-service teachers to show their knowledge while it is still bound to the many known challenges of academic writing (Erixson & Josephson, 2017).

Teacher-relevant knowledge in education

Since context is also considered to be important in this study, the circumstances under which the video examination is deployed need to be considered. As it has been described in the research literature, teacher education is a complex assemblage of various constituent parts that pre-service teachers have to engage in (Adoniou, 2015), such as insight into teaching subjects, pedagogical knowledge and classroom practices (Darling-Hammond, 2014; Shulman, 1992). Moreover,

pre-service teachers are inclined to have their beliefs and creed that tend to develop during their training (Akslen & Sæle, 2014; Chen & Cowie, 2016; Fives & Gill, 2015). A recurring problem for teacher educators has thus been to select and make natural connections between the constituent parts and merge them into meaningful wholes for the students' learning. In particular, the alleged distance between theory and practice is often referred to as a gap (Cheng, Cheng, & Tang, 2010; Plöger, Scholl, & Seifert, 2018), or even a boundary that must be overcome if the quality of teacher education is to be improved (Korthagen, 2017).

According to Fenstermacher (1994), knowledge in the field of teaching has been conceptualised in various ways over time. Attempts to describe and categorise the complex skills of teaching have given interesting, but at the same time, simplified results. A model presented by Adoniou (2015) differentiates between 'knowing how', 'knowing that' and 'knowing why', identifying performative, theoretical and reflective elements as separate categories. Bearing this in mind, Cochran-Smith and Lytle (1999) identify three distinguishable broad categories of teacher-relevant knowledge:

- Knowledge-for-practice
- Knowledge-of-practice
- Knowledge-in-practice

These concepts are derived from different ideas on knowledge and professional practice and how these elements are related in teachers' work. Even though they reflect different ideas and approaches to teachers' learning, they are interrelated and coexist in teacher education as important knowledge categories to be explored by students. Knowledge-*for*-practice is in many ways equal to the 'know-that' category (Adoniou, 2015), and is defined as 'formal knowledge', or insights into the general theories and research findings that constitute the basic categories of teaching. Examples of this would be subject matter knowledge, pedagogical content knowledge, educational theories and knowledge on human development and learning (Cochran-Smith & Lytle, 1999).

Knowledge-*of*-practice implies that teachers operate within a mode of professional knowledge developed as a critical and inquiry-oriented approach to teaching and learning. Such knowledge is intimately connected to the teacher as the knower and her/his own process of theorising practice and formal knowledge. In this mode, the

teachers can reflect on their own knowledge and practice as well as of that of their colleagues.

Knowledge-*in-practice* emphasises teachers' knowledge in action, their reflection on practice and their narrative accounts of practice. This type of knowledge is embedded in teachers' professional experiences and can be linked to the above-mentioned 'knowing-how' category (Adoniou, 2015) in the sense that the student has become familiar with the performative aspects of teaching.

Conceptualising knowledge in this way gives a simplified but at the same time useful framework for analysing different categories of teacher-relevant insights. A division like this underscores and accentuates how knowledge can be of a theoretical or practical nature, but may also involve an integrated understanding of both these elements of professional practice.

Method

This study builds on a qualitative analysis of the twenty-one examination reports. The methodological considerations will be explained in the following sections.

Analytical approaches

The focus of this study has been on the investigation of examination reports written by pre-service teachers as a response to the video examination design. Their texts are interpreted as a reflection of their varied knowledge of learning and teaching mediated by the tools, exercises, time and setting determined by the examination situation.

A sample of twenty-one authentic examination-reports was collected from a total of 142 submitted reports from the semester examination in question. These samples were obtained in collaboration with the university staff who administered the examination reports and who undertook the selection according to the available criteria. Since the reports were anonymised, only grade and subject specialisations were available variables, and bearing this in mind, twenty-one examination reports were deemed to have an adequate amount of data to cover the research issues, and to be representative of the group to some degree. For instance, the sample reports were to cover all the awarded grades, from A to E, and were to be distributed among the various fields of study. The reports were also selected evenly to cover three broad groups of subject specialisations defined as: mathematics/natural science (7), language studies/humanities (7) and other disciplines, including fine arts and physical education (7).

The analysis of the material was mainly qualitative, which included descriptive coding, topic coding and analytical coding (Richards, 2009). While the descriptive process was rather straightforward, the topic and analytical coding was conducted in accordance with general principles suggested by Bowen (2009). This implies combining aspects of content analysis and thematic analysis. First, a general analysis of the reports was carried out through an initial reading to identify pertinent information in the texts that would serve to illuminate the points of interest, namely the three categories of knowledge. The software N-vivo which was utilised in this process provided the functionality to identify and label “nodes” in the text as part of the initial phase of the analysis. This facilitated the topic coding and the second step of analytical coding by giving a comprehensible overview of the material. Codes pertaining to different knowledge types (Cochran-Smith & Lytle, 1999) were salient at this stage, but codes related to observations from the video, such as ‘teacher style’, ‘student activity’ and ‘discussions’, were also established. After coding the material, the different codes were examined to find a final set of categories. In addition to this process, the examination reports were also read as individual units, where overall features such as structure and consistency were considered.

Ethical considerations

We have treated the content of the analysed examination reports with a view to privacy and confidentiality considerations. The examination reports have been anonymised, and no details about the authors are revealed. This study has been conducted in accordance with the rules set by the National Research Ethics Committees (Den Nasjonale forskningsetiske komité, 2006).

Findings and analysis

In the following account, examples and patterns of the pre-service teachers’ responses and interpretations of the video case and their problem-solving approaches will be presented. The twenty-one examination reports are here referred to as ‘Pre-service teacher’ and numbered 1-21 corresponding to each of the reports.

Responses to the first step: drawing upon various types of knowledge

The exercise in the video examination can be said to contain two main steps. The first step involved observation and analysis of the video case, and this elicited a combination of observations, comments and application of theory. The variation in approaches would suggest that the pre-service teachers were able to combine

knowledge-in-practice and knowledge-for-practice. For example, Pre-service teacher 14 wrote this as part of her analysis:

When the teacher walks around and helps the students, he poses quite closed questions. For example, ‘what is a novel’? The teacher’s communication with the students could indicate a common, fixed pattern: an IRE/F pattern. The teacher asks a question, the student responds and this is evaluated by the teacher (Pre-service teacher 14)

Here, Pre-service teacher 14 provides a brief description of a situation in the video case and draws upon theoretical concepts mostly found in the course literature, for example ‘closed questions’ and “IRE/F pattern” to analyse and explain what had been observed. Her experience from classroom practice is not obvious in this example, but is visible through her recognition of the actions. Therefore, instead of just providing a descriptive or theoretical account, she draws upon a combination of types of knowledge, apparently mediated by the observed event.

Theories, or knowledge-for-practice, were sometimes presented in isolation from the context in the first step of the examination. Different analytical approaches appear between the task of observation/analysis and the discussion of a self-defined problem. The students would often write paragraphs ending with references to the literature, as is the case with Pre-service teachers 3, 10 and 17:

The subject of history has, on the one hand, always been a subject based on text. On the other hand, the use of pictures and film make the past more alive, and thus also more engaging for the students (Lund, 2011, p. 149). (Pre-service teacher 3)

From a socio-cultural learning perspective language is seen as the most important cultural tool. Vygotsky pointed out that we reflect through language and that it mediates the world for us. (Pre-service teacher 10)

To pose questions to control that the new knowledge is stored in the right way, or that the right knowledge is stored, is something that one should be doing regularly. In this way, misunderstandings can be corrected (Klette, 2013; Schunk & P.M. 2010; Mercer, 2007). (Pre-service teacher 17).

All these excerpts are presentations of theories or research results, and the answers reflect the pre-service teachers’ insight into knowledge-for-practice. The connection to events in the video is not made explicit.

Engaged in the observed events

Furthermore, in response to the first step, some events in the video seemed to engage the pre-service teachers more than others, where they displayed and combined categories of knowledge. For example, Pre-service teachers 3, 4, 6, 8, 15, 16 and 17 commented in detail on how the teacher introduced the lesson by presenting the goal of the upcoming work. Apparently, many of the pre-service teachers recognise this introduction as important for successful teaching, and some also make connections to knowledge-for-practice related to their course literature. As an example of this, Pre-service teacher 6 wrote in her report:

(...) the teacher starts by activating the pupils' previous knowledge. (...) this type of consolidation or activation of previous knowledge is claimed by Klette (2013) to be important for pupils' learning.

This comment reveals that Pre-service teacher 6 has first recognised the event in the video as important for teaching, using her knowledge-in-practice, and the answer also demonstrates insight into formal theory. Drawing upon her knowledge-for-practice, she is able to use relevant concepts to describe and make sense of this particular event.

Another event the pre-service teachers found noteworthy was the sequence where the teacher in the video asked his pupils some questions. Pre-service teachers 2, 7, 14 and 16 made some elaborate comments on this, and Pre-service teacher 7 described the situation:

During the task-solving sequence, the teacher utilises several techniques. We can observe the use of 'cued elicitation' where the teacher tries to 'extract information' from the student through the use of hints (Mercer, 1995). In some cases, the teacher gives the answer and asks the students to continue building on this. The questions the teacher utilises can be described as closed questions, where the teacher knows the answer and encourages 'correct answers' (...).

This is yet another example of how an event in the video case can provide a context to utilise and reframe their knowledge-for-practice. The written description here mediates the pre-service teacher's perceptions of teaching and how she interprets the situation by applying theoretical arguments.

When the pre-service teachers noticed details in the video, their opinions on the teaching were often expressed through comments on the form and content of the

instruction, as well as suggestions relating to how things could have been done differently. For example, most of the pre-service teachers found the observed teaching method to be somewhat one-sided. Pre-service teacher 9 wrote:

These [acquisition situations] are often monological [*sic*] and teacher controlled, while the students are passive and disengaged. We see this in the video case. The students are only partly paying attention to what the teacher presents.

This excerpt illustrates how the pre-service teachers sometimes present critical perspectives and question the actions observed in the video. Some amount of insight is required to point out and question details about the observed teaching, and this is a sign of knowledge-of-practice.

Different interpretations

Some of the situations in the video case were also interpreted in different ways. At one point, some of the pre-service teachers claimed that the inactivity observed in the classroom was a sign of teacher control. Pre-service teacher 6 asserted that ‘the classroom is characterised by calmness and order (...)’. Although she had no further comments on the situation, the comment shows that she teacher had a clear opinion on the situation. At the same time, several others found this to be a sign of boredom. Such different interpretations of the same classroom event indicate that the open-ended nature of the video examination design makes it possible to perceive a given instance in a number of ways, thus eliciting a range of perspectives on learning and teaching.

The pre-service teachers also perceived the teacher’s performance differently. While some of them expressed dissatisfaction with the observed teacher’s choice of instructional methods, others also expressed admiration for his choices and actions. Pre-service teacher 20 claimed that “the teacher is good at moving around”, and then signalled agreement with the teachers’ actions during the seatwork sequence as well. In the same normative manner, Pre-service teacher 11 wrote that ‘he was good at using body language and displayed confidence concerning what he was lecturing about (...)’. This pre-service teacher appears to appreciate the way the teacher presented the content of the lesson and does not seem to mind the low level of pupil activity.

An inquiry-based approach to the observed events was noticed in some of the examination reports. For instance, Pre-service teacher 21 spotted a detail in the video:

(...) one pupil sitting alone in the background who does not partake in any collaboration.

And followed up this observation later when commenting on the seatwork:

The pupil in the first row does not seem to receive any follow-up during this sequence, and unless there are some special considerations, it is strange that he has not been placed in a group with others.

Pre-service teacher 21 was the only one to raise questions about this observation, and her apparent concern for this lonely pupil may reveal insight into teaching-related issues beyond knowledge-for-practice alone. Pre-service teacher 18 also displayed an interest in some details about the seatwork:

One cannot see whether the pupils are working together on the tasks (...). At the same time, (...) two pupils sit and talk, but it is not possible to hear what they are talking about.

In her remark, she questions the events in the observed classroom without using any knowledge-for-practice directly. This may indicate that in their different accounts both pre-service teachers 18 and 21 draw upon knowledge-of-practice. Both seem triggered by certain details in the video, and they display an interest in ascertaining what is going on beyond what has been displayed in the sequence.

Responses to the second step

When the pre-service teachers addressed the second step of the examination, namely the formulation and discussion of a self-defined problem, some changes in argumentation and use of knowledge became evident. They continued to draw upon their knowledge-for-practice, but other forms of knowledge were less visible. This tendency was seen in virtually all the investigated examination reports. Rather than presenting numerous examples, Pre-service teacher 12 demonstrates the general style found in the material when writing:

In the subject of Norwegian [language instruction], there is much reading of old texts with a somewhat difficult language. ‘Motivation may also be related to the reader’s belief that he or she will succeed in understanding the text’ (Roe, 2006).

The excerpt contains both a quotation and reference to a literature source, and is representative of how most of the pre-service teachers chose to write their answers on the second step.

Even though they were encouraged to use the video when presenting examples, this was done only sporadically. For instance, when discussing conversations, Pre-service teacher 15 mentioned: ‘From the video case it is difficult to determine whether such conversations occurred (...)’. This is a common way of presenting their knowledge-in practice, and other pre-service teachers also included brief comments like this. Further elaborations were rarely seen. Consequently, their knowledge-in-practice or knowledge-for-practice is, for the most part, visible in the answers for the first step. It would thus seem that the two steps included in the video examination design elicited qualitatively different responses.

Summary and discussion

The aim of this study has been to investigate pre-service teachers’ opportunities to demonstrate their teacher-relevant knowledge through a video examination and its added affordances. This examination design involved observation and analysis of a video-recorded event from teaching practice and would potentially mediate a connection to the various knowledge categories. The study presented here reflects the answers from twenty-one of 142 students that were submitted and assessed during 2015. This means that some reservations will be necessary in the following discussion.

The findings indicate that the pre-service teachers’ examination reports followed a pattern where the different steps of the exercise elicited different use of knowledge. The first step of observation and analysis garnered a wide range of responses, and the pre-service teachers drew upon different knowledge categories when they commented on the teacher role, the instructional style, the communication pattern and the lack of dialogue with the pupils. Even though their view on the classroom events and practice could differ, the main point is that the observation of the video appears to trigger and stimulate the pre-service teachers to express their opinions and experiences of teaching and learning on a personal level. This open-ended exercise seems to afford the use of different types of knowledge, here conceptualised as in- and for-practice (Cochran-Smith & Lytle, 1999). There are also some glimpses of knowledge-of-practice in the examination reports, in particular when the pre-service teachers start to question and problematise the events in the video. Even though there are few and only brief examples of this, some of the events presented in the video case seem to elicit reflection processes.

In terms of mediation, it is possible to claim that the images from a classroom and the activities in it mediated the pre-service teachers' knowledge that they had acquired through studying the course literature. It is also important to note that the reasonably long video sequence presented a number of events for the pre-service teachers to engage in. Their engagement and inquiries of observed details raise some interesting questions with respect to the content and length of such a video. While shorter vignettes have been used to illustrate certain points (Sturmer & Seidel, 2017; Wiens et al. 2013), the fairly long and detailed video sequence in this case seems to facilitate the pre-service teachers' recognition of classroom practice. Even though they had different interpretations of events viewed in the material, some situations engaged the pre-service teachers without being controversial in any way. The content and length of a video will thus seem to be of importance for mediating a broad range of responses. Even though the pre-service teachers here demonstrated variable observation skills, the attempts to include personal experiences in the analysis are compelling.

The second step in the examination involved formulating and discussing a self-defined teaching and learning problem. Compared to the first step, it is possible here to recognise a shift in argumentation and writing style. On this point, the pre-service teachers, relying on the content of the course literature, argued with references to this material without using the earlier video observations and their individual experiences from fieldwork in school to a high degree. Thus, they demonstrated their knowledge of theories, instructional perspectives and methods presented in their coursework, or, as conceptualised here, their knowledge-for-teaching. The combination of knowledge categories as demonstrated above appears to be lacking here. The writing style and inclusion of references to sources is a well-known formula that reflects the academic context of the examination. Relying on course literature like this is a familiar practice which characterises scholarly writing. Considering how learning cultures may affect the writing of examinations (Adalberon, Hauge, & Säljö, 2019; Dysthe, 2007), it is tempting to infer that the second step of the video examination design is more similar to known formats than the first step. Even though the number of examination reports investigated here is limited, the content of the sample would suggest this pattern is present, which then calls for closer investigation.

All in all, this study sheds light on how video may impact a full-scale digital examination for 142 pre-service teachers. In line with the extensive research on video use in teacher education (Blomberg et al., 2013; Gaudin & Chaliès, 2015; Grossman, 2005), the findings underscore how visual and audible representations of classroom events are powerful tools. Dependent to a degree on the content and length of the recorded events, the video provides the students with the opportunity to reflect on the complexities of teaching and learning and to conceptualise their perceptions across knowledge categories. The background and motivations for implementing the actual examination design, based on earlier research findings, have been an important starting point for the testing and development of the design (Lund & Engelién, 2015; Lund, Bakken & Engelién, 2014). However, some of the pre-service teachers reported that they found they were unprepared (Adalberon, Hauge, & Säljö, 2019), which raises questions as to whether extended training in observation and analysis of video in advance of the examination would improve their opportunities to demonstrate knowledge. Previous investigations on video technologies with new affordances underscore the need for the integrated use of video in the course as a success factor (Blomberg, et al., 2013; Pape & McIntyre, 1993), and further research on this issue is recommended.

Conclusions

Examinations in teacher education are key components of the pre-service teachers' learning, and to be meaningful, they should contain exercises that reflect the diversity and complexity of the teaching profession. The investigated video examination design, and its new affordances, has proved to be promising in this regard.

Video technology, in general, has become a tool for stimulating and developing pre-service teachers' reflections on and knowledge of teaching and learning during campus coursework. The use of video as a tool for feedback on fieldwork in school (e.g. internship) is also a growing field in professional development (Blomberg et al., 2013; Gaudin & Chaliès, 2015; Grossman, 2005). The increased use of video in e-portfolios for assessing teacher performance and reflection adds to this development (cf. Bastian et al., 2016; Pegrum & Oakley, 2017). The current study contributes to the understanding of this field by illuminating how affordances of the examination design influence pre-service teachers' approaches to

demonstrating their knowledge of teaching and learning in an examination situation. In this case, the students were given the opportunity to demonstrate a wide range of their teacher-relevant knowledge. Even though this design, like many others, relies on written answers for demonstrating theoretical knowledge, it affords the use of practice-related knowledge. If the video examination expands the opportunity for pre-service teachers to demonstrate a greater portion of their acquired knowledge, it may also have a beneficial effect on the whole learning process in the context where it is used.

However, in assessing the findings of the study, the video examination design can be said to challenge the institutional culture and the students' previous experiences with examinations. These issues are related. Despite an inclusive attitude and history of technology use in this teacher-education institution (Hauge, 2015), the video examination design must be looked upon as not yet institutionalised. The willingness displayed in adjusting and developing its education and technology practices at different levels to support the new design varies (cf. Ludvigsen, Lund, Rasmussen, & Säljö, 2011; Ritella & Hakkarainen, 2012; Saarivirta & Karppinen, 2016; Voogt, Knezek, Cox, Knezek, & ten Brummelhuis, 2013). Most students can be regarded as novices in practising the skill of video analysis (Kurz & Batarelo, 2010), and thus they must learn how to adopt an analytical stance to teaching and learning practices that are documented through video excerpts so they are better equipped to relate theoretical and practical experiences to each other. To unlock the potentials of the video as an examination tool, institutions must be willing to invest whatever it costs to prepare all involved parts properly.

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Article 3: Providing assessment feedback to pre-service teachers: a study of examiners' comments

(Pre-print version)

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Providing assessment feedback to pre-service teachers: A study of examiners' comments

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Abstract

This article reports a study of written feedback comments in the context of teacher education. While feedback is believed to have the potential to improve students' learning, the concrete provision will rest upon educators' and examiners' ability and means to convey details about their assessment. In the context reported here, compulsory feedback beyond the regular grade was introduced to strengthen a teacher education programme at a Norwegian university. The interest of this study is thus to investigate how the examiners managed this task and will focus on their written comments during three consecutive years. A content analysis of 411 individual feedback comments reveals that most of them are written in a formulaic fashion closely related to the grade descriptors for the course. The discussion raises questions about inherent problems with written assessment feedback and how the standardisation of it may limit the informational value for students' learning

Keywords:

Feedback, Higher education, Teacher education

Assessment feedback in teacher education

Providing feedback to students has been described as a vital part of a formative assessment cycle (Hattie & Timperley, 2007; Villaroel, Boud, Bloxham, Bruna, & Bruna, 2019), and this type of response from educators can be conveyed in several ways. For instance, feedback may be presented through dialogue, written comments, or various types of digital media. The purpose behind the provision of assessment feedback will differ according to the context. When it comes to examinations, the aim is to give the students some insight into the assessment process and how to improve their work. While the students' uptake of this information may be challenging (Sutton, 2012; Carless & Boud, 2018), the point

is to give directions for how the learners should structure their future learning processes.

The practice of providing feedback varies. In the context investigated here, namely Norwegian higher education, no feedback beyond a grade is normally provided unless the individual student requests it after the examinations (Universitets- og høyskoleloven, 2005, §5-3). The common procedure for examiners is to assess the students' performances on the examination according to a set of pre-defined criteria and award a grade as the only form of feedback. The legal right to feedback from the examiners is not specified as a formative comment the students can learn from, but is rather a justification of how the grade was determined. In other words, in this context there is no system for giving the students deeper insight into how they could improve themselves and their learning strategies.

A few remarks about the Norwegian higher education system are necessary to clarify the context. Most of the education programmes, and teacher education in particular, are influenced by political processes, such as reforms, policies and white papers (Afdal, 2013). As in many other Western countries, recently there has been a more discernible focus on increased quality in education, and this has paved the way for various small yet significant changes in the Norwegian higher education system (Elken & Frølich, 2017).

The aim of this article is thus to investigate a local initiative where the provision of written feedback was made obligatory. At the University of Oslo a recent reform in the teacher education programme entailed several changes. For example, it was decided that each pre-service teacher should receive written feedback in a particular course. After the completing a novel video examination design, examiners would provide elaborate comments on their assessments (Lund & Engelién, 2015). This practice was meant to bolster the overall strategy of constructive alignment, and harmonise the various elements in the course. In other words, they wanted to renew the assessment cycle and improve the alignment between the examination, feedback and other components in the course, such as teaching and practice. Providing feedback would potentially give the students insight into the assessment process, and there would be learning benefits as suggested in research literature.

Considering the local initiative as a rare and novel case of providing mandatory feedback, this provides a rich opportunity to broadly investigate feedback practice and its role in the learning process.

Research interest

The objective of this study is to shed light on a case where feedback was given to student teachers after completing a recently developed video-examination design. The investigation will cover three years of practice, and the overriding research question is: How did the examiners approach the task of providing feedback to the pre-service teachers?

The following sub-questions guide the analysis:

- How was the feedback organised?
- What characterises the written content?
- What kind of information does the feedback provide?

Categorisation of feedback is here inspired both in the findings from studies conducted by Ivanîc, Clark and Rimmershaw (2000) and Hughes, Smith and Creese (2015).

Theoretical framework

The socio-cultural perspective has been chosen for the analysis. This perspective will direct attention on the various tools used in this context. Higher education is known to be characterised by its various literacies (Ivanîc et al., 2009) and the use of specialised concepts, often described as ‘academic’ or ‘scientific’ (Vygotsky, 1978, p. 103). Writing to an unknown reader, such as when conveying feedback, involves a high level of abstraction (John-Steiner, 2007), and writing under these circumstances of full anonymity implies that the examiners have to be precise and clear in their formulation. The feedback will also rest upon a shared understanding of what the involved concepts mean.

Research on feedback

Research on feedback practices has grown markedly (Carless, 2015, p. 190) in recent years, which has led to several reviews on the topic (Hattie & Timperley, 2007; Evans, 2013; May 2013; Li & De Luca, 2014). Issues that have been treated frequently recently are, for instance, feedback as part of formative assessment (Knight, 2002; Shute, 2008), digital systems for feedback (Henderson & Phillips, 2014) and the involvement of students as active participants in the feedback

process (Boud & Molloy, 2013). These various analyses provide a rich background that outlines the many roles feedback may have in the assessment process.

Feedback as a term is used to describe various practices, and it appears to be difficult to find a definition that completely covers all the contexts where feedback occurs (Price, Handley, Millar, & O'Donovan, 2010). Currently, research seems to be oriented towards how feedback functions as a practice that pertains to assessment, which means that students are supposed to learn from the information they are given (Evans, 2013; Carless & Boud, 2018). But improving formative aspects of assessment through feedback has proven to be a challenging task. According to a number of researchers, the learning potential of feedback depends on the presence of certain factors, where some potential challenges have also been mentioned (Lizzio & Wilson, 2008; Shute, 2008). For instance, Higgins, Hartley and Skelton (2001) found that students rarely use the feedback they receive and point out that the communication between examiners and students is 'inherently problematic' (Higgins et al., 2001, p. 272).

There are many varieties when it comes to the format of the feedback, and each one has its possibilities and limitations. Feedback in the form of a personal dialogue seems to be preferred by both students and lecturers (Handley et al., 2007; Mulliner & Tucker, 2017). Although this format can be time-consuming, it facilitates communication between students and educators (Blair, Wyburn-Powell, Goodwin, & Shields, 2014; Carless, 2016). Rather than giving unidirectional and closed comments, the dialogue invites one into an in-depth conversation about the performance.

Feedback is often presented in the form of written comments (Jolly & Boud, 2013), as has been done in the case reported here. One related example is reported in the study of Bailey and Garner (2010), where educators were given the opportunity to reflect on their feedback practices in qualitative interviews. This study finds a tension between the idealised role of feedback as an element of formative learning and the practical aspect of being accountable for the grading (Bailey & Garner, 2010). In short, the educators write their feedback with more than one reader in mind. Of course, they address the candidate, but also any other potential authority that may hold them accountable for the content. As a result, some examiners reduce their comments to a minimum.

Written feedback commentaries may contain various types of information. In research on this topic it is not uncommon to identify different categories that reflect the intention behind the text. In a study by Hughes, Smith and Creese (2015), written comments on both drafts and final work in various study programmes were investigated through a profiling tool consisting of feedback categories. These categories were a) praise, b) recognising progress, c) critique, d) advice and e) clarification (Hughes et al., 2015, pp. 1083-1084). They found several possible patterns in the material, for instance, that the comments on the final work were dominated by what could be characterised as ‘closed’ remarks. This finding implies that examiners tend to write their feedback as a concluding comment, rather than suggestive notes for further negotiation. In a similar study on feedback, Ivančić, Clark and Rimmershaw (2000) investigated comments on finalised texts and found that different tutors tended to have different styles of feedback. Finding tendencies across the various examiners, they identified some broad categories of feedback defined as: a) explaining the grade in terms of strengths and weaknesses, b) correcting or editing the student’s work, c) evaluating the match between the student’s essay and an ideal answer, d) engaging in a dialogue with the student, e) giving advice which will be useful in writing the next essay, and f) giving advice on rewriting the essay (Ivančić, Clark & Rimmershaw, 2000, p. 55).

The practice of providing feedback as written comments has certain limitations. Considering the effects of written comments, Orsmond and Merry (2011) and Glover and Brown (2006) investigated the depth and characteristics of such comments and found that the content focused on details about the performance. In their view, there are several shortcomings to such feedback, and their overall experiences can be summarised under three points that are also rooted in other relevant literature:

- Students do not understand the academic discourse used to underpin assessment criteria (Glover & Brown, 2006, p. 12)
- Feedback was ‘focused on assignment content rather than feeding forward’ (Orsmond & Merry, 2011, p. 133)
- Tutors do not expect the students ‘to build on the piece of work in future models’ (Hughes, Smith, & Creese., 2015, p. 1090)

These results stand in contrast to the findings in Ferguson (2011), where students report that they prefer written feedback when it is constructive. This response has been supported in a later study by Dowden, Pittaway, Yost & McCarthy (2013).

To summarise, research shows that feedback is commonly provided as written comments, even though there are potential pitfalls with this format. Examiners should pay attention to how such written comments are formulated so they can serve as an effective and valuable part of the students' learning process. In the context of professional education, where students are supposed to learn 'about,' 'for' and 'through' practice, special attention should be paid to the pedagogical aspects of feedback (Warhuus, Blenker, & Elmholdt, 2018).

Background: The assessment process

A video-examination design was implemented in one of the courses to create a bond between the various knowledge domains taught in the course and what can be displayed in the assessment format (Lund & Engelien, 2015).

The video-examination design, introduced in January 2103, involved a video case as the focus for the tasks summed up below:

- Make observations and analyse them by using relevant theory
- Formulate a thesis statement based on the observations
- Discuss the thesis statement by using relevant theory

A video case will be +/- 10 minutes of video-recorded classroom activities from an authentic setting. The pre-service teachers are invited to a video analysis seminar prior to the examination and may test themselves on example cases that are available online. Although the examination will be submitted individually, the pre-service teachers may sit anywhere they like, collaborate with peers and use such tools like notes and course literature to compose their answers (for elaborate descriptions, see Adalberon, 2020). The point is to make a qualified observations and analysis of the video where they display their ability to notice and reflect over professionally relevant situations rather than just displaying knowledge of theories alone (Lund & Engelien, 2015; Adalberon, Hauge, & Säljö, 2019). The assessment process is concluded when the pre-service teachers receive their grade and feedback comments. This video examination format is not utilised in other courses.

The grade descriptors for the video examination are identical during the three years investigated here and were made available on the course web page from the beginning of each year the examination was scheduled. The content is presented in a table where general characteristics of each grade are defined, and where three categories with specific descriptors are given to indicate what is vital for a very good performance. These categories are:

1. Observation, interpretation and formulation of the thesis statement
2. Ability to assess and independence
3. Language, structure and formalities

Grade A is described as:

Outstanding

An excellent performance that clearly stands out. The candidate shows very good assessment skills and a high degree of independent thinking.

The other categories include more details about the criteria for an A:

1. The candidate gives a very precise description of key observations in the case and formulates a relevant thesis statement that is focused on Subject Didactics II (name of the course). The grasp of pedagogical and didactic theory is very relevant to the problem. The candidate shows excellent knowledge and understanding of the fields of study. Experiences drawn from the teacher training are very relevant to the discussions.
2. The candidate argues very clearly and assertively and substantiates arguments with reference to the course literature. The candidate is clearly able to see the connection between pedagogy and subject didactics. Examples from theory and practice are used with clear critical objectivity.
3. The language is very accurate and assertive with a minimum of paraphrasing. The text is well structured. Formalities are satisfied.

(Universitetet i Oslo, 2016) [my translation]

Many of these phrases and the wording in general are similar, if not identical, to the national grade description system (Universitets- og høgskolerådet, 2011).

The descriptors are presented in different 'boxes' where each category for the various grades is described, A through F. In comparison to the example above,

grade B indicates *very good performance*, and *the candidate shows very good assessment skills and independence*. The difference between an A and a B is thus the variation between an *outstanding* and *very good* performance, respectively. Following the same pattern, grade C is *satisfactory* with respect to the mentioned key abilities, grade D is *acceptable*, and so on.

The examiners who have assessed the examination and provided feedback comprise a team of educators with relevant backgrounds. Some are internal examiners and about half are external to the institution where the examination is to be given. They have not met beforehand, and all have received an e-mail with the necessary information about the examination. After grading the exams individually, they discuss any differences between the awarded grades and calibrate their assessments. The feedback, the result of a similar discussion, is written as a separate text, anonymously, and then mailed to each student.

Methodology

This investigation is based on the written feedback given to each pre-service teacher after completing the video examination over a period of three consecutive years from 2014-2016. The material is summarised in Table 1:

(Table 1: Overview of the data, year of examination, number of students, number of words, and average number of words per student.

Table 1: General information about feedback data				
Year	when feedback is given	# of students	Total # of words in the feedback document	# average word per feedback
2014		136	11247	~83
2015		142	15457	~109
2016		143	16693	~117

The analysis has been performed in three stages: a) an initial exploratory read-through of the material, b) a software-driven analysis of the material and c) a qualitative reading of idiosyncratic responses.

Initial reading

This exploratory stage was meant to reveal some general features of the material, such as its format, structure and style. Without paying much attention to details, it provided a necessary overview for developing the rest of the analysis.

Software-driven analysis

After the first stage, an appropriate analytical model was chosen to categorise the material. It was evident that the examiners' comments contained many of the same phrases that were iterated and rewritten in various forms, even though the material was made over three years with different examiners. An approach similar to corpus-based analysis (Stubbs, 1996; Randall & Mirador, 2003) was deemed viable. Although this approach is usually applied to investigate large amounts of text for linguistic purposes (Stubbs, 1996; Nesi & Gardner, 2012), the general principle of finding keywords and clusters of words was applied to this material to find patterns that characterise the content.

The software used to aid the process was QSR's N-Vivo 11. The functionalities in this programme proved helpful in organising and coding the material. Such functions as 'word frequency,' 'text search' and 'word tree' were also used to obtain an overview of the data.

Qualitative analysis

The final stage of the analysis was a qualitative investigation of the written feedback, where the aim was to find idiosyncratic responses from the examiners. Since the majority of comments followed a formulaic pattern, this stage of the analysis focused on the content that deviated from this line. The findings were categorised and summarised afterwards in what might be called an abductive process. The feedback comments were first organised exploratively with the node-functionality in N-vivo, and given a temporary descriptive label. Their content was to be considered against previous research. Suggested categories by Hughes, Smith and Creese (2015) and Ivančić, Clark and Rimmershaw (2000) were deemed sufficient to cover the limited number of elaborate comments found in the material. It was somewhat difficult to apply the categories as they were originally proposed. As the examination papers were finalised texts, some categories, such as 'advice on rewriting', were not deemed relevant in this context. Moreover, some categories, such as 'praise'/'criticism' and 'explain the grade in terms of strengths/weaknesses' tend to overlap, so a modified set was established to cover the essence of the idiosyncratic feedback.

Presenting a case

Among the various written examples of feedback one particular case from the data was selected to provide some insight into how the message in a typical feedback comment was formulated. During the qualitative analysis stage, five texts were found as representative, considering their a) length, b) content and c) organisation, of the overall feedback. One of these has then been chosen as a case that is representative of the rest and, at the same time, provides interesting details.

Ethics

The material used in this research project was anonymised, and thus no names have been mentioned, neither the students' nor the examiners'. The required permissions has been procured from the involved parties, and the Guidelines from the Norwegian Centre for Research Data (NSD) have been complied with when gathering and analysing the data. Considering the original feedback was written in Norwegian, care (i.e. using three translators) has been taken to ensure accurate translation of the material to preserve the meaning.

Findings

This section will be organised into three subsections; a brief overview of the organisation and composition, a look at which phrases and expressions are commonly used by the examiners, and idiosyncratic comments where the examiners have given specific advice.

Organisation of the feedback

The analysed documents cover three consecutive years of feedback, where several examiners have been involved in the process of writing it. However, there is a striking uniformity to the material and its structure. Each document has been organised with each candidate's number in a row, where the feedback is given in five columns pertaining to these categories:

1. Formulation of the thesis statement
2. Use and integration of pedagogical and subject-didactics literature
3. Ability to assess, and independence
4. Language, structure and formalities
5. Other comments

Since categories 1, 3 and 4 are almost identical to the categories used in the grade descriptors presented above, it is reasonable to assume that the categories have been based on these descriptors.

Standard phrases in the feedback

The feedback contains a great number of expressions and phrases that are used repeatedly across all three years investigated here. Some of the recurring expressions, found in the material by using a search function, are presented in Table 2:

(Table 2: Expressions used in the feedback (first column), expressions found in the first, second and third year.)

Table 2: Frequently occurring expressions			
Expression (Translated from Norwegian)	1st year Per cent	2nd year Per cent	3rd year Per cent
The candidate describes (important) observations	4.4	24.6	25.9
The language is precise	5.1	15.5	10.5
Formulates a relevant issue	4.4	14.1	6.3
The grasp of pedagogical and didactic theory is relevant	11.0	16.2	15.4
The candidate argues well	0.7	17.6	21.0
Good language	11.0	18.3	11.9
Formalities are fulfilled	11.0	44.4	34.3
Good structure	13.2	11.3	6.3
Critical objectivity	9.6	62.7	11.9
Precise and assertive	5.1	29.6	9.1

The content reveals a tendency where some expressions, and variations of these, are repeated quite frequently over the three years. Considering that not all the examiners were the same over the three-year period, the choice of wording is strikingly similar. The provision of feedback seems to be following a pattern where certain expressions are utilised in the feedback.

The connection to the grade descriptors is evident. Keywords and expressions from Table 2, such as *critical objectivity*, *structure*, *assertive*, are also part of the earlier presented criteria set for this video-case examination. The expressions are almost identical and seem to be based on much of the same logic.

Furthermore, the many expressions used in the feedback tend to be concentrated on certain aspects of the students' texts. Some examples of this:

- The observations must be important ones
- The language must be precise
- The thesis statement must be relevant
- The grasp of theory must be relevant

These specific expressions point out various issues the examiners find vital for the students' performance, and the similarities between the feedback and grade descriptors are clear. What the examiners consider to be *important*, *precise* and *relevant* is not made explicit in these standardised expressions and has not been elaborated on further. Most of the data suggest that the bulk of the feedback is organised in a formulaic fashion, and strongly tied to the pre-defined criteria.

Case: Feedback on the individual level

The written feedback to one of the students commenced by commenting on her performance by pointing to issues that belong to the first category, namely observations and the formulation of a chosen thesis statement. Here the examiners write:

Relevant observations and assessments. The candidate describes observations in the case and formulates an thesis statement for subject-didactics [cites the thesis statement].³

The first brief sentence serves to inform the student that her observations and assessments were 'relevant'. This term is used to describe the quality of the candidate's observations and assessments, but is not elaborated on or explained anywhere. Thus, the meaning behind the comment ~~thus~~ rests upon the premise that the addressee knows what it implies. The second sentence, which is mainly descriptive, confirms that the candidate has fulfilled a part of the task. No additional comments of an evaluative nature are included.

In the next section of the feedback, which is called 'use and integration of pedagogical and subject-didactics literature', the examiners point out that:

³ My translation from Norwegian in italics.

The amount of course literature and subject-didactics theory are relevant to the thesis statement. The candidate displays knowledge and understanding of the fields of study without obvious deficiencies.

Once again, the examiners state that the student has used ‘relevant’ literature in the examination and comment on the knowledge displayed.

With respect to the ability to assess and the independence of the candidate, it is mentioned that:

Experiences from practice that are drawn upon are fairly relevant for the discussion. The candidate argues with assertiveness, to a certain degree. The candidate can see connections between pedagogy and didactics. Theory and experiences from practice are used with critical objectivity. The summary and conclusion capture the thesis statement and the discussion. [my translation]

Again, these comments pertain to the grading criteria, and it is worth noting the expression ‘fairly relevant’. The examiners appear to distinguish between ‘relevant’ and ‘fairly relevant’ by using grading adverbs. As in the grade descriptors, they differentiate between the levels of performance by using graded descriptions.

In the final section, the examiners continue to use expressions that are similar to the previous ones:

The language is fairly good, but from time to time it is characterised by paraphrasing. The text has a clear structure. Formalities are, to a reasonable degree, fulfilled.

The adverb ‘fairly’ is used to moderate the description of the performance, and quantitative comments such as ‘to a reasonable degree’ have been added. This choice of words may have been used to indicate that something about the performance is not entirely satisfactory from the examiners’ point of view. Here again, there is no elaboration on this point in the feedback.

To summarise, the case described here represents an average example of how feedback has been given to the students over the three years in question. As demonstrated, the feedback is connected to the grading criteria and tends to contain short sentences referring to the examiners’ assessments. As a consequence, the feedback is not particularly rich in detail, and the assessment rests on keywords that are used to describe the quality of the students’ performance, such as ‘relevant’

or ‘important’. The message the comments convey would thus be dependent on a mutual understanding of such terms.

Idiosyncratic comments

Most of the above-mentioned comments are related to the grade descriptors and justification of the grade. However, the examiners would sometimes provide more elaborate comments about the candidates’ performances beyond the formulaic examples. In the following, some of the instances of elaborate feedback will be investigated closer. The chosen examples have been categorised into two categories of feedback: praise/criticism and advice for writing.

Praise/criticism

Most of the feedback has been written in a neutral, descriptive format, but some examples show how the examiners also make value-laden assessments where both praise and criticism are included. For instance, one extract illustrates how the examiners start by praising the use of the case and at the same time offer some constructive criticism:

It is positive that the candidate chooses to use the case actively, but the discussions could have been elevated to a more theoretical level and been tied more closely to the subject-didactics themes that emerge from the thesis statement.

This evaluation by the examiners displays a different approach than seen in the previous section. They point to a specific instance in the examination report and analyse it in terms of strengths and weaknesses. In this instance, the examiners explain that using the case (actively) is a positive approach, but other elements could have been improved. These mentioned issues are, however, not part of the formal grade descriptors. To some extent, the comment can be interpreted as a suggestion for improvement.

Another example of critique from examiners is seen in this extract:

Shows that he is not capable of seeing the large connections between pedagogy and subject didactics, which is clear to see through the lack of theoretical grounding.

Without referring back to the formal grade descriptors, the examiners believe that the student has not proven that he has any insight into the ‘large connections

between pedagogy and subject didactics. Compared to the previous example, this statement is less constructive and represents an uncommon way of presenting criticism.

Advice for writing

In some of the feedback to the candidates, the examiners make specific suggestions as to how they could improve their examination reports. For instance, the examiner might give advice on key areas in the examination report that could be improved: 'Has chosen a thesis statement comprising two questions; it would have been better with a simplification'. Although this is a brief suggestion, it clearly stands out when compared to the standardised way of providing feedback. This is a particular piece of advice that may be used for future reference.

In another similar example given to the same candidate the examiner says 'The candidate could advantageously have utilised another reference in her discussion of start-ups (...).' This is an even more specific comment, and direct advice to the student on how to improve her work. Without giving any examples of a better reference, the examiner hints that the candidate has based her discussion on a source that has weak relevance.

Other examples from the material show how the examiners could also be more specific in their advice:

For instance, Björkman (2010) is used as one of four texts from the curriculum covering the theme of oral communication in English. According to the thesis statement, it would have been desirable that three others had been drawn in (Rindal 2014; Swain 2001; Cogo, 2012).

This comment points to a perceived shortcoming in the examination report and gives examples of the other references that could have been used to gain a better result.

To summarise, examples from both categories illustrate that the examiners are sometimes inclined to comment on other aspects than the ones mentioned in the official grade descriptors and draw upon their own knowledge.

Discussion

This article has focused on a context where examiners are giving feedback to pre-service teachers after assessing their performance on a video-case examination in

teacher education. Such provision of feedback may be perceived as a writing genre which requires comprehensible note-taking and involves being fair and concise. Hence, a balance between various considerations is required.

The first issue that should be pointed out here, and which is the most obvious aspect, is that the majority of the feedback in this study is characterised by the use of similar or even standardised phrases. This pattern would thus indicate an emerging standardised practice of providing feedback over the three years investigated. Various examiners were involved in this period, but apart from a slight increase in length, the feedback comments would remain quite uniform. Considering that educators commonly have their own style of providing feedback (Ivančić, Clark and Rimmershaw, 2000), such similarity across examiners strengthens the argument that a standardisation has taken place. The content of the repeated phrases and expressions can be traced directly to the wording found in the grade descriptors through a striking similarity in words and sentences. Most of the feedback seems to be information on whether the performance was in accordance with the grade descriptors. It is also possible to see a close connection with the national template for grade descriptors (Universitets- og høgskolerådet, 2011).

This pattern leads to a second and related point, namely a potential tension between ~~the~~ standardisation of feedback, on the one hand, and the need to provide sufficient information about the assessment processes on the other. These two concerns are not necessarily mutually exclusive, but may be problematic for examiners in some cases. Following the logic of Bailey and Garner (2010), who inferred that feedback is written for more than one reader, it would seem that some of the same conflicting interests are present in this material. In the emerging standardisation seen in a great portion of the feedback, it is possible to recognise an element of accountability, where feedback is linked closely to grading guidelines and other official documents. The idiosyncratic comments demonstrate a concern for the student's learning outcome, and challenges standardisation.

This tension is visible in the instances where the examiners elaborate on their feedback and add other aspects than the ones covered by the grade descriptors. Breaking the pattern in this way indicates that the examiners have seen the need to comment on other things than the pre-defined aspects. This approach is closer to the notion of 'double duty' (Boud, 2000), which means that feedback should justify the grade *and* inspire future learning. The formalised and standardised format

appears to cover the former, while the few instances of elaborate feedback cover the latter. The formulaic feedback will have the potential to convey some meaning, but will seldom include constructive comments requested by students (Dowden et al., 2013; Ferguson, 2011)

The third point in this discussion is that the investigated feedback relies on a shared understanding of certain frequently used concepts. Following the principle of deliberate semantics, the original meaning behind the examiners' feedback to the candidate rests upon a shared understanding of the terms used in the comments, which is also at the core of general language appropriation (Vygotsky, 1978). For instance, terms such as 'relevant' and 'good' are used quite often, but no examples or explanations are provided to tell the student what these terms mean. In other words, the use of such terms is insufficiently explicit, and hence the feedback may become ambiguous and can be interpreted in various ways. Written feedback is thus prone to the well-described and inherent dilemma of writing, namely how the original meaning is conveyed and what the addressee ultimately interprets (Bal, 2009). Since the investigated feedback also follows the wording of official standards closely, the use of criteria or grade descriptors will represent yet another problem; how should generalised terms be understood across levels in the higher-education hierarchy?

Written feedback has some inherent limitations that have been described in previous research (Glover & Brown, 2006; Orsmond & Merry, 2011; Hughes, Smith, & Creese, 2015). Such issues as understanding the academic discourse, giving feed-forward messages and the educators' attitudes are all concerns that need to be addressed.

In short, this study provides some insight into a process where a chosen feedback model was implemented in order to inform and guide the pre-service teachers after completing a new video-examination format. In light of such ideals as stimulating students' assessment literacy (O'Donovan, Rust, & Price, 2016) and handling future learning processes (Hattie & Timperley, 2007), the feedback, as it is formulated in this study, has obvious limitations. Even though there are examples of giving individual hints and tips, most of the comments are written in close accordance with a set of grade descriptors. The result is feedback that will lack the depth suggested in the literature, and does not then harmonise with the original intent of 'constructive alignment' in the course.

Conclusion

Before any conclusion can be drawn it is important to point out some limitations of this study. Since this research is based on written content, little information about the examiners and their working conditions is available. As a consequence, it is not possible to make any strong claims about the writing processes, such as the examiners' collaboration, discussions and special considerations they may have made.

This article aimed to investigate how feedback was given in a recently reformed teacher education programme. As a potentially valuable source for student learning, the feedback was here intended to improve the coherence between the different elements in the course. The findings indicate that the examiners chose a formulaic approach to the task, with a close relationship between the comments and the national grade descriptors. In further research, it would be interesting to investigate the examiners' decision-making process when providing feedback.

In Norwegian higher education, feedback is not given often, and thus most examiners have little experience in writing feedback comments. Being an examiner is not a certified position, and each educator has to find their way to assess student performances. Carless and Boud (2018) suggest more training for students in what they call 'feedback literacy', and it is tempting to propose similar training for examiners. Writing understandable and useable feedback is a challenging task that requires systematic practice and builds on experience over time. The education institutions are responsible for the practice of providing feedback, and should, therefore, also facilitate and encourage training and systematic improvement.

Last but not least, it is worth raising the question as to whether the current focus on standardisation reduces the examiners' opportunities to give a proper feed-forward message to students, particularly in a written format. The notion of establishing standards or criteria independent of the examiners is troublesome. Standards set a frame that will define what dimensions should be included or excluded from the assessment provided. Moreover, standards will entail some degree of interpretation. For instance, a certain understanding of a 'good' or 'outstanding' performance will be the outset when writing standards. The examiners will later have to interpret and conceptualise the terms before they

remediate their understanding to the students through writing. This issue relating to the establishment of standards has already been noted in other nation-wide projects (Hopfenbeck, Throndsen, Lie & Dale, 2012). At the final stage, the students will have to establish some understanding of the terms, and here everything could become a chain of possible misinterpretations. Reducing the complex process of quality recognition into a simple set of standards seems to result in a feedback-format with little depth, as seen in this study.

The required understanding of quality is essential in any assessment activity and should be negotiated among educators who are responsible for the overriding learning process, and discussed with students to create a better understanding of the discourse. It is thus problematic to make central guidelines for this understanding. An approach like this, without the involvement of the implicated parties, will probably result in a ritualised method for providing feedback that has limited value.

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Appendix 1: Approval from NSD



Norsk samfunnsvitenskapelig datatjeneste AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES

1 4dl atd Hårfages gate 2

Erik Adalberon

nsd(Oh r10)
Institt for pedagogikk
Isd LIII.)
Universitetet i Agder

Serviceboks 422 vvwv uih no 4604 KRISTIANSAND S org nr 321884

Vår dato: 14.08.2015

Vår ref:44051 13 / AGL

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 13.07.2015. Meldingen gjelder prosjektet:

44051
Behandlingsansvarlig
Daglig ansvarlig

Fra intensjon til tolkning, en studie av videocase-eksamen i høyere utdanning
Universitetet i Agder, ved institusjonens øverste leder
Erik Adalberon

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstillende kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 01.02.2016, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Jørtl Henrichsen



Audun Løvlie

Audun Løvlie tlf: 55 58 23 07

Vedlegg: Prosjektvurdering

delingskontorer / Distrikt Offices.

K15

ost.(.) NSD 1 Postboks 105% 0316 Tei: 22. 85 11 no

TROMSØNSD, NOIGJQS teknisk-naturv:tenskapelige univ'etsittett 7491 'llcrrÅhG'lm, 'tel. +41-73 59 19 07 kvllle

svacva@svt ntnllno

TROMSØNSD SW, I 9037 Tel: +47-77 44 43 36 nsdmaa@svuil no



Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 44051

Utvalget informeres skriftlig og muntlig om prosjektet og samtykker til deltakelse. Informasjonsskrivet er godt utformet.

Personvernombudet legger til grunn at forsker etterfølger Universitetet i Agder sine interne rutiner for datasikkerhet.

Forventet prosjektslutt er 01.02.2016. Ifølge prosjektmeldingen skal innsamlede opplysninger da anonymiseres.

Anonymisering innebærer å bearbeide datamaterialet slik at ingen enkeltpersoner kan gjenkjennes.

Det gjøres ved å:

- slette direkte personopplysninger (som navn/koblingsnøkkel)
- slette/omskrive indirekte personopplysninger (identifiserende sammenstilling av bakgrunnsopplysninger som f.eks. bosted/arbeidssted, alder og kjønn) - slette digitale lyd-/bilde- og videoopptak

Appendix 2: Agreement with UiO

Det utdanningsvitenskapelige fakultet
Institutt for lærerutdanning og skoleforskning

Til

Instituttleder Astrid Birgitte Eggen

Institutt for pedagogikk

Universitetet i Agder

Dato: 26.6.2015

Bruk av materiale fra lærerutdanningen ved ILS i forskningsprosjekt ved
UiA

Vi viser til brev 5.6.2015 med forespørsel om bruk av tidligere eksamensoppgaver, besvarelser og sensur der videocase inngår, samt intervju med studenter.

Stipendiat Erik Adalberon ved UiA gis tilgang til materialet i sitt doktorgradsprosjekt under veiledning av professor Roger Säljö og professor emeritus Trond Eiliv Hauge under forutsetning av at prosjektet er meldt NSD, og at en vitenskapelig ansatt ved ILS står som medforfatter på alle publikasjoner skrevet på grunnlag av analyse av dette materialet.



Rita Hvistendahl

Instituttleder



Postadresse: Institutt for lærerutdanning og skoleforskning
Pb. 1099 Blindern,
0317 Oslo E-post: ils-
kontakt@ils.uio.no
www.uv.uio.no/ils

UNIVERSITETET I AGDER

Dato: 05.06.2015 Besøksadresse: Gimlemoen
25 E
Direkte:
3814113
5 Faks.

Til Institutt for lærerutdanning og skoleutvikling ved Instituttleder Rita Hvistendal

Stipendiat Erik Adalberon ved institutt for pedagogikk, UiA, har tidligere vært i kontakt med professor Andreas Lund, ProTed UiO for å utrede mulighetene for et forskningssamarbeid vedrørende bruken av videocase i lærerutdanningen (vedlegg). Samarbeidet dreier seg om å utarbeide en artikkel om denne praksisen, der intensjoner ved utforming av eksamen, eksamensbesvarelser, og sensors vurderinger sees i sammenheng ved bruk av materiale fra ILS studenter.

Svaret fra ProTeds leder Andreas Lund (vedlagt) er at ILS har eierskap til det meste av ønskelig materiale, og derfor sender vi herved en forespørsel til om bruk av følgende materiale for analyse:

.Eksamensoppgaver som har blitt gitt tidligere, inneholdende videomateriale og oppgavetekst

- Anonyme eksamensbesvarelser gjort på bakgrunn av de ovennevnte oppgaver - Sensors vurderinger av besvarelsene
- Eventuelt tilgang til å intervjuere studenter som har gjennomført eksamen med videocase (må i tilfelle søkes NSD),

Artikkelen skal utformes av Erik Adalberon, under veiledning av professor Roger Säljö og professor emeritus Trond Eiliv Hauge, som en del av hans doktorgradsarbeid.

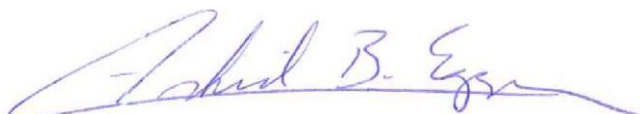
Eventuelle avtaler rundt innsyn og bruk av materiale vil kunne utarbeides i fellesskap,

Vennlig hilsen



Erik Adalberon
Doktorgradsstipendiat
UiÄ

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Astrid Birgitte Eggen
Professor/instituttleder
UiA

Appendix 3: Interview guide

Hovedtema	Undertema	Intervjuspørsmål
Oppfattelse av rolle som student	<p>-Opplevelse av studiet</p> <p>-Motivasjon</p> <p>-Oppfatning av læreryrket</p> <p>-Involvering</p>	<p>:Kan du si litt om hvordan du opplever livet som student</p> <p>:Hvorfor valgte du lektorstudiet?</p> <p>:Hva tenker du om det å bli lærer?</p> <p>:Hva er din drivkraft for å undervise?</p> <p>:Hva vil du si er drivkraften for arbeidsinnsatsen din?</p> <p>:Har du hatt en forforståelse eller filosofi rundt det å være lærer; kan du si litt om det?</p> <p>:(oppfølging) Har noe endret seg gjennom studiet, har oppfatningene forandret seg?</p> <p>:Hva gjør du konkret for å oppnå best mulig kompetanse som lærer? Hva legger du vekt på i studiet?</p>
Studievaner	<p>-Disponering av tid/krefter</p> <p>-</p> <p>Studiemetoder som benyttes</p>	<p>:Hvor mye jobber du med studiet til daglig?</p> <p>:Blir det en jevn innsats, eller varierer denne?</p> <p>:Hvordan jobber du best?</p> <p>:Hva er ditt forhold til digitale medier i studiene? Bruk, hyppighet, og lignende.</p>
Forberedelse til eksamen	<p>-Forberedelse generelt</p> <p>-Forberedelse til videocase-eksamen</p>	<p>:På hvilke måter, og i hvilken grad føler du eksamen styrer studieinnsatsen din?</p> <p>:Hvordan forbereder du deg vanligvis til eksamen?</p> <p>:Hva skal til for at du føler deg godt forberedt?</p> <p>:Før du skulle ha eksamen med videocase i vår, hvordan så du for deg at dette kom til å bli?</p> <p>:Hadde du noen strategier for å forberede deg best mulig? Evt, hvilke?</p> <p>:Hvordan var magefølelsen før selve eksamen?</p>

	<p>-Refleksjon rundt forberedelsen og utfallet av eksamen</p>	<p>:Hadde det noen betydning at den bare telte 50%?</p> <p>:Etter at eksamen var gjennomført, tenker du forberedelsene kunne vært gjort annerledes?</p> <p>:Er det noe du tenker du kunne brukt mer eller mindre tid på for å bli mest mulig forberedt?</p>
Oppfatning av eksamen	<p>-Opplevelse av videocase-Eksamen</p> <p>-Refleksjon over valg i eksamens-situasjonen</p> <p>- Eksamenstype som vurdering av egne evner</p>	<p>:Hvordan opplevde du selve eksamen, og eksamenssituasjonen?</p> <p>:Si litt om opplevelsen av video-eksempelet (fokus, innhold, tolkning)</p> <p>:</p> <p>:Husker du noe av hvordan problemstillingen ble til, og hva som gjorde at du valgte denne?</p> <p>:Hvordan brukte du litteratur underveis (oppslag, lesing, referanse)</p> <p>:</p> <p>:Synes du denne formen for eksamen gav mulighet til å vise det du har lært og det du kan?</p> <p>:Synes du det gav mulighet til å vise dine evner som lærer?</p> <p>:Var det noe som burde være annerledes?</p>

Appendix 4: Author declaration, Roger Säljö

Göteborgs universitet
Roger Säljö, professor

20210312

Ang medverkan vid författande av artikel av Erik Adalberon

Jag deltog som handledare i arbetet med artikeln “Pre-service teachers’ experiences with a digital examination design: The inter-relation between continuity and change in an institutional context” (publicerad i *Acta Didactica Norge*, 13(2)). Mina insatser består i deltagande i planering av forskningen och bidrag till författande. Den empiriska insamlingen av data liksom analysen svarade Erik för. Erik utarbetade också manuset under min och T. E. Hauges handledning. Jag uppskattar min insats till 20 procent av det arbete lades ner på denna artikel.

Göteborg som ovan,
Roger Säljö

Roger Säljö

Appendix 5: Author declarating, Trond Eiliv Hauge

Medforfattererklæring

E. Adalberon, T. E. Hauge & R. Säljö (2019). Pre-service teachers' experiences with a digital examination design: The inter-relation between continuity and change in an institutional context. *Acta Didactica Norge* DOI: <http://dx.doi.org/10.5617/adno.6864>

Jeg bekrefter herved mitt medforfatterskap på artikkelen nevnt over tilsvarende 20%. Min rolle i arbeidet har vært å sikre tilgang til data, henviser til aktuell review-litteratur, utforme tekstforslag og være en kritisk diskusjonspartner i alle deler i utvikling av artikkelen.

Oslo, .19.03.2021

Trond Eiliv Hauge
Professor emeritus, UiO

Appendix 6: Application NSD



MELDESKJEMA

Meldeskjema (versjon 1.6) for forsknings- og studentprosjekt som medfører meldeplikt eller konsesjonsplikt (jf. personopplysningsloven og helseregisterloven med forskrifter).

1. Intro		
Samles det inn direkte personidentifiserende opplysninger?	Ja • Nei ○	En person vil være direkte identifiserbar via navn, personnummer, eller andre personentydige kjennetegn.
Hvis ja, hvilke?	<input checked="" type="checkbox"/> Navn <input type="checkbox"/> 11-sifret fødselsnummer <input type="checkbox"/> Adresse <input type="checkbox"/> E-post <input type="checkbox"/> Telefonnummer <input type="checkbox"/> Annet	Les mer om hva personopplysninger er. NB! Selv om opplysningene skal anonymiseres i oppgave/rapport, må det krysses av dersom det skal innhentes/registreres personidentifiserende opplysninger i forbindelse med prosjektet.
Annet, spesifiser hvilke		Les mer om hva behandling av personopplysninger innebærer.
Skal direkte personidentifiserende opplysninger kobles til datamaterialet (koblingsnøkkel)?	Ja ○ Nei •	Merk at meldeplikten utløses selv om du ikke får tilgang til koblingsnøkkel , slik fremgangsmåten ofte er når man benytter en databehandler .
Samles det inn bakgrunnsopplysninger som kan identifisere enkeltpersoner (indirekte personidentifiserende opplysninger)?	Ja ○ Nei •	En person vil være indirekte identifiserbar dersom det er mulig å identifisere vedkommende gjennom bakgrunnsopplysninger som for eksempel bostedskommune eller arbeidsplass/skole kombinert med opplysninger

Hvis ja, hvilke		<p>som alder, kjønn, yrke, diagnose, etc.</p> <p>NB! For at stemme skal regnes som personidentifiserende, må denne bli registrert i kombinasjon med andre opplysninger, slik at personer kan gjenkjennes.</p>
Skal det registreres personopplysninger (direkte/indirekte/via IP-/epost adresse, etc) ved hjelp av nettbaserte spørreskjema?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Les mer om nettbaserte spørreskjema .
Blir det registrert personopplysninger på digitale bilde- eller videoopptak?	Ja <input checked="" type="radio"/> Nei <input type="radio"/>	Bilde/videoopptak av ansikter vil regnes som personidentifiserende.
Søkes det vurdering fra REK om hvorvidt prosjektet er omfattet av helseforskningsloven?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	<p>NB! Dersom REK (Regional Komité for medisinsk og helsefaglig forskningsetikk) har vurdert prosjektet som helseforskning, er det ikke nødvendig å sende inn meldeskjema til personvernombudet (NB! Gjelder ikke prosjekter som skal benytte data fra pseudonyme helseregistre).</p> <p>Les mer.</p> <p>Dersom tilbakemelding fra REK ikke foreligger, anbefaler vi at du avventer videre utfylling til svar fra REK foreligger.</p>
2. Prosjekttittel		
Prosjekttittel	Fra intensjon til tolkning, en studie av videocaseeksamen i høyere utdanning	Oppgi prosjektets tittel. NB! Dette kan ikke være «Masteroppgave» eller

		liknende, navnet må beskrive prosjektets innhold.
3. Behandlingsansvarlig institusjon		
Institusjon	Universitetet i Agder	Velg den institusjonen du er tilknyttet. Alle nivå må oppgis. Ved studentprosjekt er det studentens tilknytning som er avgjørende. Dersom institusjonen ikke finnes på listen, har den ikke avtale med NSD som personvernombud. Vennligst ta kontakt med institusjonen. Les mer om behandlingsansvarlig institusjon .
Avdeling/Fakultet	Fakultet for humaniora og pedagogikk	
Institutt	Institutt for pedagogikk	
4. Daglig ansvarlig (forsker, veileder, stipendiat)		

Fornavn	Erik	Før opp navnet på den som har det daglige ansvaret for prosjektet. Veileder er vanligvis daglig ansvarlig ved studentprosjekt. Les mer om daglig ansvarlig . Daglig ansvarlig og student må i utgangspunktet være tilknyttet samme institusjon. Dersom studenten har ekstern veileder, kan biveileder eller fagansvarlig ved studiestedet stå som daglig ansvarlig. Arbeidssted må være tilknyttet behandlingsansvarlig institusjon, f.eks. underavdeling, institutt etc. NB! Det er viktig at du oppgir en e-postadresse som brukes aktivt. Vennligst gi oss beskjed dersom den endres.
Etternavn	Adalberon	
Stilling	Stipendiat	
Telefon	97630474	
Mobil	38141977	
E-post	Erik.Adalberon@gmail.com	
Alternativ e-post	Erik.Adalberon@uia.no	
Arbeidssted	Universitetet i Agder	
Adresse (arb.)	Postboks 422	
Postnr./sted (arb.sted)	4604 Kristiansand	
5. Student (master, bachelor)		

Studentprosjekt	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Dersom det er flere studenter som samarbeider om et prosjekt, skal det velges en kontaktperson som føres opp her. Øvrige studenter kan føres opp under pkt 10.
6. Formålet med prosjektet		
Formål	På bakgrunn av et forsøk og gjennomføring av eksamen basert på videocase, er hensikten å se nærmere på hva slags tolkningsmangfold som kan oppstå. Hvordan står studentenes tolkning av videocasen i forhold til den opprinnelige intensjonen som de ansvarlige utviklerne la opp til? Hva legger sensor vekt på i sin vurdering?	Redegjør kort for prosjektets formål, problemstilling, forskningsspørsmål e.l.
7. Hvilke personer skal det innhentes personopplysninger om (utvalg)?		
Kryss av for utvalg	<input type="checkbox"/> Barnehagebarn <input type="checkbox"/> Skoleelever <input type="checkbox"/> Pasienter <input type="checkbox"/> Brukere/klienter/kunder <input type="checkbox"/> Ansatte <input type="checkbox"/> Barnevernsbarn <input checked="" type="checkbox"/> Lærere <input type="checkbox"/> Helsepersonell <input type="checkbox"/> Asylsøkere <input checked="" type="checkbox"/> Andre	Les mer om forskjellige forskningstematikker og utvalg .
Beskriv utvalg/deltakere	Det vil være aktuelt å snakke med studenter som har gjennomført en slik aktuell eksamen, uten å knytte dem til besvarelse. Utviklerne av videocase er en sikker gruppe av informanter.	Med utvalg menes dem som deltar i undersøkelsen eller dem det innhentes opplysninger om.
Rekruttering/trekking	Det finnes for få utviklere til å gjøre et utvalg, de involverte kontaktes direkte. Informanter blant studentene vil eventuelt plukkes med tanke på fordeling av kjønn.	Beskriv hvordan utvalget trekkes eller rekrutteres og oppgi hvem som foretar den. Et utvalg kan rekrutteres gjennom f.eks. en bedrift, skole, idrettsmiljø eller eget nettverk, eller trekkes fra registre som f.eks. Folkeregisteret, SSB-registre, pasientregistre.
Førstegangskontakt	Kontakt via telefon, ansvarlig for prosjektet kontakter.	Beskriv hvordan førstegangskontakten opprettes og oppgi hvem som foretar den. Les mer om førstegagskontakt og forskjellige utvalg på våre temasider .
Alder på utvalget	<input type="checkbox"/> Barn (0-15 år) <input type="checkbox"/> Ungdom (16-17 år) <input checked="" type="checkbox"/> Voksne (over 18 år)	

Omtrentlig antall personer som inngår i utvalget	10	Les om forskning som involverer barn på våre nettsider.
Samles det inn sensitive personopplysninger?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Les mer om sensitive opplysninger.
Hvis ja, hvilke?	<input type="checkbox"/> Rasemessig eller etnisk bakgrunn, eller politisk, filosofisk eller religiøs oppfatning <input type="checkbox"/> At en person har vært mistenkt, siktet, tiltalt eller dømt for en straffbar handling <input type="checkbox"/> Helseforhold <input type="checkbox"/> Seksuelle forhold <input type="checkbox"/> Medlemskap i fagforeninger	

Inkluderes det myndige personer med redusert eller manglende samtykkekompetanse?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Les mer om pasienter, brukere og personer med redusert eller manglende samtykkekompetanse.
Samles det inn personopplysninger om personer som selv ikke deltar (tredjepersoner)?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Med opplysninger om tredjeperson menes opplysninger som kan identifisere personer (direkte eller indirekte) som ikke inngår i utvalget. Eksempler på tredjeperson er kollega, elev, klient, familiemedlem, som identifiseres i datamaterialet. Les mer.

8. Metode for innsamling av personopplysninger

Kryss av for hvilke datainnsamlingsmetoder og datakilder som vil benyttes	<input type="checkbox"/> Papirbasert spørreskjema <input type="checkbox"/> Elektronisk spørreskjema <input checked="" type="checkbox"/> Personlig intervju <input type="checkbox"/> Gruppeintervju <input type="checkbox"/> Observasjon <input type="checkbox"/> Deltakende observasjon <input type="checkbox"/> Blogg/sosiale medier/internett <input type="checkbox"/> Psykologiske/pedagogiske tester <input type="checkbox"/> Medisinske undersøkelser/tester <input type="checkbox"/> Journaldata (medisinske journaler)	<p>Personopplysninger kan innhentes direkte fra den registrerte f.eks. gjennom spørreskjema, intervju, tester, og/eller ulike journaler (f.eks. elevmapper, NAV, PPT, sykehus) og/eller registre (f.eks. Statistisk sentralbyrå, sentrale helseregistre).</p> <p>NB! Dersom personopplysninger innhentes fra forskjellige personer (utvalg) og med forskjellige metoder, må dette spesifiseres i kommentar-boksen. Husk også</p>
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		<p>å legge ved relevante vedlegg til alle utvalgs-gruppene og metodene som skal benyttes.</p> <p>Les mer om registerstudier. Dersom du skal anvende registerdata, må variabelliste lastes opp under pkt. 15 Les mer om forskningsmetoder.</p>
	<input type="checkbox"/> Registerdata	
	<input type="checkbox"/> Annen innsamlingsmetode	
Tilleggsopplysninger		
9. Informasjon og samtykke		
Oppgi hvordan utvalget/deltakerne informeres	<input checked="" type="checkbox"/> Skriftlig <input checked="" type="checkbox"/> Muntlig <input type="checkbox"/> Informeres ikke	<p>Dersom utvalget ikke skal informeres om behandlingen av personopplysninger må det begrunnes.</p> <p>Les mer. Vennligst send inn mal for skriftlig eller muntlig informasjon til deltakerne sammen med meldeskjema.</p> <p>Last ned en veiledende mal her.</p> <p>Les om krav til informasjon og samtykke.</p> <p>NB! Vedlegg lastes opp til sist i meldeskjemaet, se punkt 15 Vedlegg.</p>
Samtykker utvalget til deltakelse?	<input checked="" type="radio"/> Ja <input type="radio"/> Nei <input type="radio"/> Flere utvalg, ikke samtykke fra alle	<p>For at et samtykke til deltakelse i forskning skal være gyldig, må det være frivillig, uttrykkelig og informert.</p> <p>Samtykke kan gis skriftlig, muntlig eller gjennom en aktiv handling. For eksempel vil et besvart spørreskjema være å regne som et aktivt samtykke.</p> <p>Dersom det ikke skal innhentes samtykke, må det begrunnes. Les mer.</p>

10. Informasjonssikkerhet		
Spesifiser		NB! Som hovedregel bør ikke direkte personidentifiserende opplysninger registreres sammen med det øvrige datamaterialet. Vi anbefaler koblingsnøkkel .
Hvordan registreres og oppbevares personopplysningene?	<input type="checkbox"/> På server i virksomhetens nettverk <input checked="" type="checkbox"/> Fysisk isolert PC tilhørende virksomheten (dvs. ingen tilknytning til andre datamaskiner eller nettverk, interne eller eksterne) <input type="checkbox"/> Datamaskin i nettverkssystem tilknyttet Internett tilhørende virksomheten <input type="checkbox"/> Privat datamaskin <input type="checkbox"/> Videoopptak/fotografi <input checked="" type="checkbox"/> Lydopptak <input type="checkbox"/> Notater/papir <input type="checkbox"/> Mobile lagringsenheter (bærbar datamaskin, minnepenn, minnekort, cd, ekstern harddisk, mobiltelefon) <input type="checkbox"/> Annen registreringsmetode	Merk av for hvilke hjelpemidler som benyttes for registrering og analyse av opplysninger. Sett flere kryss dersom opplysningene registreres på flere måter. Med «virksomhet» menes her behandlingsansvarlig institusjon.
Annen registreringsmetode beskriv		NB! Som hovedregel bør data som inneholder personopplysninger lagres på behandlingsansvarlig sin forskningsserver. Lagring på andre medier - som privat pc, mobiltelefon, minnepinne, server på annet arbeidssted - er mindre sikkert, og må derfor begrunnes. Slik lagring må avklares med behandlingsansvarlig institusjon, og personopplysningene bør krypteres.
Hvordan er datamaterialet beskyttet mot at uvedkommende får innsyn?	Tilgang er kun mulig gjennom kjennskap til brukernavn/passord, og datamaskinen oppbevares til daglig på låst kontor.	Er f.eks. datamaskintilgangen beskyttet med brukernavn og passord, står datamaskinen i et låsbart rom, og hvordan sikres bærbar enheter, utskrifter og opptak?

Samles opplysningene inn/behandles av en databehandler (ekstern aktør)?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	Dersom det benyttes eksterne til helt eller delvis å behandle personopplysninger, f.eks. Questback, transkriberingsassistent eller tolk, er dette å betrakte som en databehandler . Slike oppdrag må kontraktsreguleres.
Hvis ja, hvilken		
Overføres personopplysninger ved hjelp av e-post/Internett?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	F.eks. ved overføring av data til samarbeidspartner, databehandler mm. Dersom personopplysninger skal sendes via internett, bør de krypteres tilstrekkelig. Vi anbefaler ikke lagring av personopplysninger på nettskytjenester. Bruk av nettskytjenester må avklares med behandlingsansvarlig institusjon. Dersom nettskytjeneste benyttes, skal det inngås skriftlig databehandleravtale med leverandøren av tjenesten. Les mer .
Hvis ja, beskriv?		
Skal andre personer enn daglig ansvarlig/student ha tilgang til datamaterialet med personopplysninger?	Ja <input checked="" type="radio"/> Nei <input type="radio"/>	
Hvis ja, hvem (oppgi navn og arbeidssted)?		
Utleveres/deles personopplysninger med andre institusjoner eller land?	<input checked="" type="radio"/> Nei <input type="radio"/> Andre institusjoner <input type="radio"/> Institusjoner i andre land	F.eks. ved nasjonale samarbeidsprosjekter der personopplysninger utveksles eller ved internasjonale samarbeidsprosjekter der personopplysninger utveksles.
11. Vurdering/godkjenning fra andre instanser		

Søkes det om dispensasjon fra taushetsplikten for å få tilgang til data?	Ja <input type="radio"/> Nei <input checked="" type="radio"/>	For å få tilgang til taushetsbelagte opplysninger fra f.eks. NAV, PPT, sykehus, må det søkes om dispensasjon fra taushetsplikten . Dispensasjon søkes vanligvis fra aktuelt departement.
Hvis ja, hvilke		
Søkes det godkjenning fra andre instanser?	Ja <input checked="" type="radio"/> Nei <input type="radio"/>	I noen forskningsprosjekter kan det være nødvendig å søke flere tillatelser. Søkes det f.eks. om tilgang til data fra en registreier? Søkes det om tillatelse til forskning i en virksomhet eller en skole? Les mer om andre godkjenninger .
Hvis ja, hvilken	Universitetet i Oslo, ved Institutt for Lærerutdanning og Skoleforskning + ProTed, Oslo	
12. Periode for behandling av personopplysninger		
Prosjektstart Planlagt dato for prosjektslutt	01.08.2015 01.10.2015	Prosjektstart Vennligst oppgi tidspunktet for når kontakt med utvalget skal gjøres/datainnsamlingen starter. Prosjektslutt: Vennligst oppgi tidspunktet for når datamaterialet enten skal anonymiseres/slettes, eller arkiveres i påvente av oppfølgingsstudier eller annet.
Skal personopplysninger publiseres (direkte eller indirekte)?	<input type="checkbox"/> Ja, direkte (navn e.l.) <input type="checkbox"/> Ja, indirekte (identifiserende bakgrunnsopplysninger) <input checked="" type="checkbox"/> Nei, publiseres anonymt	Les mer om direkte og indirekte personidentifiserende opplysninger. NB! Dersom personopplysninger skal publiseres, må det vanligvis innhentes eksplisitt samtykke til dette fra den enkelte, og deltakere bør gis anledning til å lese gjennom og godkjenne sitater.

Hva skal skje med datamaterialet ved prosjektslutt?	<input checked="" type="checkbox"/> Datamaterialet anonymiseres <input type="checkbox"/> Datamaterialet oppbevares med personidentifikasjon	<p>NB! Her menes datamaterialet, ikke publikasjon. Selv om data publiseres med personidentifikasjon skal som regel øvrig data anonymiseres. Med anonymisering menes at datamaterialet bearbeides slik at det ikke lenger er mulig å føre opplysningene tilbake til enkeltpersoner.</p> <p>Les mer om anonymisering av data.</p>
13. Finansiering		
Hvordan finansieres prosjektet?	Bruk av egne midler for stipendiat, samt noe fra prosjektgruppen ADILA ved Universitetet i Agder	Fylles ut ved eventuell ekstern finansiering (oppdragsforskning, annet).
14. Tilleggsopplysninger		
Tilleggsopplysninger		Dersom prosjektet er del av et prosjekt (eller skal ha data fra et prosjekt) som allerede har tilrådning fra personvernombudet og/eller konsesjon fra Datatilsynet, beskriv dette her og oppgi navn på prosjektleder, prosjektittel og/eller prosjektnummer.
15. Vedlegg		
Vedlegg	Antall vedlegg: 2. <ul style="list-style-type: none"> ● InfoSkrivILS.doc ● IntervjuguideILS.docx 	

Appendix 7: Information paper for participants

Forespørsel om deltakelse i forskningsprosjekt

”Bruk av videocase i eksamen”

Bakgrunn og formål

Proted/ILS har nylig innført en eksamensform som innebærer bruk av videocase i lærerstudiet ved UiO. I den forbindelse ønsker vi å undersøke forhold som kan være av betydning for en ny vurderingssituasjon. Denne studien gjennomføres som en del av et doktorgradsarbeid, og er et samarbeid mellom Universitetet i Agder og Universitetet i Oslo.

Studentene som har gjennomført en slik eksamen besitter en erfaring vi ønsker å ta vare på, og kan bidra til å skape ny kunnskap om en relativ ny eksamenspraksis.

Hva innebærer deltakelse i studien?

Som deltaker vil du bli bedt om å stille til et intervju for å besvare spørsmål rundt dine erfaringer med den aktuelle eksamenstypen. Selve intervjuet tar rundt 30-40 minutter, og vil foregå som en samtale mellom deg og en forsker. Alt som sies i intervjusituasjonen vil bli tatt opp på en lydopptaker, og du vil bli gitt beskjed når opptaket startes.

Hva skjer med informasjonen om deg?

Alle personopplysninger vil bli behandlet konfidensielt. Selve lydopptaket og de notater som gjøres ut fra intervjuet vil kun bli gjort tilgjengelig for dem som skal arbeide med forskningen. Det blir lagret digitalt på en enhet som ikke er koblet til nett, og vil senere bli slettet etter at forskningen er avsluttet. Informasjon som siteres eller på annen måte benyttes i artikler eller tilsvarende vil ikke være mulig å spore tilbake til deg som deltaker.

Prosjektet skal etter planen avsluttes 01.02.2016.

Frivillig deltakelse

Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli anonymisert.

Dersom du ønsker å delta eller har spørsmål til studien, skriv ditt navn på navnelista som er utdelt.

Du kan også ta kontakt med *Erik Adalberon* på tlf. 38141977 / 97630474.

Studien er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS. Veiledere for dette arbeidet er: Professor Roger Säljö, Gøteborg Universitet/Universitetet i Agder og Professor emeritus Trond Eiliv Hauge, Universitetet i Oslo.