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Designing and Reflecting on Process Quality: A Case Study of Encounters and Clashes among First-year Students in Teacher Education

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ABSTRACT

Quality assurance is a major topic in discussions of higher education. General quality indicators for learning processes emerge as a part of the concept to emphasise dimensions that predicts students' learning outcomes. How can teaching designed as inquiry-based learning (IBL) improve process quality? By exploring how the curriculum is applied in an unfolding teaching and learning process for first-year students from a teacher education programme in Norway, one discovers complexities related to general guidelines. The aim is to highlight the discussion of innovative designs for learning to improve process quality, and to show that localised knowledge practice is an important contribution avoiding simplicity in general terms as a measure of quality.

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1. Introduction

Quality assurance in education presents an ongoing challenge in Norwegian higher education, but is also underpinned by a joint European educational collaboration (Standards and Guidelines for Quality Assurance in the European Higher Education Area; ESG, 2015, p. 7). The strategy of setting standards for teaching to improve quality has received increased attention around the world. Although the importance of quality assurance is commonly recognised, different quality-related sub-goals are pursued in different countries (Serrano-Velarde, 2008, p. 2). While increasing academic attention has been paid to quality assurance, there is no commonly accepted definition of what quality means or how it is measured. Literature reviews of quality assurance in teaching and learning also reveal a high degree of diversity (Steinhardt et al., 2017). Working with a standardised curriculum is not a straightforward process, but a hermeneutic work in a setting. There appears to be multiple interpretations of the goals of units of competency among educators (Hodge, 2018). When it comes to quality assurance in education, we often focus on common standards, where quality means conforming to a norm that pays little attention to variation and differing practices (Dahler-Larsen, 2013, p. 32).

This paper aims to explore how a subject curriculum is applied in higher education. It focuses on localised practice at the course level, where the quality of the process is determined by the encounter between students and educators. The qualitative design also depends on philosophical assumptions regarding participation and knowledge. Knowledge is constructed in a context by individuals' experiences and interactions (Creswell, 2014). Educators are professionals empowered to actively

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interpret and shape curricula for their learners (Hodge, 2018, p. 54; Sinnema et al., 2017, p. 16). Educational goal documents also provide guidelines for implementation. Each of the various categories of utterance can form regularity between statements. Foucault uses the term formations, a form of authoritative speech acts that relate to one another in some coherent way (Foucault, 2010, p. 38). With the introduction of the quality reform, international criticism emerged. It was stated that we must be alert to the risk that procedures regulate and control academic standards and freedom (Craft, 2018). The intention of this project was to open up opportunities for intervention and improvement of learning processes.

In order to be applicable, the quality concept should also encompass complexity in practice. The article describes a qualitative case study of the design of a research-based teaching method that was implemented among first-year student teachers in primary and lower secondary school education in Norway. The method was used in connection with an archaeology-related topic in social science, and the use of the method is examined in relation to the students' understanding of their own learning outcomes.

In recent years, considerable attention has been devoted to how a research-based curriculum that promotes process quality in learning should be designed (Brett et al., 2013). "Inquiry-based learning" (IBL) is one of several terms used to describe methodological approaches that emphasise a greater degree of student activity and self-regulated learning, which are two essential indicators of process quality. Studies of various approaches that fall under the umbrella term "IBL" reveal considerable diversity. The aim of IBL is to enable students to experience the process of creating knowledge through investigative work methods, and IBL is anchored in constructivist learning theory.

The research questions addressed in the article are: How can teaching designed as inquiry-based learning (IBL) improve process quality – the dimension that predicts students' learning outcomes? One strategy for defining quality is to identify specific indicators. In this connection, some general pedagogical indicators of process quality that have been developed will be discussed in relation to practice (Hatlevik, 2016). Which partial connections and separations can be located between didactics underlying the choices for implementing the method and students' understanding of their own learning process? The term "partial" indicates achieving something in a particular complex interrelation (Strathern, 2004). How can we improve process quality in relation to the construction of indicators in this relational interaction? A relational learning perspective on education requires that we examine both what students do and what the teacher does. In an interdisciplinary project in Norway, it is pointed out that the relational perspective has been little focused in educational research. Learning is here understood as co-creation between different actors. Human is always a part of, and intra-acts with other bodies, nature, materiality, structures, etc. (Østern et al, 2019, pp. 31, 50). Based on a type of actor-network understanding, it opens for research of different relational settings.

To examine how a knowledge practice is carried out and experienced means entering a complex practice with different kinds of linkages in a network of relationships. Several aspects will be interwoven in the process work where some partial connections in the relationship can be localised. But there will also be partial separations where the teaching presented does not correlate sufficiently well with students' views of their own learning process (see Winthereik & Verran, 2012). This case study will thus present a practice in which parts of a relational complexity will be highlighted. Special attention is paid to the first meeting with the students on campus, the patterns towards more self-regulated learning and the students' experiences of the IBL-design they participated in.

2. Locating Process Quality

In Norway, the Bologna Process and the Lisbon Process have been important drivers in the qualitative reform process. The qualitative reform systematically followed up qualitative work by the Norwegian Agency for Quality Assurance in Education (NOKUT), an independent expert body under the Ministry of Education and Research. The Norwegian National Student Survey is an

annual survey that NOKUT has carried out since 2013, and which attempts to “measure” the quality of the educational process based on extensive data registration. An assessment carried out by the Nordic Institute for Studies in Innovation, Research and Education (NIFU) discusses whether NOKUT’s study can be used as indicators of process quality. One of the conclusions is that quality in higher education is difficult to measure. In addition to appearing to be complex and multidimensional, the concept of quality is poorly defined (Damsa et al., 2015). Report no. 16 to the Storting (white paper), “Quality culture in higher education”, suggests measures to improve teaching quality, but also points out that there is no simple recipe for developing a quality culture in educational processes (Ministry of Education and Research, 2016–2017). There is no simple answer to the question of how to improve quality when different pathways and multiple aims conflict.

International studies show that students’ experiences of quality vary. The same course with the same activities and the same teaching can result in different experiences and outcomes (Ellis & McNicholl, 2015). Comprehensive registration data are not always suited to providing complete answers to questions related to practices intended to improve the quality of the learning process.

In one study, some of the questions in the National Student Survey are analysed with the aim of establishing whether they can be used as indicators of the quality of the learning process (Hovdhaugen & Wiers-Jenssen, 2015). Process quality is the dimension of education quality that best predicts students’ learning outcomes. The indexes developed consist of several questions that, in combination, are intended to measure a phenomenon that is not directly observable. Initial attempts have been made to measure process quality in the National Student Survey, but the strategies have not been sufficiently developed. In the teaching area, it has been pointed out that other methods for examining teaching may provide a different picture and may therefore give complementary information in the discussion of various aspects of process quality. The qualitative aspects of index constructions are just as important as the quantitative aspects (Hovdhaugen et al., 2016, pp. 7, 38–40).

While the quality of the learning processes is crucial to students’ learning, there has been a lack of indicators of process quality in higher education. Student surveys that capture students’ perceptions of aspects of the educational provision in respect of the quality of the programme and academic outcome are the exception. Hatlevik (2016) gives a summary of the characteristics of process quality in programmes of professional study and believes that these indicators can have an impact on the quality-promoting activities, surveys and documentation that are to be implemented. In the teaching context, this is characterised by clear and reasoned goals for learning. Students must find learning tasks meaningful, and there must be a focus on key concepts, safe learning environments and dedicated teachers. Student-active types of learning are highlighted, and the teaching must promote mastery and self-regulation. Collaborative teaching and high-quality feedback focusing on skills development for the individual student are vital. Hatlevik (2016) refers to some general indicators of process quality. In this article, these are related to a specific, local practice, as teaching is understood as both complex and situated (Cochran-Smith, 2003).

Information that reflects the quality of students’ learning can thus be obtained through having a focus on the processes that take place in teaching situations. In Norway, there is little empirical data on the relationship between pedagogical practice, different forms of involvement, and teacher and learning approaches (Damsa et al., 2015). We know little about how activities play out in the specific contexts of courses, and what challenges teachers and students experience regarding doing knowledge practice. In the Norwegian context, there is also a lack of research investigating unfolding processes (2015, p. 64). We know little about what is going on in the teacher education classrooms (ProTed, 2020, p. 22). If we investigate educational processes as they unfold, quality development can then take place, allowing us to better understand the relationship between generic and specific competencies in domain-specific activities.

Major differences exist between teacher education programmes worldwide with respect to duration of study, programme design and practice (Darling-Hammond, 2017). In Norway, overarching responsibility for the educational system lies with the Storting (Norwegian parliament), and the

Ministry of Education and Research is tasked with administration. Responsibility for developing regulations, guidelines and plans lies at the policy-making level, while the work to structure, organise, create an academic profile for teacher education, and educate the teachers of the future is done at the institutional level. Governance documents set out guidelines for implementation in institutions (Afdal, 2013). Goal statements are relatively open to interpretation at the institutional level, which is also where the hermeneutic work is brought into practice.

3. Inquiry-based Methods in the Teaching Professions

“Inquiry-based learning” (IBL) is one of several terms used to describe pedagogical approaches that are problem- or project-based. Explanations of IBL in higher education are ambiguous. The literature points to a diversity in terminology and research methods, and a broad spectrum of understandings within and between subject disciplines (Aditomo et al., 2013). The umbrella term “IBL” thus encompasses many approaches. Even though forms of IBL have existed for a considerable period of time, and a great deal has been written about the topic of “first-year experiences”, there are few studies that focus on beginner experiences with IBL (Levy & Petruilis, 2012). IBL can take place at different levels and with different degrees of complexity (Brett et al., 2013). The field of education is an area where students also learn how to learn and where there is a constant need for higher levels of self-determined learning (Blessinger & Carfora, 2014). IBL can be used to create awareness that knowledge is constructed and contextual, and that students themselves can create new knowledge and be part of the knowledge-producing society. Studies of the method refer to a development in understanding from regarding knowledge as absolute to understanding it as constructed, which can lead to a greater degree of critical thinking and problem-solving skills. Involving students in research activities as early as the first year of the programme of study is thus regarded as an important basis for further learning (Levy & Petruilis, 2012).

Student teachers in Norway must be familiar with recent research findings, methods, etc. and also understand their significance for practice. They must adopt an open and critical attitude both to research and to practice. Their teaching must be based on investigative activities. There is agreement that a stronger research base is needed in teacher education in order to be better able to equip teachers with the skills they need (Lillejord & Børte, 2017). In 2010, a national teacher education reform emphasising research was introduced with the aim of preparing students to adopt a research-based approach to their work (Munthe et al., 2011). According to Report no.18 (2012–2013) to the Storting, students should gain experience with R&D work at an early stage of their studies. In Norwegian teacher education there is an expressed need for an innovative drive in efforts to create the “researching student” and to garner experiences from these efforts to boost competence (Postholm, 2016). According to Report no. 28 (2015–2016) to the Storting, in-depth learning is emphasised, and research is a significant core element also in the elementary school curricula.

The term “research-based education” is used in discussions of teacher education. Teachers should be qualified to use research methods and develop knowledge to improve teaching and learning for future generations. Inquiry-based learning has been described as a pedagogical strategy that can positively affect student learning and engagement. In Norway, little research has been carried out on how these methods are understood or practised in teacher education programmes. The results of a survey of 19 higher education institutions in Norway reveal considerable variations in both implementation and understanding of research methods. Therefore, we must examine more closely how research and inquiry are conducted in teacher education programmes (Munthe & Rogne, 2015). Voet and De Wever (2016) have investigated conceptions of inquiry-based learning among history teachers in secondary school and emphasise that understanding what knowledge is and learning methods used are closely connected. Teachers’ understanding of history led to different approaches in the classroom. Subjects, didactics, understanding of knowledge and methods must therefore be seen together in profession-based subjects. The study, which included 22

teachers, also indicated that there were substantial differences. Only four teachers said that inquiry-based learning should be centred on investigating or learning by asking questions, analysing information and forming arguments. Most teachers preferred an instrumental approach. Their focus was on learning to reason using historical information. Only three teachers mentioned familiarising the pupils with history as a construction or studying the basics of historical research. Teachers in general focus more on the content of history, the development perspective and history as “something that was”, rather than on the construction and context of this body of knowledge. There were also major differences regarding conceptions of inquiry-based learning. Most limited themselves to a critical evaluation of the sources (Voet & De Wever 2016, pp. 61–65). To improve process quality, teachers must reflect on their choice of teaching design in relation to their knowledge understanding.

A NIFU report concludes that we need more understanding of various forms of inquiry-based learning. We need to examine practices of how enacting IBL poses challenges to teachers and students in the interactive culture of the teacher–learning situation (Damsa et al., 2015, p. 47).

4. Methodological Aspects of the Case Under Study

Qualitative teaching involves ideas that are highly varied and in constant flux; qualitative teaching is a dynamic activity with subjective aspects. Knowledge content and the learning philosophy form a basis for the teaching. The learning process must be facilitated to reach the knowledge goals. Knowledge of the northern areas has formed an important part of the knowledge goals in the courses in social sciences at the university where the case study was conducted. History didactics at the university includes questions concerning the relationship between national master narratives and Sámi indigenous knowledge practice, as well as critical examinations of culture as a coherent and idealistic essence. Pasts are discussed in the context of the present since they are part of our everyday practice and leads to actions. We enact pasts through historical remains and narratives in different situations. Pasts are used in present in many and conflicting ways. Students must learn that different ways of presenting knowledge influence the future (Ekeland, 2017; Olsen et al., 2012, p. 153). The ability to intervene in singular performativity and learn to enact heterogeneity may affect the future of students’ participation in cultural negotiations of pasts in present. How categories and differences are performed in primary school is an important question in a multicultural present where we must take responsibility for the knowledge practices of tomorrow. The aim of “doing difference together” also requires that we call our own knowledge practice into question and shake up what students take for granted (Verran, 2013, pp. 144–145). The aim suggests a need to employ questions that can disturb consequential categories into which people get sorted.

In order to uncover some indicators of process quality, suitable methods include student feedback and interviews with students, in addition to observation of teaching and the teacher’s own accounts and reflections (Hatlevik, 2016). An ethnographic research involves several approaches such as fieldwork, participant observation, informal conversation and qualitative interviews with students (Atkinson, 2015). The data for this article were obtained through fieldwork participation in own practice, and qualitative interviews after the course. A qualitative case study elicits experiences from a special context and is important to improve our understanding of the field in which we participate and intend to develop further. The qualitative case study used is influenced by the “teacher-as-researcher” approach developed by Stenhouse in the 1970s (Stenhouse, 1975). Doing fieldwork in one’s own practice is something that has been given increased attention in recent years. Balancing the dual role of teacher and researcher is challenging, but the aim is to increase awareness through taking an explorative approach to my own practice to discuss general indicators. Different degrees of student participation in the research context are also emerging (Postholm, 2016).

The fieldwork in the present case lasted three months. The course had a blended learning design, which combined face-to-face teaching with e-learning. The meetings with the students on campus were the most important, but the digital classroom was also a part of the teaching. The progression

of the student project that was investigated was organised in several stages. At the beginning of this case study, the students identified topics from a broad framework text, and composed a preliminary research question. They planned the investigation and had to reflect on how to proceed in order to find answers to the research question they formulated. In the analysis process they had to refer to the framework text and the research question in order to reflect in relation to the empirical data. At various phases of the process they presented, discussed and reflected on the project together with other students and me in the role of supervisor.

The design was inspired by an IBL model based on eight “phase descriptions”: find my topic, decide my question or hypothesis, plan my method, collect my data, analyse my data, determine my conclusions, share my findings, reflect on my process (Mulholland et al., 2012). The model presents the phases as well as how they are related. There is no simple linear representation of workflow in IBL that is suitable for every scenario. The degree of self-regulated learning will also vary (Sharples et al., 2015, pp. 313–315). In IBL the supervisor is both a facilitator of learning and a supplier of information (Savery, 2015).

When designing a course, several choices are made. Sharing experiences with the students is an important supplement to normative definitions and can provide insights that may lead to better practice. Only five first-year students attended the course. They participated in the same class as students in their fourth year and students undertaking further education. A total of 16 students attended the course. The institution agreed to this class composition in order to give the students more subjects to choose from and also to be able to provide a wide-ranging teacher education in a part of the country that had experienced both a lack of teachers and low levels of recruitment to the profession.

Conversations were held with four first-year students in which they were asked to describe their experiences of the learning process. Methodologically, this involves informal conversation that included research subjects as participants rather than closed interviews characterised by unequal levels of power between interviewer and interviewees (Atkinson, 2015). Based on the conversation guide, we talked about how it felt to conduct profession-related research in the first semester, and how the students perceived the learning process and knowledge content of the course. Using key events in the students’ narratives, I focus on the first meeting on campus, the patterns towards more self-regulated learning, and students’ experiences of the IBL design that was presented. Lena, one of the students, agreed to be a key contributor. In addition to completing the written course evaluation and having a conversation with me together with the other participants, she also contributed to the further process by reading and commenting on the first draft of the article.

Data analysis is the process of making sense of data, and it involves interpreting what people have said and how it relates to what the researcher has observed and read. The aim is to gain a better understanding of how educational designs affect learning processes, which can help improve process quality (see Merriman & Tisdell, 2016, p. 6). The researcher–participant relationship is central to creating space in terms of power balances in the research dynamics. When collecting data, the researcher often decides the agenda. At the analysis stage, the researcher often has total control (Anyan, 2013, pp. 4–5, 13). In an ethnographic conversation, participants will have a greater influence on what the focus should be. When participants are allowed to comment on an interpretive text, they can achieve greater control over how their involvement in the research is projected.

I view my own actions as an actor participating in the network, where I also challenge my own actions in the didactic encounters. My voice as an educator and facilitator of teaching is important to eliciting any connections between the two “levels” – the teaching and guidance provided in the course, and the students’ planning and implementation of the project. The two levels are reciprocal constituents. I entered into partial relationships with students through the learning process, and based my work on the assumption that key questions could be discussed on the basis of a more specific, localised interaction. “Partial” is used in Strathern’s sense: a description is always part of a whole and used to achieve something in a particular context. “Ethnographic truths are similarly partial in being at once incomplete and committed” (Strathern, 2004, p. 39; Winthereik & Verran, 2012).

5. Results

The aim of the project was to gain a better understanding of how teaching designed as IBL can improve process quality in local knowledge practices. Concepts must be filled with content, and this is done in a contextual and situated process (Cochran-Smith, 2003). Avoiding simplicity, it is therefore important to refer to which model is used in the specific learning process and contextual aspects interwoven. In this ethnographic study the following results related to index construction appears (Hatlevik, 2016):

- An important index of process quality is having clear and reasoned goals for learning. The findings show that several aspects intervene both in planning teaching and in students' experiences of their first encounter on campus. There is a partial separation between the teachers' intentions and students' perceptions in the current context.
- The students state that a key motivation was conducting an investigation with professional relevance.
- Collaborative learning, student-active learning forms and feedback from the supervisor and fellow students several times in the process stand out as important indicators of the quality of the academic outcome.
- Sharing findings and reflecting on one's own process are vital for students' learning.
- Personal dedication is essential for learning and self-regulation.
- The students' involvement, both subject-wise and socially, through the process results in a sense of mastery.

Other important factors regarding process quality emerged in the context:

- First-year students should be better prepared prior to their encounter with a subject-related course.
- Several transitions took place in the students' learning process in the first part of the IBL process. The relationship between the teaching presented and students' learning processes showed a greater degree of partial connection.
- Learning academic writing was considered essential in the learning process. The first-year students wanted both a general introduction to writing assignments and a "writing course" related to the project topic.
- The knowledge content was a new concept for the students, but in the process, they saw the importance of a constructivist approach also related to the practice field.
- Identify the research question and relating it to the empirical basis and the syllabus became an important opening to self-regulated learning.
- Being involved in the process with more experienced students was considered positive for first-years students' learning.
- Research-based teaching should be more structured and given more support for first-year students.

Some significant relations that have had impact on students' learning can be interpreted. General process index constructions can open up for dialogue about what contextual studies can provide. Furthermore, I will refer to some cases where localised unfolding knowledge processes are performed and discussed.

6. Kick-off – Encounters on Campus

Several aspects must be taken into consideration when planning teaching. Course plans, including decisions on literature, are made during the semester prior to the start of the studies. The plans

include formative and summative requirements as well as the framework for student projects. The fact that the student group was composed of members at different stages in their studies, affected the teaching design. First-year students had their own course plan that was important for their learning process. In the organisation of the teaching, these students were allocated three face-to-face meetings on campus, whereas the other students were given two. The entire student group attended the first two meetings. Each of these meetings lasted three days. The final meeting was reserved for first-year students only. The organisation of the study on campus was an important “actor” in facilitating the organisation of the studies.

The first phase of the project design included preparations intended to shed light on the course so that students gained an understanding of content, learning process and goals. This is described as a characteristic of process quality (Hatlevik, 2016; Helmke, 2013). The orientation was also intended to stimulate curiosity about the topic and promote questions about the field of knowledge. My role was that of an initiator with a project management function (Savery, 2015). The phases of the project and expectations with milestones were reviewed, and the literature list was presented as a reservoir of knowledge together with the framework text for projects and key concepts. The first day ended with a brainstorming session where students discussed in groups what a good research question might be. This was followed by a plenary discussion.

Several encounters took place the first day. From my perspective, the clarification of goals, content and working methods was important. First-year students experienced this differently: “My first encounter with such an assignment was overwhelming”; “it was a big shock because it was my first assignment at the university level”; “it was hard, I couldn’t grasp the transition from upper secondary school”; “I’ve never studied before so it was kind of ‘Wow’.” The first-year students indicated in the evaluation and following conversations that they experienced the first encounter as a clash. There was a considerable separation between my intentions and the students’ perceptions. These conditions formed the starting point for further conversation between Lena and me.

She started by saying that “it wasn’t having to write an assignment that I found confusing”; nor was it the description of the progression and deadlines. So, what was this feeling of being overwhelmed related to? Lena primarily pointed to the syllabus. She felt that it was far too comprehensive, and that it was difficult to find out what was relevant. The other first-year students had said the same. I had highlighted a fair amount of basic readings in the introductory lecture, and PowerPoint slides with the content of the lecture were also available in the digital classroom. But Lena said she had not seen this; everything had seemed so overwhelming that she had not thought about it. Finding their way around a syllabus was expressed as being a new experience for the first-year students. The syllabus had seemed frightening to them.

Lena said that too much information had been given in a too short period of time. “My head was full that week.” She had not received information about the course before she came to class. The course plan had been submitted to the programme coordinator and was uploaded to the digital classroom. A welcome letter with information for students had been sent in spring in line with institutional requirements. First-year students said that they had no access to this information before they met up for the social science class. Lena thought that the reason students had not received the information was that not all students had chosen their subjects prior to attending the first meeting. A consequence of the policy of giving first-year students enough time to choose subjects was that they had only received course plans for compulsory subjects. According to Lena, not only was there too much information, but the topics and specialist terminology were also unfamiliar to her. It was also the first time she can remember carrying out a study with an investigative research approach. She had not had access to the digital classroom until she arrived on campus, nor had she set up an email account or bought the literature. First-year students had no experience as students, and all in all the first encounter on campus was regarded as overwhelming. As one student said: “It was confusing at the start – kind of chaotic but I understood more and more over the course of time.” In the conversation, Lena and I talked about how to improve the structure. She would have liked the opportunity to prepare for her role as a student better and believed that one could have

greater expectations of the students before entering campus. Social sciences began on the third day of the first week, after two days of general information that also included compulsory subjects. Lena said that this sequence could have been self-regulated if access to the digital classroom had been available some time before the start of the semester. The students could then have been prepared and could have discussed any unclear aspects on campus. Several unclear, non-subject related aspects came up in connection with the academic subject. Several aspects surfaced in the network that had not been sufficiently considered either at the programme level or at the course level. One indicator of process quality is the clarification of goals regarding what is to be learned in the process and why (Hatlevik, 2016). However, this indicator must be viewed in connection with the context at the initial phase, particularly in the case of first-year students without experience with higher education. This case study notably reveals the importance of looking at contextual conditions, and how different factors interact and affect each other in the process.

7. Numerous Challenges Going Forward

According to the course plan, students were to acquire skills in source criticism and become aware of some of the main features of social development in Norway between Norse and Sámi history. The students should be able to analyse and apply such knowledge to the practice field, and to present an independent study showing that they master the forms of expression in the subject area (Kunnskapsdepartementet, 2010). For first-year students, this course marked their first step towards acquiring IBL competency, and had a focus on increasing complexity in considering what is deemed valid and relevant knowledge. The project topic was formulated in the framework text, which was more specific for first-year students than for more advanced students. The former had to do a text-book analysis. Using a research-based method, the students were to develop historical awareness through analysing the use of archaeology.

The first steps in the process encompassed the pathway from the delimitation of the topic to the preliminary research issue. We started brainstorming the research question on the first day the students were present on campus. Based on the knowledge content of the subject, I made some didactic choices based on what lines of thought I could interlink, keeping in mind that not all students had started reading the literature. Space, time and materiality were chosen as main focus areas, and it was important for me to stress that knowledge of these aspects has changed over time and that interpretations are not absolute (Hansen & Olsen, 2013). On the third day, the students were to resume the discussion of the research question. They said that the process was challenging but that their efforts to identify a research question had showed an improvement on the third day. Lena said: “It was easier on the Friday, because by then some of it had started to fall into place.” There had, in other words, been some progress that enabled her to see more of the pathway she would follow in her own learning efforts.

The students found it useful to work in mixed groups with more experienced students. A kind of group-based collaborative learning process developed where the students were involved in efforts to understand and solving the task together. They constructed a solution through negotiations in a learning community and would later present the solution in plenum. The interplay between students focusing on the process and students’ self-regulation is mentioned as an indicator of process quality (Hatlevik, 2016).

The preliminary research question was due to be submitted for the supervisor the following week together with texts that were to be analysed and discussed. Lena briefly described the process. The students had met each other of their own volition and discussed and tested some possible questions prior to submitting it. I met students individually and had to deal with their heterogeneity, also regarding expectations and levels of precision in relation to the work requirements and how future pathways were understood. It was important to obtain agreement between the parties regarding the learning process at this stage (Helmke, 2013, pp. 123–125). Lena regarded this kind of constructive dialogue as crucial. An immediate response was vital so that she could make corrections and

revisions while she was still in the process. The supervisor must therefore be available to give students speedy feedback at the various stages of the process.

Following the feedback session, the students had to reflect on the knowledge base they needed in the future and relate this to the empirical data they had chosen to use. One student said: “I first found my feet when I decided on the research question and did the relevant readings.” Lena talked about the important pathway from what she saw as an almost insurmountable syllabus to the point where she herself understood what was relevant for the paper she had to write. Students began to show a more personal commitment to their own progress. Personal dedication is vital for learning and represents a self-regulation that is a distinctive characteristic of process quality (Hatlevik, 2016).

The students’ statements show that the knowledge base was unfamiliar to most of them:

I can honestly say that I hadn’t learned anything about material sources. And I wasn’t aware of the relationship between the Sámi side of it and the Norse. I knew very little about the northern area that was relevant to my assignment.

Another student described her own knowledge base as follows: “I remember arrowheads and the like from the Stone Age. I don’t remember having learnt anything about material sources and I’d never heard about the interpretation of material culture.” A third student also described the content of the course as new: “I’ve always thought about history as something that has existed; the idea that the use of history is something happening around us right now was new to me.” Knowledge content was a new concept for the students. However, the students’ reflections show a positive development towards a more critical and constructivist understanding of knowledge. International surveys of first-year students indicate the same results following the implementation of a research-based method. Several students also experience challenges in connection with a strongly reproductive understanding of learning. This shows the need for the teacher’s active presence throughout the process, particularly in the first year of study (Levy & Petrulis, 2012).

Specialist terminology was also considered difficult for first-year students. The student reading group had been very useful. First-year students emphasised the importance of collaborative learning in several contexts. The students were involved both subject-wise and socially in their studies, and thereby experienced feeling the sense of mastery that is considered to be a key characteristic of process quality (Hatlevik, 2016). Several transitions took place in the students’ learning process in the first part of the IBL process. They encountered new challenges, such as the analysis of the empirical data. Lena described carrying out a textbook analysis during her initial research efforts as a positive experience. “I see it as a perfect task for my programme option ... I really experienced a wake-up call in that respect!” I chose textbook texts because they were easily available, and because they also paved the way for a dialogue about the field of practice at a time when the students had not yet done any teaching practice in school. Studies show that textbooks often form the basis for planning in primary and secondary schools. It is therefore crucial that the teachers of the future view such textbooks in a critical light (Ekeland, 2017). The students were required to reflect on scientific knowledge in relation to the school’s use of archaeology and to identify the correlation with outcomes in primary and secondary education. Lena experienced this as highly relevant, and the other students had the same experience: “I think textbook analysis was a great start!” one student said, while another student had experienced “a little shock” upon encountering the use of archaeology in the texts compared with scientific knowledge on the subject. The students’ statements indicated that using textbook texts in an explorative approach to the topic appeared to be successful. Consequently, we can conclude that there was a greater degree of correlation between the didactic choices and the students’ understanding of the relevance for their own projects and their future profession. We also find this result in other IBL practices in teacher education. First-year students regard being involved in a study linked to their future profession as a central and engaging learning method. The relevance and utility of the learning activity motivate the development of process quality in profession-based programmes of study (Brett et al., 2013; Hatlevik, 2016; Levy & Petrulis, 2012; Webber, 2010).

For the second meeting, the students were required to deliver a one-page project description and to prepare an individual class presentation. The students were to present subject-related issues and thoughts about the analyses with their conclusions (Kunnskapsdepartementet, 2010). Lena said that standing alone in front of the class was not a problem and that she had benefited from this: “When you have to explain something – present it to others – you must have a clear understanding in your own head.” Through the presentation she confronted her own preconceptions in a learning community. She found getting tips from other, more experienced students on how she could move forward to be a positive experience. Future-oriented feedback on her project was important, but she also regarded listening to other presentations as an important part of the process. All the students said the same. Sharing findings and reflecting on one’s own process is an important part of the IBL method. To hear about and discuss other students’ projects was vital for students’ learning.

The third meeting was for first-year students only and was intended to function as a seminar on writing assignments. To prepare for the seminar, the students were asked to reflect on the design of their own project. The students thought that this “writing course” should have come earlier in the process. According to the students, this meeting was inspirational for their own writing. “For most of us, this was a turning point, and it enabled me, at any rate, to write an assignment at this level,” Lena explained. Even though Lena met adversity in the process, she is pleased to have had the experience of learning how to write an assignment: “We social science students have gained a lot of writing experience.” The students would accordingly prefer to learn how to write the assignment before they had acquired any knowledge of the topic. My view during planning was that it was precisely at this stage that the students could relate content to structure. The first-year students wanted both a general introduction to writing assignments and a “writing course” related to the project topic.

In the conversations, the students described the supervisor’s input on their draft manuscripts as invaluable. Lena said that she had really struggled with the analysis: “I remember I had only a seven-page manuscript with analysis related to the research project when I came to you, and it was supposed to be fifteen pages.” She had ventured into the unknown and had done her best to adopt an explorative approach. At that point she needed to talk through the discussion points in the analysis. According to the students, learning how to write an academic assignment on a specific topic and how to formulate and structure the content were crucial to their own learning and ought to be a significant indicator of process quality for first-year students.

Sometimes quality assurance becomes concerned with quantifying some of the presumed indicators. In this connection, I have highlighted some experiences related to process quality indicators that concern the quality of teaching and learning. Several factors can be interpreted as partial connectors with process quality indicators, while the progression shows that other contextual aspects affect the students’ perceptions of their own learning processes.

8. “Nevertheless, I Ended Up with What I Consider a Good Assignment.”

This article is concerned with a part of a research-based learning process carried out in the first year of primary and secondary school teacher education. The objective was to reflect on some general indicators of process quality in a complex, localised practice. If process quality is not filled with content through experiences, it can end up being merely a “semantically bloated” quality concept not capable to serve as a tool for reflecting on one’s own practice and open up a dialogue. There was a greater degree of partial separation than connection between the purpose of the teaching and students’ perception of this in the first phase of the process. The degree of connection between the intention of the teaching and students’ perception of their own learning outcomes appears to increase throughout the process. Students gradually familiarised themselves with the procedure in this research-based case.

The students were also satisfied with their own progress and their reports. Lena reflected on the process: “It’s gone surprisingly well, and I have had good enough self-discipline.” She says that she

coped with more self-regulated learning because it was also directed: “We had deadlines, and the work requirements drive you forward.” Lena wanted to teach history differently from what she herself had experienced in school. She emphasised that she had learned a more research-based approach:

You have to investigate, and both be critical to the use of history and learn to have a critical attitude towards sources. At any rate, I will give my pupils room to ponder and ask questions, and not take all knowledge at face value.

Lena expresses a form of self-efficacy – a belief in her own capacity in her future performance.

Encountering an explorative approach can be seen as an important stimulus to gaining self-insight. Teaching also takes place in a broader relational network where there are several actors in a collaborative practice. A number of aspects must have partial connections in order to pave the way for optimal learning conditions and improve process quality. Comprehensive registration data are frequently used as objective and evidence-based characteristics of quality but give little indication of how different factors interact and affect each other in a course of studies. Consequently, more studies of relational and localised IBL practices in the first year of teacher education should be undertaken in order to identify variations that also reveal the implications for the design and practice of IBL. On this basis process quality can be discussed and improved. Further research should also to a greater extent compare the research directions: student engagement, self-regulated learning and student approaches to learning (Hatlevik, 2018).

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