Routledge
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Choosing Content and Methods: Focus Group Interviews with Faculty Teachers in Norwegian Pre-Service Subject Teacher Education in Design, Art, and Crafts

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The study is aimed at generating knowledge on how faculty teachers reflect and justify their choice of subject content logic in teacher education, exemplified by a concurrent pre-service Subject Teacher Education in design, art, and crafts. Focus-group interviews generated data. Three topics were discussed: too many choices, different logics, and avoiding confrontation. Faculty teachers expressed various understandings of content knowledge (CK) and pedagogical content knowledge (PCK), linked to the teachers' intuitive and reasoned reflections and preconceptions through the anchoring effect and attribute substitution. The study contributes to the knowledge base by reframing problematic sides of education, and by expanding the understanding of CK and conditions for PCK by exploring the thread between educational psychologist Lee Shulman and psychologist Daniel Kahneman.

Keywords: teacher education, qualitative research, content knowledge, pedagogical content knowledge, judgment theory, Subject Teacher Education in design, art, and craft

In recent decades, educational research has documented that while the variation in teachers' personal skills concerning teaching is what makes the most significant difference in the effect and impact of education (Hattie, 2009, p. 108), teachers' education has a major impact on how they develop these skills (Afdal, 2012; Kleickmann et al., 2012). However, there is less knowledge and also less consensus on what constitutes good teacher education (Hattie, 2009, pp. 109–110). Teacher education is a complex and challenging task that engages a mosaic of knowledge areas, methods, and activities from several professions (EACEA, 2009; Gulliksen & Johansson , 2008; Hattie, 2009; Øzerk, 2006). The content changes over time (Brænne, 2009; Kjosavik, 2003), often related to societal changes (Hökkä & Eteläpelto, 2014), and it differs between countries (Afdal, 2012).

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This article approaches the general theme of teacher education by asking the question of how young people are educated to become specialized subject teachers in design, art, and crafts (DAC) in Norway. This particular area of teacher education has several distinctive features that make it a good case to exemplify some of the more general challenges of teacher education. Teacher education can be categorized according to two pairs of alternative organization models: those organized according to the concurrent model versus the consecutive model, and those organized as in-service and pre-service teacher education. However, several studies have documented that the field of art education is so closely connected to the field of art that the field of art education in itself lacks autonomy: "it is subject to the logic of the art field" (Broady, 2012, p. 8; Börjesson, Gustavsson, & Edling, 2012; Mangset, 2004). This indicates that Subject Teacher Education in DAC might constitute a third pair of alternative organization models composed of two fundamental understandings of what the subject is: It can either be regarded as a domain within the field of art (Bourdieu, 1996) or within the field of teacher education. Friedman (2012) has documented the same discussion in the field of design.

The different forms of organization of teacher education are based in different theoretical and methodological traditions and thus build on different rationalities of what the education should be. This offers a possible reason for why consensus is difficult to reach and results in several possible answers to the initial question: What constitutes good teacher education? Examining the case of Subject Teacher Education in DAC, a pre-service, concurrent education (Undervisnings og forskningsdepartementet (UFD) [Ministry of Education and Research], 2003), it may be possible to obtain a closer view of the practice of balancing the very different theoretical and methodological traditions between the field of art and the field of teacher education. In our opinion, studying education can exemplify the more general challenge of balancing subject content logic in teacher education.

In addition, this article addresses a documented need for more explicit research-based knowledge on teacher education in DAC (EACEA, 2009; Bamford, 2006; Bresler, 2007; European Union Council (EUC), 2007; Gulliksen & Hjardemaal, 2010; Haug, 2010; Hjardemaal, 2009; Kunnskapsdepartementet (KD) [Ministry of Education and Research], 2008/2009; Norwegian Agency for Quality Assurance in Education, 2006). It is emphasized that this research should be based on teachers' own experiences (Hjardemaal, 2009), or what the German philosopher and educationalist Eric Weniger (1957) called theories of the first grade (unspoken, tacit, or implicit theories), their reflection upon their first-grade theories (theories of the second grade), and a meta-theoretical reflection (theories of the third grade) (Hjardemaal, 1996, 2011a; Weniger, 1957). Such research is assumed to help teachers in making their practice even more elucidated and consistent with theory (Borgdorf, 2006; Hjardemaal, 2011a; Sevaldson, 2010; Weniger, 1957).

Conceptual Framework

Content Knowledge and Pedagogical Content Knowledge

Educational psychologist Lee E. Shulman (1986) argued that any given subject has a certain content knowledge (CK) that the student must learn, and that this CK involves a specific internal logic and structure. The subject must be a meaningful and separate unit with relative autonomy; there is something that this unit can do that other units cannot (Flitner, 1966). Whether a subject is or should be considered as such is an ongoing discussion

(e.g., Raithel, Dollinger, & Hörmann, 2009). Further, it can be assumed that certain subjects that have long traditions of being taught in school and could be named "disciplines" in a Homboldtsk terminology (Merton, 1996). These subjects have a specified CK that experts in the subject know and recognize (Bruner, 1960, 1977; Shulman, 1986, 2000). Several studies have problematized and developed the understanding of the concept of CK further (Ben-Perez, 2011), for example, the work of Ball, Thames, and Phelps (2008, p. 309) in mathematics.

The key question here, then, is what is defined as a given subject in our context. Subject teacher education in DAC is hardly a discipline in such a tradition. It is also possible to argue that it is not one subject, but several: crafts, design, painting, conceptual art, and so on, and crafts education, design education, and so on (EACEA, 2009; Gulliksen & Johansson, 2008). Such an interpretation is supported by the fact that the education and the school subject the teachers are trained in have been altered in every school reform (Brænne, 2009; Kjosavik, 2003), causing the learning outcomes in different parts of the subject to be divergent and even contradictory (Borgen, 1995; Brænne, 2009; Digranes, 2009; Gulliksen, 2009a).

Shulman (1986, p. 8) further argues that while experts in a subject have a thorough understanding of their CK, it does not necessarily follow that they know how to teach this to others. In educational situations, the expert needs to translate the logic and structure in a way that it can be communicated and learned. Shulman (1986, 1987) introduces the term "pedagogical content knowledge" (PCK) to emphasize this. Teacher knowledge is the term used for the combination of knowledge that teachers need in order to teach effectively, encompassing CK, PCK, and curricular knowledge (Ben-Perez, 2011; Shulman, 1986). "Teacher knowledge" as a collective term remains widely used by researchers in educational theory, as documented by Ben-Peretz (2011).

However, when faculty teachers are in the process of making CK pedagogical, they are confronted with the question of which CK they should teach. Subject teacher education in DAC is not alone in encountering this type of problem. It can be assumed that all professional education at one time or another encounters problems concerning whether to teach all skills necessary for the students' future careers or to teach general principles and leave the learning of specific skills for later (Kennedy, 1987). In professional education, in order to meet this challenge, teachers often focus on problem-solving and self-tutoring, which can be called preparatory knowledge.

It follows that the different CKs have different internal logic. The teachers also have different understandings of this internal logic and how it could or could not change. When a study of the Swedish art education field concluded that the logic of art education is subject to the logic of the art field (Börjesson et al., 2012), it opened for questioning whether the CK in art is therefore less prone to being changed or being made pedagogical.

The different understandings of the possibility or even relevance of including PCK as part of teacher knowledge creates a fundamental subject-specific tension, which makes Subject Teacher Education in DAC interesting in the broader context of educational research and thought. Teacher knowledge, in particular CK and PCK, form the knowledge base of the faculty teachers. This is the tension-filled context in which the education is embedded.

In this tension, faculty teachers must choose the content and method. In every aspect of our daily lives, we are forced to choose between different alternatives. However, it may be that not all alternatives are equally available. Coming from different backgrounds, the participants may recognize, understand, and emphasize different aspects of the education

(Foucault, 1989; Foucault & Gordon, 1980; Kleickmann et al., 2012, p. 101). Additionally, much of what a person does, including choice, is not readily available for conscious reflection, but it may become explicit as a result of reflection (Weniger, 1957).

The philosophers Hans-Georg Gadamer (1960) and Jürgen Habermas (1968, 2001) are central in a long theoretical tradition discussing the phenomenon of preconception and to what extent preconceptional knowledge can be made explicit, recognizable, and known to us. Preconceptions not only influence how students learn (Joram & Gabrielle, 1998; Kagan, 1992), but also how their teachers approach teaching. They form the basis for the opportunities that teachers see in the content and method of the subject, how they perceive what is being done, and how they understand those they teach.

When faculty teachers begin planning their students' education, they have preconceptions about what they should do, who the students are, and so on. These preconceptions can be adequate and precise, but they can also be somewhat false or distorted. The issue is to understand what is what. Shulman (2000) uses the term "illusory understanding" on such false ideas of what we know (p. 131).

Being aware of the inherent tension between art education and teacher education in our present context, it can be assumed that there are various preconceptions of different levels in the sense that some are more difficult to elucidate than others (Habermas, 2001). Take for example a faculty teacher who is a professional artist and a faculty teacher who is a professional teacher educator. Although both may have the same ideas on how to conduct a workshop, we can assume that they have different views on some of the more fundamental or ideological aspects of the education, for example, what the students should know upon graduation and why. Furthermore, they may have different illusory understandings of both themselves and the other, making it difficult to decide what is illusory and what is not.

In order to find a tool to effectively study this topic, more analytical terms are needed. The psychologists Daniel Kahneman and Amos Tversky introduced a psychological theory of judgment in the 1970s (Gulliksen, 2005, 2009b; Kahneman, 2002, 2012). Shulman (2000, p. 131) points out their analytically developed concepts and Kahneman's work on the flaws we make in everyday judgments. Using Kahneman's theory, we narrow the focus to the filtering process between the individual's teaching and the knowledge base: what is available to them of the teacher knowledge: both CK, PCK, and curricular knowledge. In some way, this can be regarded as the practical operationalization of the faculty teacher's teaching.

Judgment as a Cognitive Function

The normative and descriptive approach to judgment theory developed by Kahneman and Tversky (Kahneman, 2002) is based on the heuristics of judgment, that is, what lets us evaluate a situation and make judgments with less effort. Judgment is described here as a cognitive function. This cognitive function relies, first of all, on perception. One must perceive what should be judged. This input is then evaluated. Judgment has different modes: an intuitive mode that is fast, parallel, automatic, effortless, associative, slow-learning, and emotional (System 1) and a controlled mode that is slow, serial, controlled, effortful, neutral, and rule-governed (System 2). System 2 is also flexible (Kahneman, 2002).

The core concept behind these intuitive judgments is accessibility. We base our judgments on what is accessible at the time, parallel to what was described earlier as preconceptions. These are grouped in natural assessments and contextual assessments (Gulliksen, 2009a;

Kahneman & Frederick, 2002). Natural assessments may be the physical properties of what one judges, such as size, distance, and loudness. It can also include abstract properties, such as similarity, causal propensity, "surprisingness," and priming, or what we are motivated to see, such as the emotionally enticing and the affective valence. For faculty teachers, the contextual assessments of where they themselves are educated and which part of the subject they are teaching is likely of some importance, as is their motivation for teaching and what they expect their students to achieve.

What is accessible is also controlled by several other factors, one of which is the "anchoring effect." In short, the anchoring effect concept refers to how we are influenced by something preceding judgment. There is one mechanism that produces this effect for each system: the priming effect in System 1, and the deliberate process of adjustment in System 2 (Kahneman, 2012, p. 120). For faculty teachers, the anchoring effect could stem from a vast variety of influences, from basic pedagogical platforms to recent incidents.

When presented with ambiguous stimuli or complex questions, System 1 intuition is insufficient and System 2 reasoning takes over to present alternative solutions (Kahneman, 2002), and to allow reasoning and reflection of the alternatives.

An example could be teacher education in DAC, as it builds on different rationalities due to its balance between the field of art and the field of teacher education. This makes the faculty teachers' situation complex. It could be approached in System 2 (Kahneman, 2002), keeping the two fields separate but balancing them simultaneously in their teaching.

However, the theory also describes situations where System 2 does not take over, for example, when presented with questions that are too complex or stimuli that are ambiguous. In such cases, other mechanisms, such as attribute substitution, may apply. In short, we do attribute substitution when replacing a too-difficult question with another, easier one (Gulliksen, 2009b; Kahneman, 2002, p. 466). Professor of psychology Dan Kahan, has studied a similar phenomenon (Kahan, 2013; Kahan, Peters, Dawson, & Slovic, 2013). Instead of naming this a heuristic strategy, he describes it as a person's inclination to fit input into preconceptions: identity protective cognition or ideologically motivated cognition. In his studies, Kahan found that "subjects who scored highest in cognitive reflection were the *most* likely to display ideologically motivated cognition" (Kahan, 2013, p. 407, emphasis in original). This is linked to the above discussion on what could be made explicit and known to us.

Research Question

The aim of the study is, through the example of Subject Teacher Education in DAC, to generate knowledge on how faculty teachers balance subject content knowledge to create good teacher education. The conceptual framework generated two main topics: the actual practice in the education related to teacher knowledge (CK, PCK, and curricular knowledge), and the faculty teachers' everyday operationalization when they choose content and methods related to key concepts of intuition, rationality, the anchoring effect, and attribute substitution (Kahneman, 2002).

To address both issues, three specific research questions were formulated:

(1) How do teachers choose content and methods?
(2) How do they reflect on their choices?
(3) How do they justify these choices when discussing with their peers?

Methods

Focus Group Interview as the Research Instrument

Focus group interviews with teacher educators were the main data collection method in the study. Focus-group interviews allow researchers to participate in everyday, informal human interaction (Kamberelis & Dimitriadis, 2005, p. 887). When we want to understand teachers' choices, focus groups provide insight into their reflections and justifications in their discussions with peers. The format of focus-group interviews is similar to the way that teacher teams meet and plan academic terms. Therefore, our interviews could be interpreted as compressed instances of everyday activities with the exception that there is no academic year to plan.

The role of the researchers is more involved in focus groups than in other types of interviews. The dynamic interaction between all participants is the core of success. The researchers open the discussion and contribute to its progression and, as such, utilize the anchoring effect, the priming effect, and the deliberate process of adjustment (Kahneman, 2012). However, they play a lesser role in leading the discussion with specific questions than in other types of group interviews (Gulliksen & Hjardemaal, 2011; Kvale, 1996). The researchers in this study are colleagues of the participants in the focus-group interviews. It is considered important that those who know education also research it (Hjardemaal, 2009, 2011a; Weniger, 1957). However, conducting research on one's own profession and colleagues challenges the researchers' ability to provide a stringent research design (Cochran-Smith, 2005). Focus-group interviews can be used to address this challenge (Gulliksen & Hjardemaal, 2011): Focus-group interviews foster discussion of specific topics, underlying norms, preferences, and values, as seen in Kahneman's System 2 and Weniger's second-grade theory. The method has been used within different scientific, philosophical, and knowledge-theoretical traditions (Kamberelis & Dimitriadis, 2005).

In this project, we consider focus-group interviews an independent and central qualitative method that is well suited to answer the research questions. In our opinion, knowledge is, to a large extent, constructed and developed through dialogue with others (Berger & Luckmann, 1967; Gulliksen, 2006; Lave & Wenger, 1991; Reitan, 2007). Knowledge gained in this way is largely contextual and, accordingly, not generalizable. However, we do not disregard the possibility that it may also be transferred to other contexts after thorough comparative analyses (Lincoln & Guba, 2003).

Research Context of the Empirical Material

The empirical material in this study is the Norwegian Subject Teacher Education in DAC, a three year BA-education. This education is, in an international art teacher education context, unique due to its history as a part of a teacher-training institution, its commitment to a hands-on learning approach to various techniques and materials, and its concurrent organization—that students learn content while also learning to teach it. The students work over periods of up to eight weeks on separate projects in design, art, and crafts. At the same time, they have series of lectures addressing theoretical issues, and practical training in schools. The education has three main components that will be referred to as subject, pedagogy, and practice in this article. The academic year is organized according to cohorts, with a teacher leading the class throughout the year. The teachers are typically grouped into teams responsible for each cohort. However, the faculty teachers in the teams may work quite individually.

In Norway, at the time of the data collection (2011), two institutions offered this education. The number of students enroled in this program was approximately 4% of the number of students enroled in general teacher education (Samordnaopptak.no, 2012). The Subject Teacher program qualifies the graduate to teach grades 1 to 13. In the current curriculum, the subject consists of art, design, architecture, and visual communication (EACEA, 2009; Bamford, 2006; KD, 2006). Different learning outcomes, grouped as knowledge, skills, and general competence, are specified in each of these.

Participants and Organization

The teacher teams (faculty members) were divided into two focus groups, one for each of the two institutions. From each institution, four faculty teachers were selected to participate. All were teaching the same cohort, and all conduct research themselves. Ethical permission was given by the Norwegian Social Science Data Service, and formal permission was given by the Department Heads at the two institutions.

The two focus groups are referred to as A and B, consequently the participants are referred to as (A1), (A2), (A3) and (A4)—three females and one male; and (B1), (B2), (B3) and (B4)—two females and two males. In addition, the two researchers (one female, one male) participated in the discussions, resulting in six participants in each focus group. This group size was large enough to generate the needed dynamic in the discussion, yet small enough to remain manageable.

Each interview lasted between 90 minutes and 2 hours, a common duration for focus-group interviews (Gulliksen & Hjardemaal, 2011; Kamberelis & Dimitriades, 2005). The interviewers ended the interview when the conversation on the focus topics came to a natural end. The interviews were audio recorded, and these recordings were transcribed and analyzed.

Each group was interviewed twice. The first interview took place in the middle of the spring term and the second at the end of the autumn term, when the teachers had begun teaching a new cohort. The time span between the first and second round of interviews was intentionally long so that the participants could use practice from their daily teaching as a frame of reference, not the arguments or understandings they developed in the first set of interviews. This aspect of de-contextualization was discussed in the interviews.

Open interview guidelines were developed before conducting the interviews. The central function of the guidelines was to maintain the clarity of the focus of the interview, to prepare us to avoid becoming too immersed in the discussion ("to go native"), and to manage the control effect, wherein the researchers' presence influences the participants in such a way that they change their natural way of discussing (Cochran-Smith, 2005; Hellevik, 2002; Reinhartz, 1997). The guidelines for the first interview were based on an article the participants were asked to read before the interview (Gulliksen & Hjardemaal, 2010) and on open questions like: "how relevant do they find the discussion from the article to be for their experienced practice, what should the education qualify for and what content and methods do you think are most crucial in this education?" The guidelines for the second interview focused on topics discussed in the previous interview. This approach simultaneously focused the group discussions and anchored the participants' intuitive responses and reasoning. See below.

The Empirical Analysis

The aim of the empirical analysis was to organize the focus-group data in a way that made it possible to understand how the participants reflected and justified their choices of subject content. An analytical tool of constructing themes and categories was therefore applied to provide a basis for discussion.

The first step in the analysis was to search for emergent themes (Guest, Bunce, & Johnson, 2006) in the material gathered from the first round of interviews. The coding process at this stage was explorative and aimed at identifying mutual or individual understandings that the faculty teachers expressed in the interviews concerning the content and methods in the education. The researchers worked together on the transcription and on the initial analysis and discussed suggestions for emergent themes as they occurred. From the plethora of possible themes, the researchers chose the themes they considered most relevant to the topic, including: the link between content and professional identity; the balance between teaching and making; what to choose from the curriculum; who are the students; and the system of the education.

The material from the second round of interviews had different characteristics than the first interviews because the second discussion focused on the themes evinced from the first. The second discussion was also influenced by the time span between the two interviews in the sense that the first discussion had become somewhat remote to them, providing the opportunity to reflect on their previous arguments. As such, the second round of interviews generated material that was more extensive, nuanced, and qualified on the themes.

The analysis of the second set of interviews began with an open coding process. However, the character of the material allowed it to progress in another, and more focused, way than the previous. This time, a professional transcription firm handled the transcription. The two researchers then conducted the initial analysis by listening to the recordings and reading the transcriptions while discussing suggestions for new emergent themes as they occurred.

After the first open round of analysis of the second interviews, the researchers returned to the material as a whole, re-coding and re-analyzing based on keywords relevant to content and methods in education, and consistent with the themes from the initial analysis. For example, the keyword "choice" was used to find instances where the faculty teachers discussed their choice between content and methods.

New themes and sub-themes emerged in the analysis. Groups of themes were organized into categories. In this form of analysis, it can be argued that the distinction between emerging and constructing themes is somewhat blurred. In delving into the material, we experienced the themes as they emerged from the discussions, and the organization of the themes into categories as our construction. Several approaches to grouping themes into categories were explored and discussed during this phase of the analysis. Key points from this study were presented as papers to international conferences and discussed with the audience (Gulliksen & Hjardemaal, 2012, 2013). Finally, the analysis was concluded with four categories of themes and sub-themes, all intertwined in the sense that they were not always easy to distinguish:

(1)   Category A: preconceptions of the education and the subject—a category comprising themes fundamental to the faculty teachers preconceptions like *pedagogical platform*, *aims of the education*, *teacher autonomy*, *definition of learning*, *teacher identity*;

(2) Category B: latent conflicts—a small category comprising themes like *the three components of the education (pedagogy, the various art and crafts subjects, and practice in the schools) are separate* and *practice in schools takes too much time*;

(3) Category C: the subject's content knowledge—a large category comprising themes like *different understandings of how students become good teachers*, *something is more important than something else*, *arguments for the subject as one subject* and *arguments for the subject as several subjects*;

(4) Category D: the power of definition and the identity of the subject—a category comprising opposing themes like *the same CK could be taught in another course* and *the CK is redefined in this context and is not the same as would have been taught in another course*.

As groups of themes, these categories clarified what the faculty teachers discussed during the focus-group interviews and how they reflected and justified their choices through the conversation/arguments in the focus-group interviews. Furthermore, the construction of these categories emphasized how the different arguments or justifications were given different relative meanings and values by the faculty teachers. This analysis was empirically grounded in the material in order to understand "the complex ways in which people position themselves in relation to each other as they process questions, issues, and topics in focused ways" (Kamberelis & Dimitriadis, 2005, p. 904). This understanding was further developed based on the presumption that in our ways of talking about and understanding the world, we are not neutral mirrors of our surroundings, but rather are active participants who can alter these surroundings (Foucault, 1989). Both the analysis and the dynamics of the situation are then seen as the processes of making the intuitive/implicit more reasoned/explicit (Kahneman, 2012; Weniger, 1957).

Validity

In a study using focus-group interviews, validity is closely linked to the quality of the discussion. What characterizes a good dialogue has been discussed by many researchers, for example, Habermas and Lyotard (Hjardemaal, 2011b). The researchers need to be attentive and strive to establish a rational dialogue between the participants by encouraging this before the interview begins. This is done by ensuring that all participants have the opportunity to present and elaborate upon their points of view and by asking follow-up questions. Kvale's (1996) concept of communicative validity can illustrate that validity is established through an open, constructive, and critical dialogue (Gulliksen & Hjardemaal, 2011). In this dialogue, participants share comparable experiences that "can be combined to form intersubjective experiences that are less prone to individual bias or gaps in knowledge" (Anttila, 2009, p. 16). Focus-group interviews allow us to discuss such intersubjective experiences.

Results and Discussion

Too Many Choices

The informants refer to the subject as having many parts from which to choose. It had three main components: the subject, pedagogy, and practice: "I experience that there are actually three components, and these three components are living their own life" (A2). These components contained multiple elements, such as art history or crafts skills.

The discussions in the interviews centered on the organization of these components and elements, and revealed that education is seen as complex and that the present form of organization "is not very wise" (B3). Much of the discussion focused on how to incorporate and adjust these parts into a good learning journey for the students. The themes include many examples of the faculty teachers balancing between what is practically possible and what is professionally acceptable, for example, quotes like:

> … it is supposed to be 13 weeks of practice in the Subject Teacher Education, but it involves a lot more. … and they have debriefing that almost eats a whole week afterwards, when they summarize their experience, write this report and have an oral presentation. (A1)

> this is simply one of the roots, another is the learning of skills … .How can we manage to put these two together in a balanced way? (B2)

The focus-group interviews then centered on the faculty teachers' reflections on several options from which they must choose. Multiple-option choices are not problematic in themselves; however, in our analysis we found that the themes and sub-themes had quite different foci. As such, it was possible to group them into categories that are not explicitly mutually exclusive, but that have some fundamental differences in, for example, basic pedagogical platforms, the way they talk about theory-practice problems, and so on. In their description and reflection of the situation, the participants referred to this plurality of choices as potentially overwhelming: "there are too many pieces" (A4) and "we are trying to fit one-and-a-half liter in a one liter jar" (B1).

Looking more closely at how the participants refer to this plurality of options, it is also possible to recognize a conceptual vagueness. For example, the informants' used the term "a piece" as a general term for something that is a part of something else; elements; components; and the subject as such. This vagueness might be related to the participants' experience of being overwhelmed by options, both because the vague terms open for more options and because the relationships between options is unclear. Also, they cannot be sure that others have the same understanding of the terms they use.

Another explanation for why the many choices can be seen as overwhelming may be found using Shulman's (1986) concept of CK. This terminology refers to *a* subject with *one* (set of) CK with an internal logic. We did observe instances wherein the participants referred to the subject in the singular. In these instances, they refer to this single subject as having a relative autonomy (Flitner, 1966) in the sense that what they describe as the subject's content could not have been taught in any other subject. However, in the themes in Category D, we observed that the participants seemed to disagree on what the one subject was in this particular situation and what was a meaningful and separate unit to teach. This support our initial assumption that this Shulmanian understanding of *a subject* was perhaps not meaningful for all participants, and opens the topic for interpretation concerning whether the informants have the perception that there is not one, but several, *subjects*, and that it is their CK that should be taught. The observed plurality of choices can thus be understood as being based in an underlying disagreement on which CK should be taught, and, as a consequence, which logic or rationality the education should build on (Kleickmann et al., 2012; Shulman, 1986).

In the introduction, we indicated that such an outcome could be expected when presenting Subject Teacher Education in DAC as balancing between the field of art and field of teacher

education. However, even though they do refer to balancing art and teacher education, these two were not the only, nor the most prominent, ones. Other examples were: in practice versus at the university, teaching method versus learning subject, personal expression versus techniques, and visual culture versus material culture. All in all, this analysis and empirical documentation points to an overwhelming complexity, which can be understood as different CK from which to choose, providing a possible explanation of why the many choices can be understood as overwhelming.

It follows that that which PCK the teachers need to develop and implement in each of the components of the subject will differ. We could identify examples of the faculty teachers' arguing for their chosen PCK, and examples of argumentation for not making CK pedagogical. In the introduction, we asked if it was possible that CK in art was less prone to be changed or made pedagogical as the logic in the art education was subject to the logic of the art field. We found support for such an interpretation. However, such disinterestedness in PCK could also be observed in other components of the subject, for example:

> I could have given the same lecture when I'm lecturing in a BA course in pedagogy. They have to learn their Vygotskij, and Piaget, and … . (A2)

This directly contrasted with this statement:

> It is something else than a subject or content of knowledge that should enter the mind of the student. It [the content] lies there as a necessary part of it, but it is not crucial that they know their Rembrandt … that is not the point. (B2)

It is thus possible to state that the participants in the focus groups disagreed upon what PCK is/should be in art teacher education, whether it is relevant to make CK pedagogical and even whether PCK is indeed possible in this subject.

Different Logics

It was further possible to observe the participants navigating between the pluralities of choices (one versus several subjects, with or without PCK). As mentioned, each option has different rationalities, and when choosing one, a specific logic follows. This navigation seems to be closely linked to how the participants weighed the different options:

> … what is the subject all about? (B2)

> … I feel a bit torn between "Arts and Craft as such" and "Arts and Craft in the classroom." We have colleagues who are very focused on school, and those who are only subject. (A1)

Central to their weighing was the participants' opinion of the relative importance of the present option; which of these options is more important for achieving the present aim?:

> … but there are so many different ways to do this [refers to another University College practicing the consecutive model]. Our students are all the time drilled in: how would you relate this to the school? How should what you learn now be transferred to the school?

So you are constantly reminded that this is what you will be doing. That, I think, could be an advantage. (A4)

Some of the themes referred to such reflections, and it was possible to discern that the participants disagreed on this weighing, as can be seen in the above quotes referring to Vygotsky (A2) and Rembrandt (B2).

Such discussions are linked to the power of definition and the identity of the subject, indicating that the participants' disagreement in weighing the options has profound significance both for the field itself and for the participants' understanding and actions within the field (Foucault, 1989; Foucault & Gordon, 1980). The justification of an option's relative weight was conveyed both explicitly and implicitly. Whether explicitly or implicitly conveyed, the weighing of the possible options is a form of selection where something is chosen and something is not. As such, it is a form of reduction of complexity and thus is a way to cope with the overwhelming plurality of options.

However, even though this is a way to cope with the complexity, it is not a solution to the problem. Rather, this different weighing demonstrates an underlying conflict in the material. Although their weighing is initiated by the need to simplify a complex situation, its manifestations are not arbitrary nor linked only to the complex present situation. The analysis indicated that the weighing done by each participant (Categories C and D) was linked to their preconceptions (Category A).

The theory on the heuristics of judgment (Kahneman, 2002) can be used to understand both why this happens and how it might be a problem. The participant's weighing can, with this terminology, be understood as partly caused by an intuitive understanding (System 1) and partly caused by a reasoned understanding (System 2). In the focus-group interviews, the participants used both intuitive and reasoning capacities, which are formed through their various backgrounds, education, prior experience, and reflection.

For example, an art historian has an intuitive understanding of art history that is based on prior knowledge and what he/she has seen or done recently, in addition to a well-reasoned and reflected understanding of the field. Other art historians may have different intuitive and reasoned understandings. The discussions between participants in the focus-group interviews were often fragmented, especially when discussing the notion of one subject versus many subjects, as the example with Vygotsky and Rembrandt, above, illustrates. This supports the notion that different logics in and between different preconceptions leads to contradictory rational arguments as well as intuitive understandings. They precede the judgments and, as such, they anchor the participants' discussions. We can argue that this anchoring effect (Kahneman, 2012) influenced both their intuitive understanding of the discussion in the interviews and the reasoning they used when discussing.

Given that the material documents contradictory positions and thus different logics, there seems to be support for what was discussed in relation to Shulman (1986): that not all participants found the notion of one subject meaningful, but instead referred to several subjects. Understanding the subject to be several subjects will perhaps be easier for the faculty teachers since they can limit the discussions to colleagues within art history, for example, presumably sharing more preconceptions and logics. Understanding this as one subject would entail the construction of a new entity. This would be more difficult cognitively as it would demand the expert to reflect on his/her expertise and determine what knowledge is relevant to bring into the new entity and why. This entails a re-formulation of one's own expertise in light of the new autonomy. Such a renegotiating of professional identity is difficult, and even more so

because the faculty teachers tend to position themselves as protectors of their own subject matter (Hökkä & Eteläpelto, 2014). Using Kahneman's (2012) theory, we can thus understand how this weighing is actually deeply problematic and perhaps does not have a simple solution.

The theories of the heuristics of judgment emphasize that our cognitive approach tends to seek heuristic solutions but that activating reflection and reason is the key to identifying false conclusions, unintended anchoring effects, and so on. In the focus-group interviews, the methodological approach of first asking the participants who they are and why they decided to participate in the interviews was applied to activate the anchoring effect in relation to the study topic and to invite rationality to the discussion when the participants presented their positions. This strategy worked—we observed a shift during the interviews from an intuitive mode (System 1) of argumentation to a more controlled mode (System 2). The participants not only presented their positions but also refined and adjusted these positions when communicating with the others during the interviews. For example, by explaining to each other in detail what they actually meant; picking up on and returning to issues; or reflecting on the discussion itself "the discussion has centered on what is relevant topics in the education" (A2). We can therefore assume that during the discussions, they had time to recognize their intuitive judgments and consciously develop argumentation.

However, interestingly, they did not reach an agreement or a shared position. Rather, the discourses became more explicit as parallel rationalities. Referring to Kahan (Kahan, 2013; Kahan et al., 2013), it is possible to argue that when the participants did not reach a consensus, the reason may be a motivated cognition. Due to the cognitive reflection generated in the focus-group interviews, they found rational arguments that fit into their preconceptions.

Avoiding Confrontation

In many of the themes, latent conflicts could be discerned that were even personally invasive: "[debriefing after practice] … almost eats into a whole week" (A1). This example refers to a commonly recognized conflict within teacher education in general between the practice in schools and the education in the university. The participants' comments indicated that their roles were closely linked to the university and the dissemination of the CK and methods used there, and that they do not have much say in what goes on in the practice:

> When I am visiting students in praxis, the task the students and the teacher have chosen to give the pupils in ninth grade. I don't think it challenges them … it is no problem to do such a task with primary school pupils. (B1)

The intensity and engagement in the discussion on choosing from among the plurality of options, the weighing of them, and the different logics behind them can be interpreted as regulated by the degree of conflict the participants experienced.

This indicates that the heuristic of choosing as a form of reduction of complexity fuels the degree of conflict. Even though this strategy is necessary in order to cope with the overwhelming plurality, it makes the gap between the participants' positions stand out more clearly. The discussions in the focus groups were internal between stakeholders discussing their own field of expertise with other professionals. It is to be expected that such a context will present dilemmas for faculty teachers.

Still we could not find examples of the participants addressing this as a problem in the sense that they reflected upon the challenges embedded in their choosing. For example, they did not discuss which challenges their field of expertise would face if it were agreed that Subject Teacher Education in DAC were one subject or several subjects.

If all parts of the field are considered equally important and relevant, the selection could become quite random. In the analysis, it was possible to understand that the person selecting between choices, while avoiding addressing the problem of choosing itself, in practice substituted the question: "Which one do I choose from all these options and why?" with a simpler question, such as: "Which one do I choose from within these, for me, accessible choices?" Here, accessible means being anchored intuitively or reasoned in the context of the person's preconceptions. It is possible to see such an avoidance of a difficult problem as a sort of heuristic strategy or a way to avoid or minimize the complexity of a question. Drawing on Kahneman's (2002) theories, we can interpret this as a form of attribute substitution: Instead of answering a too complex question, they substituted this question with an easier one.

The Way Forward

Returning to the Context of Application

In the discussion we focused on three issues: (1) the many choices and the participants' experience of them as overwhelming, using Shulman's (1986) theories to explain that it may be several subjects with different CK and PCK; (2) the different logics behind the choices and the different relative assigned weights of the possible options, using Kahneman (2002) to understand how this weighing is related to preconceptions, intuition, and reasoning, and with support of the concept-motivated cognition, explaining why the parallel rationalities became more explicit during the group discussion; and (3) the avoidance of addressing this problem, using Kahneman, again, to interpret this as attribute substitution.

It seems that this situation was frustrating for the participants. To some extent, we as researchers can interpret their extensive use of heuristic strategies as a sort of "standstill" and illusory understanding (Shulman, 2000). The different rationalities are too separate to create one effective solution. Also, it is contingent on the participants' willingness to renegotiate their professional identity (Hökkä & Eteläpelto, 2014).

Taking this discussion one step further, the context of application could be approached through the theories of the educational philosopher Theodor Litt (Hjardemaal, 2013; Litt, 1949). Using Litt's (1949) theoretical perspective, we could see the different rationalities within the field as antinomic in the sense that they are fundamentally different and can never be combined or even harmonized. Or, it might be that we could see them as polar in the sense that they will enrich each other and that the tension between these counterparts is a positive force, constituting the field itself.

It is our opinion that this perspective offers new insight into what are considered essential content and methods within Subject Teacher Education in DAC. It presents a way to understand the mechanisms that underlie the teachers' selection, reflection, and justification of the content and methods in the concurrent model. Thus, we argue that meta-reflections on the parallel rationalities and the polar tension between them can make them accessible and possible to choose from. The tension and the power distribution between them thus become more pronounced. For example, when university faculty discusses a topic, it can be

expected that these parallel rationalities will be present. In itself, this is not a problem, but it can become problematic if not addressed. It may be assumed that one argument will meet the same counter-arguments and instances of talking past each other each time the topic is discussed. As teachers in this field ourselves, we have known this to happen. It can be discouraging for the participants to have the same debate over and over again. Therefore, we could instead interpret this phenomenon as the result of a dynamic and driving tension between different and substantial parts of the field of knowledge. By doing that, we could confront our preconceptions, which produce our arguments. Then it can be possible to use this tension in a positive way by approaching it with our reasoning System 2 and together construct a common ground where these parts and different horizons of understanding can enrich each other.

By identifying parallel rationalities and by using the tension between them as a dynamic and driving force that enriches them, the complexity of the field could be treated fairly. As such, it may yet be viable to see this education as one subject constituted by tension: a single subject with relative autonomy (Flitner, 1966). In order to do this, it is necessary to reframe this complexity in the situation from a negative to a positive attribute.

However, keeping in mind the problem of motivated cognition, in order for such a reflection to lead to constructive discussions, it is necessary to take extra measures. For example, we need to apply methods for debiasing (Joram & Gabrielle, 1998; Kagan, 1992; Kahan, 2013). We also need to develop ways to remove the expressive incentives for understanding something in one particular way—what makes it personal or evokes membership to a particular group? For example, it could be useful to discuss the influence of this on limited resources (time, materials), competence, cooperation, and social climate.

A focus on the dynamic and driving force in the tension between the components that constitute this field of knowledge can be seen as constructive in the further development of Subject Teacher Education in DAC. Teachers also need to present this phenomenon to students and include them in the reasoning for their choices as products of this tension. Including the students can stimulate their preparatory knowledge.

Contribution to Knowledge

This article addresses a well-known challenge in teacher education in general: the choice of content and method, in a specific context of application to Subject Teacher Education in Design, Art and Crafts. The aim of this study was to generate knowledge on what faculty teachers consider possible and accessible choices of content and methods in their teaching, and to contribute to making practice more elucidated and consistent with theory for us as teachers and for our colleagues (Hjardemaal, 2011a; Weniger, 1957).

The article is founded in a Shulmanian tradition, especially in utilizing the concepts CK and PCK. However, we found the need to supply and expand this theory with the theories of Kahneman et al. and others. This need was fueled by Shulman himself and his references to Kahneman (Shulman, 2000). Our contribution to knowledge by this article is thus threefold: (1) it documents a practice that was not previously documented; (2) it explains some of the more problematic aspects of this practice in a way that may provide a new basis for faculty teachers in Subject Teacher Education in DAC to choose content and methods with the help of Litt's theories; and (3) it expands on the understanding of the content and premises for PCK by exploring the thread between Shulman and Kahneman.

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