Diverse orientations in craft education: Student teachers' conceptions and perceptions

Tarja Kröger

Craft education in Finland has been in a state of change. The concept of a holistic craft process was implemented in the National Core Curriculum in 2004 and the new Curriculum from 2014 strengthened it. Craft and holistic craft is not one unity but includes several orientations. This study aims to research student teachers' conceptions and perceptions about diverse orientations and the necessity of craft education before they begin their studies in craft pedagogy. Given that the beliefs that student teachers bring to professional learning play a pivotal role in influencing what they can learn from teacher education, they are a subject worthy of investigation.

The data consists of on-line questionnaire answers by student teachers (N=113) at the University of Finland in teacher education in 2014. The on-line questionnaire was answered at the beginning of a basic course in textile craft education at an early stage of their teacher studies. Findings suggest that student teachers conceive of craft education primarily as model-oriented and skill-oriented rather than design-oriented and expression-oriented. Student teachers think that craft education is needed at school, but explanations are not very diverse. The findings of this study can be useful in the process of developing teacher education programmes.

Keywords: teacher education, craft education, holistic craft, diverse orientations, student perceptions, student conceptions

Introduction

Teachers who teach craft need to have a valid, justified and structured view of craft as a school subject and a clear pedagogical vision of the necessity of craft education (Pöllänen & Kröger, 2000; Lepistö, 2004).

When weekly craft lessons at school are examined, it can be seen that increased emphasis has been put on primary school (ages 7-12) craft education. It means that classroom teachers have a more important role in teaching craft. Earlier, craft was more emphasized in secondary classrooms (ages 13-15) where teachers have the educational backgrounds of subject teachers. The change is a challenge for teacher education: how to help classroom student teachers to achieve a pedagogically justified view of craft education when they accomplish just one course in craft education.

When students enter a teacher education programme, they are not blank slates. They hold a set of beliefs about teaching and learning which is shaped by their prior experiences as learners. Such beliefs about teachers, teaching styles and learning processes are so powerful and deep-seated that they can even remain relatively unchanged by initial teacher education (John 1996). It can also be said that student teachers' ingrained beliefs act like a lens through which they interpret the content of teacher education courses (e.g. Calderhead & Robson, 1991; Zeichner et al., 1987).

There is, however, a growing body of research that is beginning to question the inflexibility of student teachers' prior beliefs and the inability of teacher education to change student teachers' beliefs (e.g. Cabaroglu & Roberts, 2000; Wideen et al., 1998). Especially reflection on prior experiences has been

identified as a critical component of teacher education programmes by many researchers (e.g. Calderhead & Robson, 1991; Fajet, Bello, Leftwich, Mesler, & Shaver, 2005; Shepherd & Hannafin, 2009).

This is the reason for my research. It is worth studying student teachers' views of craft and craft education in order to encourage them to reflect on their beliefs vis-à-vis the new curriculum and renew their ideas of craft education.

Diverse orientations in craft education

Is the learning in craft education about practicing motor skills or maintaining craft's heritage, learning design, or learning self-expression? Craft and craft education is no longer one unity but various dissimilar approaches. Diverse approaches can be seen in previous research: in concept analysis (see Kojonkoski-Rännäli, 1995; Ihatsu, 1998; 2002), in teaching and learning materials (see Kröger, 2003), in pedagogical models (see Pöllänen & Kröger, 2004; 2006; Pöllänen, 2009) and in the subjectively construed meanings of craft (see Rönkkö, 2011; Kouhia, 2012; Karppinen, 2013). Diverse orientations are also connected to the discussion of the necessity of craft education (see Veeber, Syrjäläinen & Lind, 2015).

In her thesis, Seija Kojonkoski-Rännäli (1995) introduced the concept of holistic craft. This concept refers to craft process in which designing, manufacturing and assessment are conducted by the same person. If one of the elements is left out, it becomes ordinary craft. Ordinary craft is craft without the maker affecting the design phase. (Kojonkoski-Rännäli, 1995.) Ordinary craft is also called product-making or model-oriented craft (see Kröger, 2003; Pöllänen, 2009). Ordinary craft includes a view that a maker uses a ready-made design that contains the aesthetic or technical qualities of the artefact, or a series of ready-made technical solutions (Pöllänen & Kröger, 2004, 161). Ordinary craft can be significant to the maker because it satisfies the need for a certain product, develops basic craft skills or has some therapeutic value (Pöllänen & Kröger, 2004, 162). In contrast, holistic craft benefits the craft maker by developing a range of skills, such as design and reflection skills (Pöllänen & Kröger, 2000).

The concept of a holistic craft process and the multiple approaches and meanings of craft are also acknowledged in the new Finnish National Curriculum (FNBE, 2014) which will be launched in schools by the autumn of 2016. The curriculum (FNBE, 2014) states "*the task of craft education is to guide pupils to a holistic craft process management. Craft is a multimaterial subject, where expression, design and technology based activities are carried out*." The former Finnish National Curriculum (FNBE, 2004) states, among other things, that "*the task of craft education is to develop pupils' craft skill* --" The former curriculum also had the content intended to promote design and expression-oriented craft but it was not stated as clearly and strongly as it is in the new curriculum. Both curriculums refer to the notion of the holistic craft education by emphasizing designing, making and evaluation processes (see FNBE, 2004; 2014). The former curriculum (FNBE, 2004) states that the aim of craft education is that a pupil "*learns a holistic craft process gradually*". This has been interpreted that craft education could also be model-oriented in elementary grades. The new curriculum (FNBE, 2014) states that "*the tasks of craft education is to guide pupils to master a holistic craft process*".

The concept of a holistic craft process has been concretized in diverse theoretical approaches and practical experiments (see e.g. Kangas, 2014; Kangas, Seitamaa-Hakkarainen & Hakkarainen, 2013; Pöllänen, 2011; Rönkkö & Aerila, 2015). Seitamaa-Hakkarainen (2011) emphasizes the essence of craft education as design-oriented activity and as a form of design-based learning. The focus is on the nature of authentic design problems and materialization of conceptual ideas in design learning. Furthermore, Seitamaa-Hakkarainen (2010, 72) has highlighted the value of design activity and

design-based pedagogy by emphasizing the importance of learning by collaborative design (LCD). The Learning by Collaborative Design model (LCD model) emphasizes collaborative interaction within and between peers or teams; between students and their teacher and/or external domain experts of the design field (Seitamaa-Hakkarainen 2011, 8). Seitamaa-Hakkarainen (2010, 75) has stated that the inclusion of design activities in curricula provides new possibilities of valuing craft education, especially in elementary school. She has also noted that the challenge for craft education in Finland is that the origins of the design problem too often come only from student's personal needs and the repertoire of different kinds of design problems have been neglected. Design problems should also reside outside the personal context. (Seitamaa-Hakkarainen 2010, 75.)

Expression-oriented craft is also based on a holistic craft process. Expression-oriented could also be called art-oriented (see Kröger, 2003) or self-expression craft (see Pöllänen, 2011) or expression-oriented (see Rönkkö, 2011). Here it is called expression-oriented without the pre-affix, emphasizing that expression can also be experienced in collaborations although the expression process is usually very individual. Craft as expression finds starting point for the process and design from everyday living and forms of culture, for instance, art work, tradition, memories, nature or experiences (Kröger, 2003, 148). In the school context, a common stimulating theme can assist in creating associations and shaping ideas (Kröger 2003, 178).

Rönkkö and Aerila (2015) have reported a project that has features from expression-oriented craft. They have used David Kolb's model of experimental learning for supporting a holistic craft process where literature was used as the stimulus for designing a craft product.

Skill-oriented craft can also be seen as a holistic craft (Kröger 2003, 181). Skill-oriented craft refers to craft where the starting point is the specific form of craft skill. Designing is linked to possibilities provided by the specific craft skill. Learning or practicing a specific skill inspires the student to invent ideas of how to apply skills that benefit product design and refinement. Pupils at school need to be assisted in discovering the possibilities provided by the specific skill. (Kröger 2003, 139-142.)

Marja-Leena Rönkkö (2011) has examined the meanings students perceive during craft processes. As a result, the students have been classified into four classes according to these meanings: (1) craft product-oriented, (2) craft skill-oriented, (3) craft expression-oriented, and (4) craft-tradition-oriented. The first three orientations are quite similar as described above so, they are not treated again here. However, craft-tradition-orientation needs clarification. Craft-tradition-oriented students get their motivation for making a product from fostering craft tradition, for example from the will to learn traditional craft techniques (Rönkkö 2011, 82). Rönkkö (2011, 100) differentiates between traditional craft and craft-tradition-orientated craft. Traditional craft can been seen as a part of ordinary craft where a craft maker copies a traditional craft item. Craft-tradition-oriented students modify and update craft traditions to the present day and to their own purposes and life styles. In this way, they can create new traditions for the future. Craft-tradition-oriented students get their inspiration from traditions but do not copy them. (Rönkkö 2011, 100–101.)

The categories of orientations used in this research are based on the above research work. The main source is Tarja Kröger's doctoral thesis (2003) which proposed that teachers describe craft processes in at least four ways on an educational website of crafts: (1) model-oriented, (2) skill-oriented, (3) design-oriented, and (4) art-oriented. The fifth orientation, tradition-oriented craft, was included from Malla Rönkkö's (2011) research. The descriptions of orientations were formulated for this research both for school and out-of-school contexts. The descriptions are the following:

Model-oriented craft in a free time context. I do my crafts according to ready-made instructions. I may see an appealing craft item or I have an image of it. I look for instructions which correspond to my image of a craft item. I get instructions e.g. from a magazine, a book, an internet site or another person. I work more or less according to the instructions. I may make changes to details, but I do not make major changes. Therefore, the end result is more or less a copy of the model. I am pleased that I manage to complete a craft item according to the instructions.

Model-oriented craft in a school context. A teacher presents a craft item and/or instructions, according to which a craft item is supposed to be made. You can make small changes to a model, such as changing a colour and adding your own details. A process progresses according to written instructions or the teacher's spoken instructions. The end result is a more or less similar to a model or the instructions. During the process, you learn some useful practical craft skills which you can use in everyday life. You can also learn the basics of craft skills that can be employed later in more demanding tasks. You will also learn to read and use instructions.

Skill-oriented craft in a free time context. I get interested in a specific craft technique or a craft type or a skill (e.g. lace knitting, needle felting, bookbinding, spinning, beadwork, rya rug ...). I may take a course on the subject, or I can explore a topic by making experiments and searching for information. Training, experimentation and familiarization will create thoughts and ideas about how I could apply the skills learned. I get satisfaction from the fact that I have learned a new craft skill or that my skills have developed.

Skill-oriented craft in a school context. First, you learn a new craft skill or a technique (for example, embroidery, crochet, knitting, needle felting, knotting...). So, initially you make a sample or an experiment, which can also be a small craft item. Then you can discover how you might use the practiced skill or technique for an actual craft. A teacher may show a variety of examples and pictures of possibilities. During the process, you learn motor skills and a specific craft skill, which can be applied to designing and making craft items.

Design-oriented craft in a free time context. A craft process starts from a need, a design task or a practical problem, e.g. I need a gift for a 5-year-old child; I need a cargo box for my accessories; My room needs a new interior design; I want to do something useful with old jeans; I need a new outfit for an event, etc. I may browse pictures and instructions but I am not satisfied with ready-made models. I swirl different ideas around in my head and on paper. I edit a design by taking into account resources, a user and an intended use. The design will evolve during the making process. If I do not have a solution to a problem, I will look for information from internet sites or books or I will ask someone else for help. I am particularly satisfied with the fact that I have designed a craft piece by myself, and that the end result is suitable for the intended use.

Design-oriented craft in a school context. A teacher allocates a design task or problem, for example, design and make a bag from recycled materials. The teacher can also ask you to define your own design task. You brainstorm and search for information for your design. You develop your design by taking into account, among other things, resources, a user and an intended use. A design can be developed further during the making process. You search more information from internet sites, books, or ask others to help when you face problems. During the process, you learn in particular creativity and problem-solving skills.

Expression-oriented (art-related) craft in a free time context. My craft process starts e.g. from an image, a thought, an emotional state, or a memory. An image may be related to a significant observation or an experience. I process the image so that it gradually develops into a concrete craft product. The end product is kind of an artwork in which the idea or thought is expressed by means of

craft. The process is self-directed, i.e. my work does not proceed according to a strict plan. I get satisfaction from the fact that I can express something that is important to me by means of craft.

Expression-oriented (art-related) craft in a school context. Designing starts from an image, thought, emotion, memory, etc. Designing can be supported, for example, by an art museum visit, listening to music or another inspiring thing. The image is processed so that it gradually develops towards a concrete craft object. You could say that the end product is kind of an art work in which the idea or thought is expressed by means of craft. During the process, you learn to express your ideas through crafts.

Tradition-oriented craft in a free time context. My craft process starts from an interest in my own craft tradition or the cultural craft heritage of a foreign culture. Such an interest may arise from a museum visit, an exhibition, a journey, a course, a community, etc. I may practise a craft according to a traditional or a historical model, or I may customize it to the present day or to my own preferences. I get satisfaction from the fact that I have learned something new from my craft tradition or others' cultural heritage by making a craft piece.

Tradition-oriented craft in a school context. First, the teacher acquaints the students with a specific tradition, a historical era or a foreign culture. Then, you design and practise a craft which has derived its inspiration from a culture you have researched. During the process, you learn something about your own craft tradition and/or others' cultural heritage.

The principal idea of the orientation categories is to offer a tool for student teachers to reflect on their experiences and views. However, orientations are versatile and multifaceted constructions that have common and overlapping elements (see Figure 1). Skill-learning, for example, may get a different remark or emphasis among certain categories. In skill-oriented craft, skill-learning is seen as a flesh for designing. You can also learn skills in other orientations, but skill-learning has a different kind of a position. For example, in design-oriented craft, skills work as relevant tools for implementing your design but they do not work as an actual starting point for the process. The important distinguishing feature between the orientations is the starting point for a craft process and designing. Another distinguishing feature is the nature of the craft process and how it is supported.

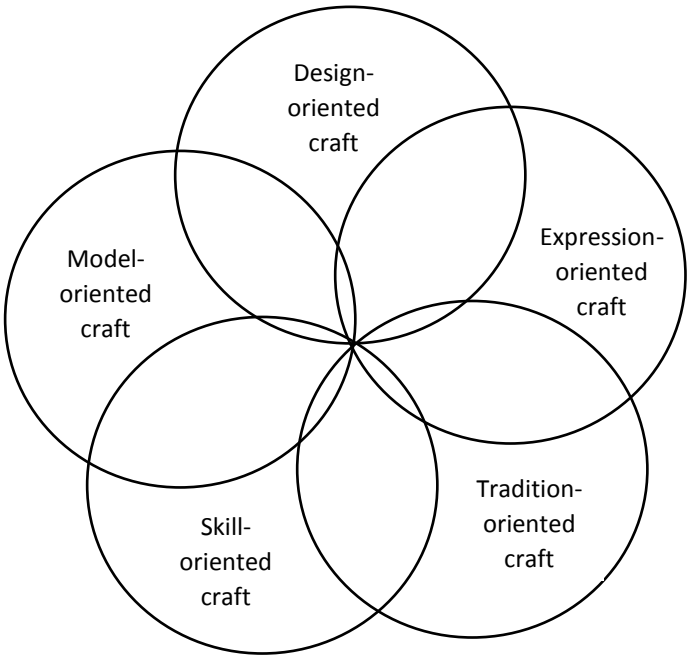

Figure 1: The interrelated orientations in craft education.

As a whole, orientations complement diverse aims of craft education. Model-oriented craft can teach students that making something has logical steps, and the materials and techniques imply certain rules. Skill-oriented craft can teach especially about skill acquisition, developing skills and skilled craftsmanship. Design-oriented craft involves you in the designing of the product through the problem-solving process. Expression-oriented craft gives you the tools to express yourself through making something. Tradition-oriented craft concentrates on making you familiar with your cultural heritage and traditions, and recreates them.

The criticism can be made that the orientation categories do not take account of the hybrid orientation where orientations are mixed. For example, a student can choose to start a craft process from a ready-made model but starts making her own designing during the process so that the craft process changes towards a holistic process. In this study, this aspect was taken into account so that student teachers had a possibility to write their own descriptions about craft.

Research Problem and Method

The aim of this study was to recognize student teachers' views of craft and craft education. Views of craft and craft education are studied through diverse craft orientations which are connected to views of the necessity for craft education. It is important for teacher educators to recognize these perceptions in order to help student teachers incorporate pedagogical theories and best practices into their belief systems.

The study was guided by two research questions:

1. Which craft orientations are familiar to student teachers?
2. What kind of conceptions do student teachers have of the necessity of craft at school?

An on-line questionnaire was distributed to all classroom student teachers who enrolled on the course entitled "Basics and pedagogy of textile craft". The course was for 3 credits. Students also had another 3 credit course entitled "Basics and pedagogy of technical work." These craft courses were obligatory courses as part of their multidisciplinary studies. 113 responded in time and gave permission to use their responses as data.

The questionnaire included structured statements and open questions. The questionnaire gave both quantitative and qualitative data. The mixed methods approach was chosen because with mixed methods research it is possible to get a better understanding of the research problems than with either quantitative or qualitative research alone (Creswell & Plano Clark, 2011).

Structured statements included ready descriptions of diverse orientations based on the previous research. Students were asked to choose the most familiar descriptions (1–3) practicing crafts in one's free time and at school. The data was analysed quantitatively. Students also had an opportunity to comment on their answers and give their own description of practising craft in their free time or at school.

The open question was about the necessity of craft education at school. Students were asked to explain "why craft is needed or not needed at school". The classified categories were derived from the data analysed and generated partially inductively, merging data- and theory-driven angles of reasoning. After the qualitative analysis, the quantitative frequency distribution was performed.

All students were asked to answer the questionnaire at the beginning of the course, but the students had a choice whether or not to give permission to use their answers as research data. All students were asked to answer the questionnaire because it had a pedagogic purpose to encourage students to reflect on their beliefs about craft education.

Participants

99 female and 14 male students answered an e-form questionnaire and gave permission to use their answers as research data. Five students did not give a permission to use their answers as data. About 50 % (n=56) were class-teacher students and about 13 % (n=15) were studying on the programme for class and math teachers. There were also special education teachers (24 %, n = 10) and subject teachers who study classroom teaching as a minor subject (8 %, n = 6). All these students can after graduation teach craft in primary school. Students were second-year students, but the subject teacher students were third or fourth year students.

Participants were asked whether they have studied more textile or technical or the same amount. The majority had studied more textile craft. Only 10 students (8.8 %) had studied the same amount of textile and technical craft. In the future, the figures should be quite different, because pupils cannot choose any longer between textile and technical work, but craft teaching is equal in content for all pupils during their basic education.

Participants were also asked how much they practise craft in their free time. Most of students answered that they rarely practise craft (41.6 %, n=47) or sometimes (31,9 %, n=36). 12.4 % (n=14) of students answered that they never practise craft in their free time while 11.5 % (n=13) of students often practise craft. Three students (2.7 %) answered that they practise craft nearly every day.

Results

Student teachers' perceptions of craft orientations

Students were asked to choose the most familiar descriptions (1–3) to practise crafts in free time and at school. They were given ready descriptions of orientations. The orientations are described in the chapter entitled "Diverse orientations in craft education". Students also had an opportunity to comment on their answers about practising craft in their free time or at school.

The results revealed that most of students saw both school craft and free-time craft as model-oriented craft (see Table 1). Some students also wrote free comments about model-oriented craft where they accentuated that model-oriented craft was really the most typical or even the only way of practicing crafts at school. Here is one example of the comments: "*Model-oriented craft was the most typical way of practising crafts at school. I didn't like it, but I had to work like that because I was not given any other choices.*" (No. 12, subject student teacher, seldom practises crafts), while another student wrote that *"My experience is only of model-oriented craft, but I think that's not a bad thing, because you can learn basic skills by imitating a model and then later you can apply these and create."* (No. 38, special education student teacher, seldom practises crafts.). One student commented that "*The model-oriented craft is probably the simplest and easiest way of practising crafts, and that's why I use it."*

The model-oriented craft is a traditional and easy method both for a teacher and a pupil who has not much previous craft experience. If you follow instructions carefully, you will create almost the same product as was described in the instructions. This kind of making can be pleasing if a product is somehow appealing and meaningful to the maker.

Skill-oriented craft was also a popular choice in students' answers connected to school craft but not so popular in free time (see Table 1). Students did not comment on skill-oriented craft much. One student emphasized the rewarding aspect of learning skills. Skill learning and developing skills is a built-in way of working at school, and hence it is understandable that skill-oriented craft is especially popular at school. Deepening skills or craftsmanship means studying a substance-specific skill in depth and

desiring to become better and better in a specific skill form. Results give a clue that this kind of skill development is not very popular in free time among student teachers.

Surprisingly, design-oriented craft was a rather familiar way of practising crafts in free time for many students (52.2 %) but not at school (16.8 %). Craft in free time may be connected to a need to acquire a pleasing and useful product for an intended use or context where design-oriented craft can be an inherent way of working. Apparently, at school many pupils do not get experience in designing for their own purposes. Two students commented that design-oriented craft was used primarily on voluntary courses at secondary school.

Expression-oriented craft was not familiar to students either from schools or from free time. Expression-oriented craft can be seen in writings which deal with the well-being of craft (see Pöllänen 2013), so it was rather surprising that just a few students mention expression-oriented craft as familiar. Comments connected to expression-oriented craft in free time were the following: "*I'm a very practical person, not so expressive*" (No. 21, subject student teacher, often practises crafts). "*Craft supplies are expensive. I want to make very safe choices so that a product and materials do not remain unused*" (No. 22, special education student teacher, sometimes practises crafts). Maybe craft teachers have thought that expression-oriented craft is a more suitable method for free time craft than in a school context, with the consequence that pupils do not learn to see diverse possibilities to approaching craft making.

Tradition-oriented craft was also rather strange to students both in their free time and at school. Nor did students provide any comments about tradition-orientation. Tradition-oriented craft is connected to an interest in your own cultural heritage. While researching personally significant craft traditions and renewing traditions, you have an opportunity to build your cultural identity. If parents are very busy and grandparents live far away, it is apparent that people do not have time to practise crafts together and transmit the cultural heritage.

Table 1. Craft orientations in free time and at school.

Orientation	In free time	At school
Model-based craft	65.5 % (74/113)	89.4 % (101/113)
Skill-oriented craft	16.8 % (19/113)	48.7 % (55/113)
Design-oriented craft	52.2 % (59/113)	19.5 % (22/113)
Expression-oriented craft	14.2 % (16/113)	2.7 % (3/113)
Tradition-oriented craft	1.8 % (2/113)	6.2 % (7/113)
Other, your own description	2.7 % (3/113)	0 %

Students had also an opportunity to write their own descriptions for craft. Only three students used the opportunity to write their own description of free time craft. There were no own descriptions in a school context. Own descriptions for free time craft were the following: *"It's hard to get the first idea. I take ideas from here and there and then I look for instructions."* (No. 36, classroom student teacher)*; "It's mixture of model-orientation, skill-orientation and design-orientation"* (No. 20, special education student teacher); *"I choose a familiar technique, and then I apply it to something new"* (No.

68, special education student teacher). The last statement could be interpreted as skill-orientation where a specific skill or skill learning inspires to create something new. The first two descriptions are examples of hybrid orientations.

Some of the students, who do not practise crafts in their free time, commented that it was difficult to choose a familiar orientation but they have chosen one on the basis of which orientation would be possible or thinkable if they were to practise crafts.

It is also interesting to see how many orientations students mention as being familiar (see Table 2). About half of the students mention only one orientation both in their free time and school contexts. Over 30 % mention two orientations. Only about 10 % mention three orientations. It seems that most of students are familiar only with one or two orientations, and only few students are diverse-oriented. The result could be interpreted that craft education has not promoted the comprehension of diverse orientations.

Table 2. Frequency of the familiar orientations

	In free time	At school
Only one familiar orientation	56.6 % (64)	48.5 % (55)
Two familiar orientations	34.5 % (39)	39.0 % (44)
Three familiar orientations	8.8 % (10)	12.4 % (14)

Student teachers' conceptions of the necessity of school craft

Students were also asked why craft is needed or not needed at school. Students were very positive. Only one student answered that a current type craft education is not needed and the other student answered that he had no opinion. The majority of students answered that craft is needed at school, and gave several explanations. Explanations were analysed, and answers were categorized into eight categories (Table 3).

Table 3. Student teachers' conceptions of necessity of school craft

Category	Example or definition	% (n)
Skill-oriented	You learn useful everyday skills (e.g. mending) and fine motor skills.	40.7 (46)
Creativity and skill-oriented	You get an opportunity for creativity and self-expression, but you also learn useful skills.	16.8 (19)
Diversity-oriented	At least three aspects was mentioned: e.g. cultural, social, skill, expression, design, ecological, neurological or well-being	17.7 (20)
Culturally oriented	Craft is our cultural heritage. You learn craft traditions. You learn respect for craft skills.	10.6 (12)
Counterbalance or amusement	Craft is a good counterbalance for theoretical subjects or technology. Craft is fun tinkering.	6.2 (7)

orientation		
Hands-on orientation	You learn a hands-on attitude, active participation.	2.7 (3)
Possibility orientation	School has to offer opportunities to try diverse things. Craft lessons may offer an idea about a hobby or even a profession to someone.	2.7 (3)
Not needed or no opinion	*"A current type craft education is not needed."* *"I don't have an opinion about this thing."*	1.8 (2)
Total		100 (113)

The key findings of the categories are presented with some quotations from individual student teachers. Over all, the most significant reason for including craft activity in school, according to 40.7 %, was that it gives pupils useful everyday skills and fine motor skills. When students mentioned everyday skills, they mentioned, for example, mending clothes. Before industrialization, craft teaching was valued that people were able to prepare tools and artefacts needed in daily life, and after industrialization craft teaching was rooted in learning the skills believed necessary for the success of a nation state. (Pöllänen & Kröger 2000). Today, valuing traditional everyday skills may exemplify a current phenomenon called 'homing', translated into Finnish as 'kotoilu'. Basically, homing is about enjoying life at home, doing and making things yourself. Homing can offer a tool to handle the demands of the wasting and throwaway culture (Pöllänen 2013).

16.8 % explained that educational craft provides an opportunity for creativity and self-expression. These things were usually mentioned together with skill learning. An example of this was given by one student who stated, "*School craft is needed for learning self-expression. In addition you learn useful skills, for example repairing clothes and other stuff.*" (No. 12, subject teacher student, seldom practices crafts.)

Diversity oriented (17.7 %) were wide-ranging answers which included several aspects of school craft. An example of this was given by one student who stated, "*It's important to learn to design and make something by yourself. Craft develops your motor skills and creativity. A social aspect is also connected to crafts although making is independent. School craft is also connected to cultural learning*" (No. 83, subject teacher student, sometimes practices crafts.)

Culturally oriented explanations (10.6 %) were usually connected to Finnish cultural heritage, together with craft skills. As one student interpreted, "*Craft develops motor skills. You also create your cultural identity with help of crafts.*" (No. 29, special education student teacher, often practices crafts.)

There were also a small group of answers (6.2 %) which emphasized that craft is a good counterbalance for theoretical subjects or technology. This category also included a couple of answers that craft was "*fun tinkering*".

Hands-on explanations (2.7 %) emphasized active participation. One student explained, "*Craft is an important skill because nowadays machines make nearly everything and children do not get experience of their abilities to make something from start to finish.*" (No. 30, classroom teacher student, sometimes practices crafts.)

Possibility explanations (2.7 %) emphasized that craft is a possibility among others. One respondent explained that "*School has to offer possibilities to try different things so that pupils can plan their future after school*". (No. 96, classroom teacher student, never practices crafts.)

Discussion and conclusions

This study aimed to explore student teachers' conceptions and perceptions of craft orientations and the necessity of craft at school. The findings indicate that student teachers have a positive attitude to school crafts. Students think that school craft is needed, but their perceptions and conceptions are rather narrow: model- and skill-oriented, especially in the school context. The results give a clue that craft education does not provide diversified learning experiences, and it is still very model- and skill-oriented, although the curriculum encourages holistic craft and is flexible as regards diverse orientations.

Some of these results corroborate similar findings in previous studies by Karppinen (2013) who found that the majority (more than two thirds) of the students have a positive image of craft making and see themselves as conventional craft makers (making-orientated). Karppinen (2013) has labelled three sections based on Hannah Arendt's concepts of the human condition (*labour, work* and *action*) to describe students' varied emotions, feelings and experiences as regards crafts: *credit-orientated, making-orientated* and *interaction-orientated activity*. Making-oriented students more or less enjoy making things by hand, trust their skills in crafts, and have the personal intention and energy to engage in craft-making (Karppinen, 2013).

Seitamaa-Hakkarainen (2010, 72) has highlighted the value of design activity and design-based pedagogy by emphasizing the importance of learning by collaborative design (LCD). The fact that collaborative design was not emphasised in this research may be a roadblock for fostering active participation and collaboration in schools. Also, the conceptions of craft education as model-oriented and learners viewed as implicitly passive, may be an obstacle for creative collaboration in schools.

The new national curriculum (FNBE, 2014) emphasizes holistic craft, among others design- and expression-oriented crafts. However, student teachers' responses suggest that their capacity to implement the curriculum will be enhanced. Accordingly, students need to acknowledge their prior experiences, and they need support how to implement ideas of diverse orientations at school.

A question of practice is how to offer meaningful opportunities for students to deconstruct their experiences, and how to enrich students' orientations toward more design- and expression-oriented activities at school. One strategy is to raise students' awareness of the limitations of model-oriented craft education, and to increase students' interest in other orientations which support the holistic craft process.

Orientation articulations such as these in this article can induce student teachers to reflect and assess their own conceptions against the concepts that structure the new curriculum. A key aspect of this exercise would be to begin with students' everyday (craft) experiences, and then introduce the key concepts underpinning the new curriculum (expression- and design-oriented craft) as lenses to make sense of their experiences.

In order to stimulate students' intrinsic motivation, we need to show them the relevance of design- and expression-oriented craft; stressing that learning design and expression is valuable, meaningful and useful for students, themselves. One way is to use real-life examples and relating learning materials to everyday applications, drawing cases from current newsworthy design issues, giving local examples and relating theoretical and conceptual knowledge to practice. There are many interesting research based projects concerning design-oriented craft education (see e.g. Kangas, 2014; Kangas, Seitamaa-

Hakkarainen & Hakkarainen, 2013) and expression-oriented craft education (see e.g. Rönkkö & Aerila, 2015) which can be used as examples.

Students also need more diversified learning experiences in craft. One strategy is to engage student teachers in reform-oriented instructional projects. Practical projects could help students see the benefit of using the "big ideas" of design- and expression-oriented craft to extend their understanding of craft education and become aware of the constraints of their own conceptions. Instructional projects need time, so the practical problem is the lack of time. One solution is a theme-based education that is being launched in the new curriculums both at school and university. Design issues and artistic standpoints can work well as a frame for theme-based education, i.e. issues that bring together different subjects within a craft context.

In conclusion, student teachers' beliefs tend not to change much from the their time at school. There will be no quick fix in improving craft education in schools; a number of strategies will be required to help develop broader and deeper understanding of craft education and an appreciation of the diverse orientations in which a design and expression perspectives have important roles. Therefore, teacher educators need to understand the perceptions and belief structures of teacher candidates in order to improve professional preparation and teaching practices. Articulating and examining their perceptions may contribute to a better understanding of how they view teaching as well, as the skills they need to acquire in order to become competent educators. If students do not examine their perceptions, they will not be open to current research-based practices.

In order to promote student teachers' beliefs and practices to change, the findings of this study are seen as helping to understand student teachers' views – how they comprehend craft and craft education. The implications of this research are that teacher education programmes should consider courses and projects that will help student teachers to reconstruct and modify their preconceived perceptions and conceptions about craft education, in the hope that it will promote professional growth.

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Tarja Kröger is Senior Lecturer of Craft Education at the University of Joensuu. Her background includes PhD in education. Her research interests focus on diverse orientations, interculturalism and virtuality in craft education.