

# Finnish craft education in turbulence

## Conflicting debates on the current National Core Curriculum

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*In this article, we investigated how craft curriculum enacted in 2016 was reflected in the current discussions of the stakeholders, that is, the craft teachers, the craft student teachers, the craft teacher educators, and the government employees. In the curriculum, textile craft and technical craft, previously perceived mainly as separate entities, were conjoined as an approach in which “multiple materials are used, and activities are based on craft expression, design, and technology” (FNBE, 2014). This caused confusion in the field about the goals and arrangements of craft education. The data consisted of craft teachers’ professional magazines, curriculum blog, and written statements. The discussions concerning the undertaking of the new craft curriculum were analysed by document analysis. Three emerging themes were found to be central in the debates: lesson hour distribution, multi-materiality, and technology education. The analysis revealed that there was a shared understanding about the lesson hour distribution not being enough to enable the proper fulfilment of the craft curriculum. Conflicting views were expressed about the implementation of multi-materiality and technology education. In general, many textile craft stakeholders were open to adapt a more multi-material approach, seeing it as bringing new opportunities to craft education. Many technical craft stakeholders believed that multi-materiality is an artificially-constructed concept, and they saw technology education as already being an essential part of technical craft teaching. Consequently, the curriculum reform has caused turbulence that is dividing the craft stakeholders and especially the craft teachers.*

Keywords: craft education, sloyd, technology education, multi-materiality, curriculum reform, education in Finland

### Introduction

The current craft curriculum in the Finnish National Core Curriculum for Basic Education, initiated in 2014 and enacted from 2016, has formulated crafting as “an exploratory, inventive, and experimental activity in which different visual, material and technical solutions as well as production methods are used creatively” (FNBE, 2014, 462). Also, in wider discussions, the concept of craft has turned out to be multifaceted. In addition to the handmade artefacts, crafts refer to the processes of making, and many socio-cultural and historical aspects connected to them (Peach, 2013; Risatti, 2007). In the Finnish context, craft has a broad meaning, not making a distinction between artistic, crafting and technological approaches: it integrates the process of making, the product that is going to be made during the process of crafting, and the embodied craft know-how of the making of the product (Ihatsu, 2002). Also, the sloyd concept is used for school crafts especially in the Swedish-speaking communities in Finland. All in all, defining crafts is challenging since definitions often risk including and excluding important elements (Niedderer & Townsend, 2010).

The recent curriculum reform in Finland has brought revolutionary changes to craft education (e.g., Pöllänen & Urdziņa-Deruma, 2017; Pöllänen, 2019). The lack of practical advice for the management of the subject has induced teachers to envisage the new curriculum as indefinite and somehow evasive.

Confusion has occurred both in terms of the organization of the “new” subject that brings together the practices of textile and technical crafts, and the means and methods of craft education. Especially the new concept, *multi-materiality*, as well as the concept *technology education*, have been regarded problematic. Moreover, the changes in the distribution of the lesson hours have fuelled the confusion.

The purpose of this article was to analyse the current debates concerning the changes in Finnish craft education by investigating how the new craft curriculum was reflected in the discussions among the stakeholders, that is, the craft teachers, the craft student teachers, the teacher educators, and the government employees. As professionals working in craft teacher education in Finland, we were interested in finding out *What reflections has the craft curriculum caused among the stakeholders?* This question was looked at in the writings in professional magazines, the interactive blog that was used in the curriculum development process, and the statements written about the state of craft subject.

### **Craft education as a developing subject**

In 2014, the Finnish National Board of Education launched a new core curriculum (FNBE, 2014) aiming to develop learning and teaching at Finnish comprehensive schools to meet the requirements of the future. It has come into force gradually, starting with the primary level grades 1–6 (7 to 12-year-old pupils) in 2016, and continuing at the secondary level with grade seven (13-year-old pupils) in 2017, grade eight in 2018, and finally grade nine in 2019. The national core curriculum consists of many chapters discussing the values, learning environments and pedagogical approaches, as well as the goals and contents of each subject in each grade. In this vein, the current National Core Curriculum builds on developing inclusive and integrative school culture by promoting an understanding of the relationship and interdependencies between different learning contents and subject areas. Also, the curriculum follows both the curriculum tradition, with emphasis on learning, and the didactic tradition, which is more discipline-based. Following the global trends about enforcing and incorporating the 21st century skills and competencies in education, the role of transversal competencies as part of each school subject is made explicit in the Finnish curriculum (see Eronen, Kokko & Sormunen, 2019).

The background of current curriculum reform relies on the changes in education in the 1970s, which shifted the focus of craft education to creative thinking and emphasized the importance of the crafting process as a creative and exploratory activity (Marjanen, 2012). The aims of education started to shift gradually from craft product to the process of crafting (Marjanen, Lindfors & Ketola, 2018). Also, the fundamental gender orientation from girls’ and boys’ craft contents disappeared in the changes of the 1970s, and the name of the school subject was changed to ‘textile work’ and ‘technical work’ from earlier ‘girls’ handicraft’ and ‘boys’ handicraft’ (e.g., Marjanen, 2012; Marjanen & Metsärinne, 2019). However, deep-rooted gender biases continued, by teaching crafts in two separate content areas (e.g., Kokko, 2012; Jaatinen & Lindfors, 2016), between which the pupils were required to choose. This long-lived practice of choosing a field of craft studies formed the basis for gender-based teaching of the subject since almost all the boys chose technical work and most of the girls chose textile work (Kokko, 2012; Tilastokeskus 1975–1981). Since the Basic Education Act enacted in 1998, crafts have formally been taught as a common subject to all pupils. However, the arrangements have differed from school to school: sometimes all the pupils studied all forms of crafts equally, but often the schools continued the traditional practices in which the pupils needed to choose between technical and textile work.

Since the earlier curriculum reform in 2004, the underlying aim of craft education has been to instil pupils with the knowledge to manage the holistic craft process, from the ideation and design to the

making (see Pöllänen, 2009), and nurturing their capabilities to assess their own learning processes. Sustainable development, multiculturalism, welfare promotion, identity work, and civic education have also been addressed in terms of the general educational goals, along with the potential of craft education for supporting ecological, ethical, aesthetic, and economic awareness (Marjanen & Metsärinne, 2019). In addition, the present targets of craft education include strengthening the cultural and technological competence and creativity. By participating in craft processes, the pupils learn to pay attention to the meanings of problem solving, strategic planning, interaction with tools and materials, patience, perseverance, independence, and responsibility for the environment.

From an international point of view, crafts as a separate and compulsory school subject is a unique phenomenon. In the Nordic countries, equivalent subjects to Finnish crafts (*käsityö*) are *sloyd* (*slöjd*) in Sweden, art and craft (*kunst og håndverk*) in Norway and Iceland, and craft and design (*håndværk og design*) in Denmark (Johansson, 2018). Crafts also has similarities with Icelandic innovation education (Gunnarsdóttir, 2013), as both underline creative ideation and problem-solving through material experimentation. In most countries, ‘crafts’ has been left out from the curriculum, or merged to something else, such as design and technology education or technology and engineering education (e.g. Lepistö & Lindfors, 2015; Porko-Hudd, Pöllänen & Lindfors, 2018), or merged with other subjects, such as home economics.

## **Data and analysis**

We based our analysis on a range of data, which are presented in Table 1. The purpose was to analyse what reflections the craft curriculum had caused among the stakeholders (the craft teachers, the craft student teachers, the teacher educators, and the government employees). When the new national core curriculum for basic education in Finland was in the process of being developed, the National Board of Education provided an interactive blog (Table 1, data 1) for anyone interested in following and commenting the plans. Published in March 2014, the blog started with a text that presented ideas about the impending craft curriculum (Järnefelt & Matinlauri, 2014). Most comments about the text were written during 2014, and only a few were written later in 2015–2017. There were altogether 65 blog comments written by 68 commentators, mainly craft teachers working in basic education. Some commentators commented several times, and some comments were signed by several authors. There were altogether 10 comments by textile craft teachers, 15 by technical craft teachers. In addition, there were comments (13) written by craft student teachers, and other stakeholders (2 comments from teacher educators, 4 from government representatives, 2 from parents, and 25 anonymous comments). The last comment was dated in August 2017. The blog was accessible until July 2019, when the website was closed. The blog texts were analysed and archived by the researchers for the purposes of this research in spring 2019, before the closing of the website.

When looking at the reflections on the new craft curriculum, we were especially interested in the views of craft teachers and their organizations. In Finland, each of the Associations of Technology Teachers and Textile Craft Teachers have been publishing a professional magazine for over 50 years, called *Tekninen opettaja* (Technical teacher) and *Tekstiiliopettaja* (Textile teacher). Each association has about one thousand members; most of them are craft teachers in basic education but there are members from other levels of education and craft student teachers. These professional magazines are also sent to other stakeholders, such as the National Board of Education, and to public organizations, such as libraries and universities. The purpose of the publications is to inform the readers about the current trends and cutting-edge topics of craft education, especially from the viewpoint of either technical or textile craft education. As the articles are mainly written by the craft teachers, the views shared in these magazines are important

thought leaders in the field, thus, forming the main data set of the present study. Both publications are published four times a year. They consist of about 30–40 pages per issue, including professional articles, book reviews, announcements, and some advertisements. For the purposes of this study, all the numbers from the year the new curriculum was launched (2014) until today (2019) were analysed, concentrating only on texts focusing on the research themes (Table 1, data 2-3). The articles were mainly written by textile and technical craft teachers in their respective professional magazines. Few articles were written by craft students teachers or teacher educators.

The debate about the new craft curriculum has led to the publication of some pamphlets and statements. This was started by two technical craft teachers, who wrote a pamphlet (Table 1, data 4) about their concern over the declining status of technical craft education and approached numerous decision-makers and trade unions with their statement (data 5). The pamphlet was even brought to the attention of the parliament in February 2019, when representative Olavi Ala-Nissilä presented a written question (data 6) about the state of technical crafts to the Finnish Parliament. The Minister of Education Sanni Grahn-Laasonen replied to this question (data 7). Since the statement and the following written question both referred to and concerned textile craft education, the Association of Textile Craft Teachers wrote their own response (data 8). Later, four textile-based entrepreneurs also presented their response to the written question (data 9): the response was first published on Facebook and later posted by *Suomen Yrittäjänaiset* (the Finnish association for women entrepreneurs) and the *Taito Group Finland* (Association for craft entrepreneurs). Relatedly, 19 craft educators and researchers released a statement of the development of craft education in basic education and general upper secondary school (data 10). All these documents were included in the analysis.

The debate was also featured elsewhere, such as in a Finnish newspaper *Turun Sanomat* and a magazine *Suomen Kuvalehti*, which were left out of the analysis. In addition, the discussion on the implementation and the problems of the new craft curriculum have taken place in the professional email lists and the closed Facebook group for craft educators and other stakeholders. These discussions were left out of the analysis due to the closed nature of the groups. However, the researchers were following these platforms closely which gave them a broader understanding of the voices in the field.

Table 1. The data and the sources of the analysis.

Data code	The source of the analysis	Data	Abbreviation in the analysis
(1)	Curriculum blog (OPS-blogi 2016), craft National Board of Education	Blog comments 2014-2017 Total number of comments: 65 Total number of commentators:68	(Blog, date)
(2)	Textile teacher magazine (Tekstiiliopettaja)	Issues 1/2014-3/2019 Total number of issues: 23 Total number of analysed articles: 75 (2-19 articles / year)	(TS, issue, page)
(3)	Technical teacher magazine ( <i>Tekninen opettaja</i> )	Issues 1/2014-3/2019 Total number of issues: 23 Total number of analysed articles: 73 (2-10 articles / year)	(TN, issue, page)

(4)	Pamphlet, Ojanen and Rastas / Technical Craft Teachers	12.6.2018 15 pages	(Ojanen and Rastas, 2018)
(5)	Responses to the pamphlet: <ul style="list-style-type: none"> <li>• <i>Akava</i> [Confederation of Unions for Professional and Managerial Staff in Finland]</li> <li>• <i>Elinkeinoelämän keskusliitto</i> [Confederation of Finnish Industries]</li> <li>• <i>Suomen Yrittäjät</i> [Organization for Small and Medium-sized Enterprises in Finland]</li> </ul>	7.9.2018  Not dated  Not dated	(Akava, 2018)  (EK, n.d.)  (SY, n.d.)
(6)	Written question KK 675/2018, Member of Parliament, Olavi Ala-Nissilä	27.2.2019 2 pages	(KK 675/2018)
(7)	Reply to the written question KKV 675/2018, The Minister of Education, Sanni Grahn-Laasonen	21.3.2019 2 pages	(KKV 675/2018)
(8)	Reply to the written question KKV 675/2018, Textile Craft Teacher Association	Not dated 3 pages	(KKV 675/2018/TOL)
(9)	Response of four textile craft entrepreneurs	11.3.2019	(Huhtaniemi et.al., 2019)
(10)	Statement of the development of craft education in basic education and general upper secondary school, initiated by craft teacher associations and signed by various stakeholders	9.2.2019	(Statement, 2019)

A qualitative, data-driven approach was used for analysing the data. The purpose was to find out the topics of discussion and reflection with an open minded approach. Through intensive reading of the research data, three topics emerged as the most critical and formed the basis of the analysis: the lesson hour distribution, the concept of multi-materiality, and the concept of technology education. When looking at what kinds of elements were raised in the discussions concerning these three topics, the document analysis was the approach utilized (Bowen, 2009; Jupp & Norris, 1993). This method is close to discourse analysis but is concerned with the actual contents of the researched documents, rather than revealing the way of writing and talking (Jupp & Norris, 1993). Often educational researchers use policy documents and textbooks as primary sources of qualitative text analysis. Rapley and Jenkins (2010, 384) comment that “documents in any broader sense – be they blogs, diaries, magazines, newspapers, or websites – are underused and under-analysed”. According to Elliot, Fairweather, Olsen, and Pampaka (2016), document analysis refers to a “comparative analysis of a range of related texts by extracting relevant information from each and grouping it into categories of related information”.

All the three researchers reviewed the documents, physically highlighting all the comments and texts referring to the three topics. The highlighted text was categorized under the main topics. Each researcher was responsible for a thorough investigation of one of the topics, analysing all the data against it. The main topics were each further divided into three sub-themes which emerged from the data. After that, the other two researchers cross checked the data for the reliability of the initial analysis. Only some minor changes were made in defining the subcategories. These categories are presented in Table 2 and form the basis for presenting the results.

Table 2. Categories of the analysis.

<i>Main category</i>	<i>Subcategories</i>
Lesson hour distribution	Concerns about covering the targets of the curriculum within the time frame
	Concern about craft teacher's profession dying out
Multi-materiality	Concern about concept: Multi-materiality is artificially constrained
	Concern about content matters: Multi-materiality causing crafts to lose its distinct nature
	Concerns about equity of education: Multi-materiality causing the disparity of skills
Technology education	Concerns and confrontations about technology education, technical craft, and textile craft
	Concern about the position of technical craft: A new subject as a solution?
	Concerns about tapping the transdisciplinary and innovative aspects of technology education

According to Elliot et al. (2016), it is essential for the researcher to consider how the documents relate to each other and to reflect on the context in which they were produced. There was a clear connection between the newsletters, the pamphlet, the written question and the replies to it; they all address the three themes that were the focus of this research. Bowen (2009, 33) advises researchers to consider the original purpose of the document and the target audience. It is clear that the professional magazines were targeted at technical and textile craft teachers respectively, to keep them updated about the current developments and issues within craft education. The statements were meant for the politicians and decision makers, to impact their decision making. The blog comments represented a wide range of craft teachers in the field and was open for everyone interested. It is noticeable that these comments could be made anonymously, although many chose to use their own name. In addition to teachers, some parents and other stakeholders wrote comments showing that the blog reached a wide audience.

In what follows, the emerging themes are discussed with the guidelines of the curriculum and related research literature. Exemplary citations are given from the final data analysis, using the abbreviations presented in Table 1. Since the purpose was to highlight the reflections at a general level, the citations are anonymous.

## **Results**

### **Concerns related to the distribution of lesson hours**

The main worry among craft teachers has concerned the latest distribution of lesson hours. The overall number of compulsory lesson hours for crafts in grades 1–9 remained the same, that is 11 weekly lesson hours (45 min) shared by all the grades (see Table 3). However, earlier the emphasis of lesson hours was on the upper grades 5–7 whereas the new lesson distribution changed the emphasis to the lower grades.

Table 3. The lesson hour distribution for Crafts in Finnish National Core Curriculum for Basic Education (FNBE, 2014).

<i>Distribution of compulsory craft lesson hours per week at different grades</i>				
Grades	1–2	3–6	7–9	total
The number of weekly lesson hours	4	5	2	11
Artistic and practical subject electives to be shared between music, visual art, craft, physical education, home economics				
Grades	1–6		7–9	total
The number of weekly lesson hours of artistic and practical subject electives	6		6	11
All electives (including artistic and practical subjects, academic subjects, transdisciplinary courses, any courses the school wants to offer as a general elective)				
Grades	1–9			total
The number of weekly lesson hours for all electives	9			9

The lesson hour distribution was adopted in 2012 (Valtioneuvoston asetus 422/2012). The total number of elective lesson hours dropped from 13 to 9, and there are signs that there is a decline in choosing crafts as an elective (Hilmola & Kallio, 2019). Crafts were given in 11 compulsory weekly lesson hours for grades 1–9: grades 1–2 were given four lesson hours, grades 3–6 got five in total, and grades 7–9 got only two of them (Table 3). In addition, the schools decide how to use the additional elective lesson hours dedicated to artistic and practical subjects and thus, crafts may get more than the minimum lesson hours. The pupils can also choose crafts as an elective subject in grades 8–9.

The new situation with only two compulsory lesson hours for crafts in grades 7–9 together with the new targets and arrangements of craft education—have caused a lot of concern among the craft teachers. Earlier, the pupils often concentrated on either textile or technical crafts for three hours respectively in grade 7, but now they share the two lesson hours between these two entities. These concerns are looked at in the following section.

### ***Concern about meeting the targets of the curriculum within the time frame***

The lesson hour distribution was reflected in the craft teachers' professional magazines (data 1, data 2, see Table 1). In the magazines, the teachers commented on their efforts to get as good a share of lesson hours as possible. To their disappointment, this had often failed and resulted in the minimum number of compulsory craft lesson hours. The targets of the curriculum were seen as being good as such, but with a too high-level to be achieved within the given time frame.

In my own municipality, only the compulsory two lesson hours are dedicated to the seventh-grade crafts. We did our best to get three lesson hours but failed. The first thought I had was the feeling of insufficiency. How can I offer the pupils a comprehensive sample of the contents so that everyone could get something. Now that the first year is over I still feel that it is impossible for me to go through all that I and the pupils find essential. (TN, 2/2018, 16)

Many teachers commented on the new situation that has increased the feeling of haste. They were worried about the diminished number of artefacts that the pupils are able to produce within the time limits. In addition, there was a general worry about the declining level of skill acquisition. (TS, 4/2018, 20.)

A practical worry concerned the difficulty of pupil assessment in the seventh grade; within such a short time, the teachers might not get to know the pupils properly and furthermore, the final assessment is made by the two teachers of the distinct entities of craft subject. *“If the pupil has poor motivation in the other entity it will affect the final assessment of the subject on the whole.”* (Blog, 17.3.2014)

In the craft curriculum blog, some pessimistic teachers predicted the situation as leading to the complete extinction of the craft subject from the basic education:

The targets of the new craft curriculum are easy to agree on, but the lesson hour distribution does not support their implementation, not to talk about the possibility to demonstrate the special strengths of technical craft and textile craft in the education. The direction looks horrifyingly clear: after a couple of decades there is no craft teaching any more at the basic education. (Blog, 15.3.2014)

The problems caused by the new lesson hour distribution were raised in a pamphlet written by two technical craft teachers (Ojanen & Rastas, 2018, 14) in which they demanded at least one more compulsory lesson hour for technical craft in grade 7. In his written question, the representative of the parliament (KK 675/2018) was also concerned about the diminished number of lesson hours. The Minister of Education, in her reply (KKV 675/2018), directed teachers to use the options for elective artistic and practical subject lesson hours for crafts. She also reminded teachers of the opportunities to use general electives for arranging technical or textile craft specific courses.

However, since the municipalities and schools have shared the elective artistic and practical subject lesson hours in a range of ways, the craft teachers have expressed their concern about fulfilling the principle of the equality (TN, 2/2015, 5); in some parts of Finland, the pupils have more opportunities for craft education than in others.

### ***Concern about craft teacher’s profession dying out***

The new lesson hour distribution put more emphasis on craft education at the primary level (grades 1–6) in which the teacher is usually a generalist class teacher. Since the craft teacher in the secondary school (grades 7–9) is a qualified subject teacher, the lesson hour distribution has raised concerns about the future of the craft teacher’s profession. Obviously, there will not be enough craft lessons for a full subject teacher possession in most schools.

The new lesson hour distribution is the final nail in the technical craft teacher’s coffin. The required teaching duties will be met only at the very large secondary schools. (Blog, 12.3.2014)

There was a general concern about the declining choosing of crafts as an elective subject, which had earlier been important for meeting the required teaching duties of a teaching post. This fear was based on thinking that the pupils would not get enough background in the two lesson hours in the seventh grade to be motivated to continue their craft studies (TN, 1/2018). In fact, a recent study on this issue revealed that choosing crafts as an optional subject had declined 39% compared to the previous year (Hilmola & Kallio, 2019). However, the reasons for this need to be explored more deeply; the overall number of all elective subjects decreased from thirteen to nine (Table 3) giving the pupils fewer opportunities to choose any of them.

The teacher education arrangements have followed the curriculum changes. Now craft teacher education comprises the contents of a range of materials and techniques, which is a big change to the earlier focus



on mainly textiles or technical crafts. In their pamphlet, Ojanen and Rastas (2018, 14) saw this as a danger, especially from the viewpoint of technical craft teachers. They saw specialized technical craft teacher education as the only way to guarantee enough subject knowledge and knowledge of safety requirements. Nonetheless, the employment situation for craft teachers has always been challenging and the new curriculum has not improved it. At present, many schools are looking for a craft teacher with a broad competence in both textile and technical crafts. This obviously raises concerns about the diminishing need for craft teachers from the previous two per school to only one.

### **The substantial puzzle over multi-materiality**

In the National Core Curriculum (FNBE, 2014), multi-materiality is embedded in the use of different visual, material and technical solutions, and methods of production. Delineations of the diversity and difference are entwined in the descriptions, but little detail of materials and techniques is mentioned. Textile and technical work are mentioned as distinctive contents of learning only in the level of methods, with a notion that “techniques of both technical and textile crafts are employed” (FNBE, 2014, 464). According to this delineation, multi-materiality can be interpreted in favour of both textile and technical work.

### ***Concern about concept: Multi-materiality is artificially constrained***

The idea of multi-materiality was not disputed among the stakeholders *per se*; on the contrary, there was a tendency to argue that craft is a multi-material subject, and it has always been so.

Multi-materiality is emphasized in crafts. - - handicraft, and especially technical work, has always been multi-material. - - appropriate materials should be used according to the particular school conditions, if the product requires to be manufactured with multiple materials, or there is a need for a variety of materials. (TN, 4/2018, 12)

The stakeholders with a background in the field of technical craft emphasized that multi-materiality was especially based on technical crafts (e.g., Ojanen & Rastas, 2018). These debates tend to leave textile crafts deliberately unmentioned and nullified. Moreover, the debates seemed to campaign against multi-materiality as a purpose for learning (e.g., KK 675/2018). In this thinking, the notion of multi-materiality was repeatedly constructed “*misunderstood*” for the cause of the subject (Ojanen & Rastas, 2018), and even “*detrimental*” (TN, 3/2018, 8) and “*unfavoured for the development of equality*” (TN, 2/2019, 17). The same delineations asserted that technical crafting has always relied on the use of different materials and techniques in a versatile way, constructing handicraft as the making of objects, and using materials purposefully based on the requirements of the craft work. Despite strong argumentation, multi-materiality was discussed in the data only remotely in relation to technical crafts; the concept seemed to have been more widely adopted among the textile craft stakeholders.

Many textile craft stakeholders saw multi-materiality as a possibility for supporting broader inclusive learning targets and phenomenon-based learning at schools. Although the enactment of multi-materiality has raised also concerns and opposition, positive aspects related to wider learning goals prevailed in the discussions:

Through the projects combining various materials and methods, significant changes in pupils’ problem-solving skills have been witnessed. In addition, the loose assignment of the learning tasks that was made possible by the new curriculum has made easier to listen to the pupils and carry out student-centred projects. (TS, 2/2019, 8)

Looking at the history of craft education, there is nothing ideologically or pedagogically new in multi-materiality. In the early 1960s, multi-material creativity was addressed as a learning target in textile craft teacher training, in which there was a subject called hobby crafts (*askartelu*) which was

implemented in the making of multi-material artefacts suitable for school education (Salo-Mattila, 2019, 208). As a subject of study, multi-material hobby crafts were defined as “the production of functional and decorative craft items”, and applied “with the use of different materials, such as wood chips, rattan, clay, metal, cardboard, paper, fabric, yarn, and leather that were set to alter from year to year” (ibid.). Even then, multi-material crafts seem to have been construed as something new and inventive, and contrastive to the prevalent practices of the learning and teaching of traditional textile or technical crafts.

***Concern about content matters: Multi-materiality causing crafts to lose its distinct nature***

Today, multi-materiality is often embraced as a combination of different craft materials - with a concern that multi-materiality reduces crafting into a hobby-like activity, which would not be able to provide pupils with technical and technical thinking skills (e.g., Ojanen & Rastas, 2018). The concern about crafts losing their distinct nature and becoming only hobby crafts was a general topic of discussions among craft teachers. In the data, the concern became visible particularly with questions related to the future pedagogy and crafts implemented during the school lessons:

Will the teaching of craft techniques revert to what they were earlier [when more emphasis was placed on the technical skills than on the process of crafting], or will craft subject just consist of smaller, fast-paced hobby-like works? (Blog, 17.3.2014)

In some entries, the worry of pupils’ deteriorating skills—craft skills, motoric skills, and three-dimensional perception skills—was so severe that the fear of devastation of the holistic craft process became apparent. Some teachers even addressed concerns that multi-materiality could be considered a risk for the safety of pupils, since more emphasis needed to be placed on rehearsal of pupils’ basic skills (Blog, 17.3.2014), and less time could be spent on challenging projects (Blog, 11.3.2014). The conclusive opinion seemed to be that in order to tackle multi-materiality in a constructive way, more lesson hours would be need to be spent on the craft subject. Otherwise, enough time would not be left for the design process nor for developing pupils’ sense of creativity and problem-solving skills.

However, contradictory claims about the merging of materials and techniques in craft projects remained strong. In particular, the discussions of the textile craft stakeholders highlighted similar objectives behind multi-materiality today that had been introduced into craft education in the 1960s. The data provided insights on multi-materiality as a method for innovating solutions for real-life problems (TS, 4/2016, 27), fostering a sense of material understanding by the hybridization of different materials (TS, 2/2016, 9), and bringing together knowledge across the field of craft (TN, 1/2019, 16-17; TS, 2/2018, 16-17). At its best, multi-materiality was constructed as a concept based on the enactment of different resources of craft for the purposes of everyday practicality. In this light, it has the potential to equip pupils with readiness to overcome real-life challenges and develop their future competencies. At worst, multi-materiality was seen as detrimental for the future of craft subject, and almost impossible to implement in a way that could motivate pupils.

***Concerns about equity of education: Multi-materiality causing the disparity of skills***

In the blog main text (Järnefelt & Matinlauri, 2014), the expertise of diverse crafts was seen as a fundamental human right and a driving force for creativity in the society of the future. In some comments for the blog main text, rights for equal education were addressed as the impetus for the cause of a common craft subject, with claims that equity was only mentioned as a content cause in few subjects (Blog, 10.3.2014; also Akava, 2018). In addition, the promotion of equal rights for crafting was seen as a force to reduce gender segregation in the workforce (Blog, 16.4.2014), and as a way to facilitate shift from basic education to vocational training:

If a pupil shows enthusiasm for a technical job (whether a girl or a boy), the goal is of course to strengthen that enthusiasm so that it and the skills learned there can become part of the pupil's future - - many pupils from last year's technical study group went to vocational training to study metal and vehicle technology. (Blog, 4.4.2014)

Craft student teachers addressed the value of craft education in building the skills needed in the society of the future, and highlighted that pupils' creativity and equality could be "best promoted by providing pupils with a comprehensive range of education in handcraft" (Blog, 16.4.2014).

The decades-long strategic curricula development for the common craft subject was not approved of by all stakeholders. Commentaries about the contrived consolidation of craft's different content areas endured particularly in *Tekninen Opettaja*, where recent curriculum changes were considered to be "disadvantageous" (TN, 1/2019, 5), or even simply "bad" (TN, 2/2019, 17). Argumentation was based on the claims that both learning objectives and goals of education in technical craft and textile craft were utterly different, and that a common craft subject was not capable of providing accounts to be motivational enough for the pupils (TN, 3/2018, 8; also Ojanen & Rastas, 2018). To a certain degree, the industry and business stakeholders shared these concerns, in terms of the shortage of skills of the future labour force (EK, n.d.; SY, n.d.); these statements instinctively echoed a forcible interest of the commence.

Content wise, the gap between the two subject areas of crafts seemed to be comprehensive. Although the stakeholders representing the field of textile crafts were not unconditionally satisfied with the changes of the new curriculum either, also constructive commentaries were expressed in *Tekstiiliopettaja* (data 2). Therein, the debates revolved around more general goals for craft in comprehensive education, delineating that "the task of comprehensive school is, amongst other things, to give opportunities to build a foundation for broad knowledge base, and promote pupils to find their own strengths and build their own future through learning" (TS, 2/2019, 15). In this context, the debates related to craft's future as a common subject: "Since there's no turning back, in the future we will endure to have one common subject called crafts that covers the so-called soft materials and hard materials and related technologies in many dimensions, as well as design and traditional craft skills (TS, 1/2019, 17).

Unanticipated discussions about multi-materiality addressed the concerns about equity in education. In the blog comments, equity was spoken of in terms of equal access to the materials and skills to all pupils in comprehensive education (Blog, 10.3.2014), and with the aim of educating pupils for the needs of future society (Blog, 3.4.2014; 23.4.2017). In the name of gender equality, some craft teachers were ready to develop the subject with the same content to be taught to all pupils (Blog, 16.4.2014); others claimed that equity could not be reached with common objectives, since that eliminated pupil's choice for the emphasis of craft education (Blog, 20.4.2017).

At its extreme, it seemed that multi-materiality was addressed both as a practice of pursuing equity and as a practice degrading it. From the viewpoint of technical crafts, "equity is best promoted with general education in the field of technology" (TN, 2/2019, 17). Conversely, textile-based debates rather concerned multi-materiality as a pathway to integrative craft projects across the content areas, where pupils could comply with multifaceted learning tasks in which a range of different materials and technologies could be applied (Huhtaniemi, 2019; also KKV 65/2018/TOL). In terms of equity, it seemed that common ground could only be reached by practicing different ways to modify and handle materials, and by making connections and conjunctions with the materials being used within the craft processes. Although both traditional and new materials and manufacturing techniques may be emphasized, different content areas among the craft subject require integration in order to guarantee the enactment of inclusive learning tasks and projects through which pupils can manage and engage in both content areas of crafts coincidentally.

### **Varying views of technology education in relation to craft education**

In Finland, technology education is not a school subject, but a multidisciplinary and cross-curricular learning entity. The new Finnish National Core Curriculum for Basic Education (FNBE, 2014) underlines technology education in several contexts, from the basic values to various transversal competencies, and to many individual subjects. However, most strongly it is linked to craft education, which provides the means for creative ideation and experimentation with technologies, for developing pupils' understandings of the technological world.

In the curriculum, craft is characterized as a subject in which “activities are based on craft expression, design, and technology” (FNBE, 2014, p. 146). These are not explicitly defined in the curriculum, but rather are described at a general level. The term “technology” appears in relation to the competencies of understanding, evaluating and developing different technological applications, including their operating principles and related practical problems. In addition, the craft curriculum refers to the technological environment, technological expression, as well as information and communication technology as means for designing, producing and documenting crafts.

The somewhat broad definition of technology education provides schools and teachers with much autonomy on how it can be understood and enacted in the practices of craft education. Finnish technology education has traditionally been strongly associated with technical craft. In fact, the terms have been used, and still are sometimes used, as synonyms for each other, both nationally and internationally. Furthermore, technology is often regarded as digital technology only, alienating it from more traditional craft technologies, such as sewing or welding. The ambiguity of the term, as well as its history, have caused confusion and uncertainty among craft teachers and other stakeholders.

#### ***Concerns and confrontations about technology education, technical craft, and textile craft***

In the curriculum (FNBE, 2014), technology education is imbedded in various subjects, but with particularly strong links to craft education in general. However, recent discussions among the stakeholders, namely technical craft teachers, have elevated the traditional view of technology education as being equivalent to technical craft: “*TAO ry [the association of technology teachers] wants to profile technical craft as the forerunner of technology education. -- Technical craft is the best that basic education has to offer for pupils interested in technology and making.*” (TN, 4/2018, 7) Also, the name of the subject, craft, was considered problematic, because some stakeholders alleged that the public reading of the term craft is too strongly bound to textiles, and the new curriculum caused technical crafts to merge disadvantageously with so-called crafting in general.

In the discussions, these concerns were justified with confrontations of textile and technical crafts. Some technical craft teachers declared that textile craft aims only at self-expression, well-being, and aesthetics by using traditional craft techniques (e.g. TN, 4/2014, 3; TN, 1/2015, 3). This confrontation was particularly striking in the statement written by two technical craft teachers, in which, on the contrary, technical craft was claimed as a future-oriented technology subject with strong links to industry and labour markets:

The main contents of textile craft are sewing, crocheting, knitting, felting, weaving, embroidery, and fabric printing. These have no clear connections to the reality of the workforce today, instead, the relevance of textile craft lies in self-expression and artistic skills. Although these are important and meaningful aspects, they cannot replace the basic skills of technical craft. (Ojanen & Rastas, 2018)

Quite the opposite, many textile craft teachers expressed an integrative view towards technology education: “Our common craft requires dismantling of myths and stereotypes. --- Technology education is often bounded to technical craft only, but why, let’s say, coding could not be taught within textile craft.” (TS, 2/2015, 14; also TS, 1/2016, 25.)

The discussions revealed that there is no common understanding of what technology education is and who is eligible to teach it. Some regarded it as equivalent to technical craft, while others took a broader, more future-oriented perspective.

***Concern about the position of technical craft: A new subject as a solution?***

Crafts, like many other artistic and practical subjects, has throughout its history had an unsteady and much negotiated position in the educational system, in comparison to more academic school subjects such as mathematics or science. The “new” multi-material craft has again raised concerns about the fragile position of crafts, especially among the technical craft stakeholders. In their educational policy strategy, the Association of Technology Teachers proposed a new school subject for basic education and upper secondary education, in order to reinforce the status of technical craft so that its “*relevance in the Finnish educational system would be recognized*” (TN, 3/2019, 16; also TN, 2/2019, 17).

The proposed new subject, called technical work and technology (TTT), would integrate technical craft, technology education, mathematics and natural sciences. The suggested TTT has a strong resemblance to the STEM approach (science, technology, engineering, mathematics), as both consider technology and engineering as vehicles for contextualizing science and mathematics curricula (see e.g. Ritz & Fan, 2015). According to technical craft teachers, the target is to apply abstract knowledge of natural sciences and mathematics through practical working with tangible outcomes: “*In technical craft the most focal aim is to develop technical-logical thinking. With technical-logical thinking we mean learning of technical principles through concrete working and the ability to logically apply this knowledge to concrete level*” (TN, 3/2019, 16). Very strong claims in favour of the new subject and against multi-material craft were presented: “*Technical craft must be separated from the crafts subject, since developing it under the crafts arm has proven to be impossible*” (TN, 3/2019, 16; also TN, 2/2019, 17). Indeed, the technical craft teachers persuaded the Confederation of Finnish Industries (EK, n.d.) that a mistake had been made in the new craft curriculum in terms of technology education, so that EK encouraged to continue with efforts to repair the situation.

Similar to the reasoning behind STEM integration, technology education was understood as an application of science and mathematics, as a way to comprehend scientific or mathematical concepts in a practical, hands-on way: “*Unnecessary work and mistakes will be avoided when mathematics and science are applied*” (TN, 2/2014, 7). The view of technology education as applied science was based on pre-knowledge of scientific principles, and on the ability to produce functional artefacts: “*If instead of mere guessing or experimenting, the functionality of the product is predicted by learning to apply the possibilities of mathematics and science*” (TN, 2/2014, 7). Further, technological creativity was understood as something different than artistic creativity: “*Technological creativity differs from artistic creativity in that the end result of technological creativity is a functional object, structure, or device. For functionality, it is important to realize, for example, the requirements of laws of physics.*” (TN, 4/2014, 32)

The Finnish National Core Curriculum (FNBE, 2014) emphasizes a holistic and transdisciplinary approach to all teaching and learning, and crafts are already been integrated with maths and science. A study about integrating maths with technical crafts teaching (Kokko, Sormunen & Eronen, 2015) revealed that the 8th grade pupils appreciated the opportunity to apply mathematics to hands-on activities, and their motivation towards the study of mathematics increased. However, the study concluded that to reach high-level learning achievements, the pupils would benefit from having solid background information in respective subject areas; a finding that does not support combining technical crafts with mathematics and science as a new subject. In international contexts, an integrated STEM approach has proved to have undesirable consequences for technology education; its integrity has been at risk when integrated with science and mathematics (Williams 2011, 32).

The discussions among technical craft stakeholders revealed that the status of technical craft as part of multi-material craft was seen problematic, and that the integration with technology education, mathematics and science education would strengthen its position. Through the integration, technical craft and technology education were presumed to become applied science and mathematics. This line of thinking was not seen in the discussions by textile craft stakeholders; instead, they highlighted that technology education brings new opportunities to crafts in general, and integrative projects with any school subjects are possible and relevant (TS, 3/2019, 8-9; also the blog maintext, Järnefelt & Matinlauri, 2014).

### ***Concerns about tapping the transdisciplinary and innovative aspects of technology education***

The discussions among craft teachers and other stakeholders expressed the significance of understanding the all-pervasive and daily apparent nature of technology. Further, as future consumers, citizens, and policy-makers all pupils should be provided with transdisciplinary abilities to understand existing technologies as well as creative competencies to innovate new ones: *"We need more and more professionals from various fields, who can utilize, adapt and create technologies that support the building of sustainable future"* (TN, 1/2019, 20).

The concern about tapping the transdisciplinary and innovative nature of technology education shifted the discussion away from the more narrow definitions of technology education as technical craft or as applied science, and changed also the viewpoint from technique-, material-, or product-oriented perspective to broader, process-oriented directions: *"In crafts, learning by doing supports students to take a firm grip on technological phenomena"* (TS, 2/2019, 9). The basic question was whether we are learning and teaching how our view of the world fits into existing knowledge and technologies, or how knowledge and technologies can advance our, and future generations', quality of life: *"It is easy to teach techniques, but it stifles the technological inventiveness."* (TN, 3/2016, 12; also TS, 2/2018, 22)

Broadening the definition of technology education entails potential for engaging people who are currently underrepresented in technological studies or careers (see e.g. Ward et al., 2015). Craft education has been criticized for maintaining stereotyped gender roles, because previous curricula have enabled, although not encouraged, the traditional dichotomy in which girls mainly studied textile craft and boys technical craft (Kokko, 2012; Niiranen, 2016). The new curriculum (FNBE, 2014) provides all pupils with an equal opportunity to study both, but this was not seen sufficient: *"women will not be encouraged to technological studies by guiding girls to study coding. It is essential to create connections to technologies in the fields, such as health-care, that are already of interest to girls"* (TS, 3/2019, 8; also TN, 3/2016, 9). Increased diversity in the field was also in the interests of technological industries, as expressed by the director of education in the Technology Industries of Finland federation: *"We need to work actively in many ways, in order to provide young people with knowledge and experience of the diversity and options of technology fields"* (TN, 3/2018, 21). In the discussions, some of the stakeholders presented even stronger arguments in favour of technological industries: *"The contents of generally educative craft and technology education should aim for the availability of competent individuals for the labour market"* (TN, 2/2016, 30). Naturally, the objective of basic education is not to educate future workers, but sensible and responsible citizens (e.g., KKV 675/2018/TOL; see also Akava, 2018). Although not all pupils become technology professionals, as consumers they have a strong impact on the directions in which technologies are designed and developed.

To conclude, in the discussions among craft teachers and other stakeholders the concept of technology education in relation to the craft curriculum brought out confusion, debate, and uncertainty about future directions. There was no consensus about what the concept means and the contents and practices that should be included in the teaching and learning of technology education. This evoked debates on whether technology education belongs essentially to technical craft, or whether it brings new

opportunities to craft education in general. Further, the discussions revealed two opposite views about the future of technology education. On one hand, merging technology education with technical craft was proposed in the new TTT school subject. On the other hand, technology education was regarded as being imbedded in various subjects including crafts in general.

## **Discussion and conclusions**

In this article, we have highlighted the emerging themes concerning the discussions and debates over the current craft curriculum for basic education in Finland. The curriculum reform has led to turbulence that is dividing craft stakeholders and especially the craft teachers who expressed conflicting views about the implementation, contents, purposes, and the future of the crafts subject. However, the uniting theme was a broad understanding about the catastrophic lesson hour distribution, which was seen insufficient for enabling the proper fulfilment of the crafts curriculum. The cuts in compulsory lesson hours in crafts, especially concerning secondary school, have been disappointing. There was a shared view that it is essential to correct the situation in the future, to get more lesson hours into the secondary school curriculum, and also to get more optional lesson hours for crafts. Most compulsory craft lessons are at the primary level, where the craft subject teachers professional competence could be utilized more.

In terms of the enactment of the new curriculum, the craft stakeholders had varying views about how to apply multi-materiality in craft education. All in all, the stakeholders accepted that crafting is an exploratory, inventive and experimental activity involving the implementation of a variety of visual, material, technical, and methodological solutions, developing the pupil's critical thinking, problem solving skills, and the use of digital technologies. The major conflicting views were about the level of implementation of a multi-material approach in craft education (see also Pöllänen, 2019). Many stakeholders didn't seem to embrace multi-materiality as the fusion of two former craft entities. Among the textile craft stakeholders, multi-materiality was understood as offering an access to a variety of materials and technologies with increased knowledge of a range of materials and their uses. This was seen valuable for the development of a more responsible future, and in bringing new and important content to the subject of crafts. However, many technical craft stakeholders perceived multi-materiality as a trivial concept, not bringing anything new to the craft subject. The views of the stakeholders being this far from each other, the concept of multi-materiality does not seem to provide a solution for the dispute about the future of the subject. In addition, the implications for craft teachers and their education require full attention since it is not clear what multi-materiality requires from the teachers.

The discussions about technology education among craft teachers and other stakeholders resemble the international history of technology education, moving from being a product-oriented subject to become an applied science, and a transdisciplinary learning entity underlining creativity and other 21st century competencies. According to de Vries (2017), technology education in most countries emerged from craft education, and both were originally perceived as being of high educational value. However, as the focus shifted towards production of everyday objects, the status of the subject declined. The educational aims were further overshadowed by the needs of economic and industrial life, which underlined the training of competent workers through the STEM approach. The association with science and mathematics, rather than craft, enhanced the status of technology education, but at the cost of its true character (de Vries, 2017). Within the STEM approach, there is a risk that learning activities are organized around predetermined scientific concepts, and learning is assessed in terms of the level of adoption of these concepts. However, real-world problems are complex and multifaceted; it is impossible to know the content and phases of the problem-solving process in advance. Furthermore, the most focal problem-solving method in technology education is design (e.g. de Vries, 2017; Kangas & Seitamaa-Hakkarainen, 2017), which includes many stages that cannot be reached through logical reasoning or other methods used in the natural sciences. Therefore, the interest of educators and researchers has

recently moved from STEM towards a STEAM framework, where the 'A' represents arts, including design and humanities (e.g. Bequette & Bequette, 2012).

The transition to STEAM is motivated by the need to increase the creativity of all citizens (e.g. Sousa & Pilecki, 2018). Creativity and innovation have become the recognized hope for solving multiple, severe cumulative problems and risks related to climate change, sustainability of the Earth, and radical inequality. Within the STEAM framework, art, design, and humanities are perceived as being the key to creative practices as well as to the better cultural knowledge needed in dealing with the wicked problems facing the present and future world (e.g. Ge, Ifenthaler, & Spector, 2015). While the Finnish national core curriculum has a strong resemblance to the STEAM approach, the discussions, especially among technical craft stakeholders, seem to have remained in the historical phases of craft and technology education. Finland could be a world leader in developing research-based STEAM pedagogy, where crafts have a central role. Our curriculum, the craft facilities in each school, craft teachers educated to the master's degree level, as well as university-level research on craft science and craft pedagogy are already paving the way to creative ways of learning.

The research presented in this article has its limitations since the selected data consisted of documents that revealed only some aspects of the current reflections on the latest craft curriculum. The professional magazines have limited opportunities to publish various views and thus they don't represent all the craft teachers' voices. However, Rapley and Jenkins (2010, 385) have suggested that documents are an under-researched area and a prime topic for future investigation since they "shape, and are reflexively shaped by, our perceptions, interactions, institutions, policies, and society. They are central in the production, reproduction, and transformation of our educational landscapes." Analysing a range of documents was used to get a broad picture of the topic; the selected data represent the focal documents used by the craft stakeholders for expressing their views. However, most of the articles and comments were from craft teachers, thus, leaving out the voices of many stakeholders.

The discussions in social and formal media about the new craft curriculum continue; conflicting views are expressed about the topics in this article. To get a better picture, more research is required about the experiences, options and problems of implementation of the new craft curriculum which has been in force for only a couple of years. Exploring the views of the teachers and the pupils through a range of methods would help in this. Also, the decline in the choice of crafts as an elective subject needs further attention to find out the reasons for this. Is it a consequence of the craft curriculum as such, or mainly the lesson hour distribution with diminished options for studying crafts overall. Or is it a reflection of some teachers' resistance to the new contents and approaches, since the new craft curriculum is experienced to be overly challenging with the abundance of targets to be reached within the tight time limits?

Finally, the name of the craft subject has gone through changes during its history. The former textile work and technical work were merged into crafts in 2004 (see FNBE, 2004). In the international context, 'crafts' has proved out to be a complex name for a subject, resulting in considerable confusion, since the concept does not imply to the broad contents of the subject, including design and technology. As described in this article, there are initiatives to divide the subject into two separate entities. If the subject remains as a single entity, the current turbulence and conflicting debates pave way for reconsidering the name to be more informative, such as for example Craft, Design and Technology which might show more accurately the meaning and the content of the subject (see also Porko-Hudd, Pöllänen & Lindfors, 2018).

There is a worldwide understanding of the need for the education to meet the future challenges and to equip pupils with 21st century skills. The core question for crafts as a subject to survive, is to pay careful attention to its core targets in this regard. At its best, the current, even conflicting, debates will eventually lead to a fruitful and sustainable solution for the future of crafts in the Finnish Core Curriculum.



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