

Skills and knowledge as a basis for safety competence in teacher education curriculum

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Abstract

Enhancing the safety culture in school context sets new challenges to prospective teachers, their need for safety skills, knowledge and competence. Based on the latest studies, the paper describes the factors of safety culture in the educational institutions. These factors are risks, processes, learning environments, learning, normative guidance, actors, target groups and tools. As a case study, further analysis is provided about the factor of learning. The data is teacher education curriculum text of one Finnish teacher education unit.

In the content analysis, the data was first classified with themes in the context of safety. During the second round of analysis, special attention was paid to the verbs. Further, two groups, skills (S) and knowledge (K) were established.

The analysis showed that there were more knowledge based (K) than skills based (S) meaning units. As the university studies are based on theoretical issues, this is understandable. Based on the analysis, it seems that the curriculum describes safety one-sided as the social issues and the interaction were in focus in both groups, knowledge and skills. This could mean that safety is valued in the teacher education. However, the results raise some concerns, whether the future teachers are able to provide decent education for their pupils in the various safety and security areas, such as traffic safety, injuries or occupational safety, or whether they are able to respond in the sudden crisis situations during the school day, for instance in case of violence or fire.

Keywords: learning, safety, security, competence, knowledge, education

Introduction

According to the WHO, safety is a condition where factors that are a threat to a society are managed in such a way that individuals have the opportunity to gain well-being. In English, the concept 'safety' has two separate meanings. 'Safety' implies a human aspect and freedom from accident or injury, while 'security' implies deliberateness or intent, as well as being protected from dangers. [1,2]

The context of this paper is education. Based on the previous studies, I will shortly describe the quality assurance dimensions of safety in educational institutions and further on, describe the dimension of learning in a more detailed way. The research questions are: How does the teacher education curriculum reflect safety issues? and How are knowledge and skills items presented in the teacher education curriculum?

The aim of this qualitative study was also to understand the knowledge and skills based safety discourses in the teacher education curriculum. Teacher education in Finland has its roots in academic principles and therefore it is understandable that 2/3 of the meaning units found were knowledge based and only 1/3 skills based.

In this study safety is seen as a broad concept. Although values the individual has, may change during the life, safety as a value stays as a basic and sustainable. [3] Further on, generally the ultimate goal of safety and security is wellbeing. It is somewhat unclear what it is to enhance safety culture in general and especially in the educational context, as it is acting with nonevents - something that did not happen. [2]

Safety in general has received growing attention in recent years, but the research is focusing on health education, with little attention paid to the safety risks confronting pupils, teachers, teacher students or school staff. The model presented here [4] is a description of the latest results concerning safety education and it does not represent how these researches are related to each other or how much each of the items is affecting the learning of safety. To present the dynamic nature of the factors the model is presented in the form of cycle. These eight factors or dimensions are risks, systems, situations, targets, actors, normative guiding and documents, learning environments and learning. The factors are presented in Figure 1 and further on explained in detail (Fig. 1).

Safety education consists of three objectives: awareness raising, social skills and behavior modification approaches that aim to reduce risk-taking [5]. This is called here the risks dimension. For instance injuries, violence, poisonings and traffic, are a leading cause of premature death among youth. Although the injuries at schools are typically mild [6-8], the injuries and near-miss cases should be monitored [9,10]. Young people tend to act against norms and regulations, using their space and environment in an unpredictable manner [11,12]. Erik Hollnagel [13] who has researched safety and security in organizations points out that instead of only thinking, how things can go wrong (Safety I), we should also think about the situations when everything

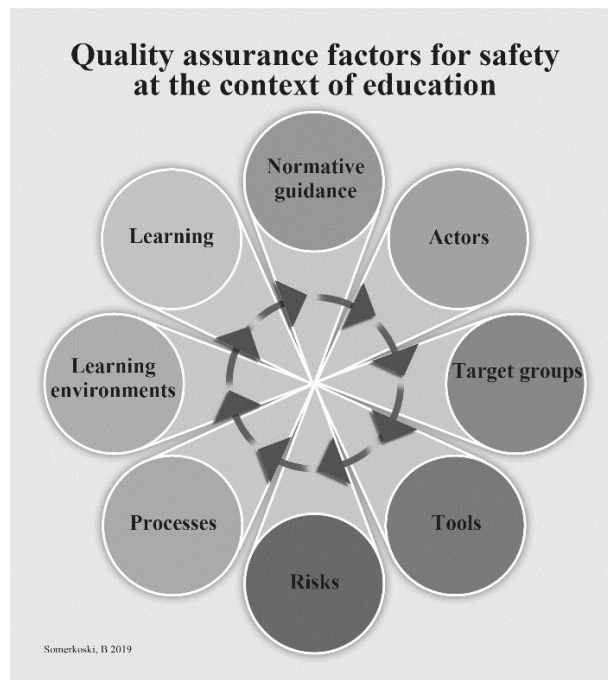


Figure 1. Quality assurance dimensions for safety at the educational context [4].

goes right (Safety II). This describes well the contents of processes dimension. [14]. The tools dimension contains models, campaigns, agendas and programmes to enhance the safety culture, for instance the proactive safety management of the challenging situations, preventive measures and follow-up of such situations [15].

When assuring the safety at the educational context, the target groups dimension is essential. Puolokainen and Varblane, two researchers from Estonia, created a model where preventive practices were analyzed. The researchers distinguished five target groups: personified activities, standardized activities for groups, event based activities, media activities and social media activities. [16] When creating a safe learning environment school should aim the preventive actions at the whole organization, not just at pupils or at students. It seems that the risks the adults face in the school remain under reported. [7,11,15] The actors dimension describes the preventive methods that are designed for the whole organization: teachers, staff and students not depending on the organization the person acts for [15]. The normative control, the normative guidance dimension,

such as legislation [17], curriculum [18], plan for using disciplinary educational discussions, the plan for protecting pupils against violence [19] and other strategic documents create a framework for the preventive actions. One of the critical factors when creating good quality safety culture is the learning environments dimension. Safety culture can be constructed in learning environments in many ways. It is usual to distinguish the social, psychological and physical sides of the learning environment. During the past few years, the physical learning environment has widened from the classroom over to school facilities and neighborhoods. Learning environments are educational approaches or physical settings for learners. Learning environment is more than a place – it is the construction of learning, teaching, materials, methods and policies. [20-22]. In the research literature, learning is a combination of knowledge, skills and attitudes. When these pieces are integrated together, we talk about competence. [23,9] In this paper the learning factor is discussed in more detailed way. Safety should be part of the every-day measures and the culture of well-being in schools and curriculum [20,24], because the curriculum always reflects the values of the surrounding society [25] and safety can be seen as one of the basic values [3].

Teacher needs knowledge and skills on various dimensions of safety to sustain safety at school [26]. Also in case of unintentional injuries teachers need appropriate safety skills for the first aid. In emergencies at the learning environment, the teacher is sometimes the only adult to respond. In addition, the teacher also needs safety knowledge as the content of teaching. Teachers make ongoing, conscious or subconscious, decisions about how to adjust the curriculum content to the classroom reality, because they work as a messenger between the written and the enacted curriculum [27]. Many researchers state that there is a theory practice gap in the area of professional development. [28,29]. Teacher education should ensure both knowledge and skills [30]. This paper discusses how skill and knowledge orientated safety contents in the teacher education curriculum could be distinguished. Also a model for future curriculum research will be provided.

Curriculum content and discourses

Safety is mentioned as a value in the school legislation. Students' right to safety, security and welfare is also mandated: "A pupil participating in education shall be entitled to a safe learning environment" [17]. It is also stated that teachers need, more than before, skills for interaction and teaching multicultural groups in various learning environments [31]. According to Phelan [32] teachers are responsible for specific actions and concrete decisions. A central definition close to practice and skills is competence. Competence is here understood as ability to perform a specific set of skills related to the tasks that are partly constitutive of that particular professional practice. Competence in the broad sense means that a person has the ability to fulfill a task or solve a problem and that he or she has the values and attitudes, knowledge and skills [30] and ability to use these in an innovative way. [31] In safety context that would mean for instance teacher's ability to take care of the group dynamics in the classroom in emergency situations, actively preventing unintentional injuries and violence, being able to solve school bullying cases or being able to use the machinery in an appropriate way. To fulfill the safety as a value it is necessary for the teachers to make immediate judgements when trying to protect the students from harm. These, sometimes also ethical, questions are solved for instance when a teacher has a reason to believe that a student carries a weapon in school or is breaking the law or norm in another way. [32]

The curriculum is here seen as a document of official (state) and expert (academic) discourses. Curriculum theory sees teacher education as engaging and practicing teachers in interdisciplinary studies located at the intersections of myself and society, the school subjects and everyday life [23,33,34]. At the university, the curriculum represents the aims and contents of what the students should learn. Written curriculum binds the students to the contents of teaching. [25,see also 35]. The curriculum is considered a major guideline for teacher education and it is based on the legislation [35] that gives a pedagogic frame for studies. There is considerable variation between educational institutions, as the universities in Finland hold academic autonomy

when establishing the written curricula. It has to be noted, that also the definitions around the curriculum may vary, for instance, in some teacher education units, curriculum is called a study plan, whereas others name it as a study guide, a study program or a general degree requirement. [35,36] The study material in this study is the comprehensive studies content of the written curriculum in one teacher education unit in Finland [37].

As mentioned before, enhancing safety in educational context means not just theoretical background and attitude, but also ability to act [38]. It can be quite clearly stated that Finland has a strong leadership to support the existing infrastructure, learning and values on children's and adolescents' safety based at the various target programs [39,40] In addition, in the field of education, one of the problems is the dominance of the knowledge-focused school subjects [31]. Based on the research literature, it can be stated that teachers' safety competence demands contextual knowledge, but also practical skills, mixed with beliefs and moral values.

Material and methods

The data for the research consisted of 80 (N=80) curriculum courses, a total of 247 study points (minor subject studies excluded) in one teacher education unit, including bachelor and master level studies. The data analysis was carried out in several phases being typical in content analysis. The study material consisted of the aims and contents of the teacher education curriculum texts in comprehensive studies. The study material, such as or further readings, presented at the teacher education curriculum was not included in the data. [12]

The data analysis started by reading the curriculum texts carefully and the first matrix (Table 1) was drawn to find the characteristics of the safety contents. The data consisted of issues from the quality assurance factors (Figure 1) or words (and word clusters), such as safety, security, protection, bullying, interaction, risk, harassment, first aid, injuries, group dynamics, interaction and occupational safety. Occupational safety issues were for instance the proper use of machinery.

Table 1. Examples of curriculum analysis - meaning units in the context of safety and security.

Course number/Curriculum text	Meaning units knowledge	Meaning units skills	Theme
2300 Arts, crafts and technology teaching/ Student teacher masters the most popular craft technics and can use machinery in a professional manner		masters can use	Occupational safety
1101 Practical training/ Student teacher knows how to definite the meaning of student knowledge as a basis for the teaching and holistic education - student recognizes the social, group dynamics related and cultural phenomenons - student teacher can build positive relationship between him/her and the pupil - based on his/her perceptions student teacher is able to plan and implement learning situations	knows how to definite recognizes	can build	Interaction

The data was classified with themes. During the second round, the attention was paid especially to the verbs of the text, which were divided in two groups whether the verb referred to the cognitive dimension (knowing) or practical skill-related activities (doing). The meaning units were organized in a matrix based on the verbs, one with the knowledge (K) and the other with the skills (S). In the third phase, these two groups were analyzed

separately to get a deeper picture of the curriculum contents. The meaning unit was either a word (e.g. understands, argument) or few words together, the word cluster (e.g. practice working methods, orientate to interaction skills). Finally, the meaning units were translated into English. Examples of the meaning units are presented in the Table 2.

Table 2. Examples of the meaning units related to knowledge (K) and skill (S) dimensions in the teacher education curricula.

Knowledge (K)	Skill (S)
to argument	to practice
to evaluate	to practice working methods
to discuss	to develop
to perceive	to develop the use
to master knowledge	to learn
to consider	to learn to design practices
to describe	to take into account
to realize	to master
is able to interpret	is able to use
is able to consider critically	to support the participation
to get acquainted	to orientate to conduct
to deepen	to orientate to working methods
to consider	to orientate to interaction skills
to recognize	to get acquainted with
to have readiness to take into account	to try to enhance
to have readiness to design	to construct action
to understand	to apply
to understand the meaning of skills	the readiness to use
knows how to definite	the readiness to support

Results

Out of 80 (n=80) study courses mentioned in the curriculum, 23 included meaning units that were referring to safety. There were total 41 (f=41) meaning units found in the data, out of which 66 % (17) were referring to knowledge (K) and 34 % (14) for the practical skills (S). (Table 2)

Meaning units in knowledge based contents contained verbs such as analyze, argument, evaluate, discuss, perceive. All these meaning units indicated the knowledge (K) dimension that the prospective teacher would gain by learning the curriculum. In the other group the meaning units that indicated connections to practical doing or skill (S) dimension were distinguished, such as to practice, enhance, develop and get acquainted. These verbs indicated that prospective teacher should learn to do something. Further on, the safety discourses of the curriculum texts were analyzed to find whether there were repetitive meanings in the data. In the overlaps, the same kind of text was found in many courses, and during the analysis, it became evident that some expressions of language appeared in the most of the data.

The content of the knowledge-based curriculum texts represents prospective teachers' safety competency in the light of interaction and group dynamics. In the curriculum texts, prospective teacher "recognizes the social, group dynamic and cultural phenomenon"; the student is able to "reflect the interaction and group dynamics and socio-cultural phenomenon". The texts emphasize the interaction in various levels - towards the class, the school, colleagues and society, even media and other social surroundings in school context.

The other part of the data consisted of meaning units that were based on practical skills. In the seminar and practical training activities, the curriculum text pointed out that "the student teacher is able to build a positive teacher-student interaction" or in the pedagogic seminar "the student teacher is able to the use observation of interaction and group dynamics as a research method". The data included that the prospective student got acquainted with web-based interaction. In the skills

based safety discourse the interaction was emphasized as well: the student "is getting acquainted with the group dynamics" and "flexible behavior in the interaction situations".

Also the skills related curriculum discourse focused on interaction in multiple ways and levels: in between the prospective teachers, teacher-students, teacher-class, teacher-school and teacher-society, such as media and the web. In addition, the practical skills were mentioned in the crafts education: the student "is able to use the machinery safely". This was mentioned in both textile and technical craft courses.

Conclusion

The aim of this qualitative study was also to understand the knowledge and skills based safety discourses in the teacher education curriculum. This understanding was constructed by analyzing the safety related meaning units of the teacher education curriculum texts to study how the teacher education curriculum reflects safety issues and how knowledge and skills items are presented in the curriculum.

In this study, the social dimension was focused in all the curriculum texts and in both groups, indicating that interaction skills and group dynamics are an integral part of teacher professionalism what it comes to safety. The analysis showed that at both groups the curriculum used substantially more text to describe group dynamics and social issues than safety competences in other areas. Safety was included in the curriculum, and could therefore be seen as a value in teacher education [25], hence the focus was in the interactive skills as well as the group dynamics. Teacher education in Finland has its roots in academic principles and therefore it is understandable that 2/3 of the meaning units found were knowledge based and only 1/3 skills based.

The safety discourse in the curriculum was presented well what it comes to competence in interaction and group dynamics and therefore it is evident that the curriculum gives the prospective teacher a possibility to achieve the competence in safety. However, the curric-

ulum - being a strategic, conducting and guiding document - should serve the contents of safety - broader. There were no meaning units found on fire safety, traffic safety, safety in buildings, cyber safety or violence prevention in the comprehensive studies of teacher education curriculum – based on the results of this study, it seems that the teacher education curriculum remains somewhat uncompleted or one-sided in the context of safety education. This raises some concerns, whether the future teachers are able to respond to the

crises or whether they have enough competence to deliver the important message of safety to their pupils.

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