
# Finnish Subject Student Teachers' Views on Their Social Competencies at the End of Their Educational Studies

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## 1. Introduction

The study described in this paper is part of the project OVET (Opettajankoulutuksen valinnat—ennakoivaa tulevaisuustyötä) concerning the Finnish primary and subject teachers' competencies (Metsäpelto et al. 2020). The aim of the study is to examine the Finnish subject student teachers' social competencies in teaching students about sustainable development (SD) with respect to local, regional, and global environmental issues. The primary focus is on the United Nations' Sustainable Development Goal 4 (SDG4), which includes ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. SDG4 pertains to the quality of education for improving the quality of life through innovative solutions to the world's greatest problems (UNESCO 2017).

Teacher qualification in Finland depends on a university-based education. The subject teacher qualification requires 180 European Credit Transfer and Accumulation System (ECTS) credits for a lower degree and at least 120 ECTS credits for a university degree, which includes or is supplemented by courses totalling at least 60 ECTS credits in teacher pedagogical studies. Pedagogical studies offer a wide range of qualifications for teaching in basic, high school, and other educational institutions. They consist of basic and specific subject studies in education and include education in science and studies of science as a subject as well as teaching practice. In addition, the subject teacher is required to have sufficient subject matter knowledge (Korppas 2008, p. 2). The participants of this survey were subject student teachers from Finnish-speaking universities. The results were redrived from content-based analyses.

Humans impact the physical environment in many ways: overpopulation, pollution, burning fossil fuels, and deforestation. These factors have triggered climate change, soil erosion, poor air quality, and undrinkable water. These resulting negative impacts can affect human behavior. Education is seen as a means to guide the human community towards sustainable lifestyles as it has been found to positively affect both environmental awareness and attitudes (Nisiforou and Charalambides 2012; Fletcher 2000). Thus, the important questions are: What should be taught in

the future? What should future teachers be able to do? What do subject student teachers feel they are capable of or prepared to do? and What do they think they can do as teachers?

Sustainable development education (SDE) aims at sustainability and a sustainable society. It addresses environmental issues and SD as both developing and improving the living environment, as well as ensuring the participation and empowerment of the people. It also increases awareness of environmental issues and their social impacts, negotiating what issues to address, promoting environmental justice, and gathering the resources and partners necessary to confront these issues. Thus, SDE supports the achievement of the United Nations' SD goals (UNESCO 2017).

The way individuals work at school is influenced by the school culture, a historically mediated system of meaning. Its elements are the norms, values, beliefs, ceremonies, rituals, traditions and myths of the school community (Stolp 1994; Silvera 2017). Therefore, the focus of SDE should be on action competence, critical thinking, deliberation, and understanding how one's choices affect local, national, and global societies and the entire biosphere (Wolff et al. 2017). Action competence is part of social skills and competencies (Metsäpelto et al. 2020).

## 2. Theoretical Background

### *2.1. Bronfenbrenner's Ecological Environmental Theory*

In this study, student teachers are thought to live and study in an environment comparable to that described by Bronfenbrenner. According to Bronfenbrenner (1994) ecological environment theory, the individual is an active factor affecting the environment, which must adapt to the conditions of the environment. The environment is understood to consist of nested entities of various scales and their interrelationships within micro-, meso-, exo-, macro-, and chronosystems. A microsystem is a pattern of activities, social roles, and interpersonal relations experienced by the developing person in a given face-to-face interaction. A mesosystem is a system of microsystems. An exosystem comprises the linkages and processes taking place amongst two or more settings, at least one of which does not contain the developing person, but in which events occur that indirectly influence processes within the immediate setting in which the developing person lives. A macrosystem consists of the overarching pattern of the micro-, meso-, and exosystem characteristics of a given culture or subculture, with particular reference to the belief systems, bodies of knowledge, material resources, lifestyles, opportunity structures, hazards, and life course options that are embedded in each of these broader systems. A chronosystem encompasses change or consistency

over time, not only of the characteristics of the person but also of the environment in which that person lives (Bronfenbrenner 1994).

### *2.2. Teachers' Competencies in Connection to the MAP Model and Social Competences*

The multidimensional adapted process (MAP) model of teaching is based on the study of Blömeke et al. (2015). A MAP model consists of the following: (a) dimensions of competencies, (b) situation-specific skills, and (c) professional practices (Metsäpelto et al. 2020). Dimensions of competencies are divided into five groups. Cognitive competencies are (1) the knowledge base for teaching and learning and (2) cognitive skills. Non-cognitive competencies are (3) social skills, (4) personal orientations and (5) professional well-being. The focus of this article is on the social skills.

Teachers need social skills both in the classroom as well as when working with colleagues outside the classroom. This has been attested to in the literature (Jennings and Greenberg 2009). This has also been supported by the responses that primary school teachers have given in the ongoing survey at the University of Turku for students five years after they have graduated. According to these findings, the most important working life skill is the ability to cooperate (Aarresaari 2017).

The MAP model further divides social skills into relational skills, emotional competency, diversity competency, and intercultural competency and interaction. Relational skills are needed to be able to act constructively and reciprocally take into account others' views and to be able to listen to and provide others with the personal and professional space they need. This also includes negotiating and conflict management. Emotional competency, in turn, consists of the ability to perceive and recognize one's own and others' emotions and their causes and effects. An emotionally competent teacher is also able to regulate and express emotions in an appropriate way. Diversity competency involves the ability of a teacher to see and value every child as an individual. It also means that the teacher possesses the skills to prevent processes of marginalization and to promote the furtherance of equality and participancy. Intercultural competency and interaction give the teacher the ability to interact and communicate in multicultural contexts. Thus, the teacher is sensitive to how ethnicity, language, age, religion, gender, sexuality, and social class can lead to oversimplifications, misunderstandings, and prejudices.

This article focuses mostly on relational skills and the emotional competency of the subject teacher students.

### *2.3. Teachers' Competencies in SDE*

According to Brundiers and Wiek (2017), the knowledge dimensions required for integrative SD include content knowledge, methodological skills, communication skills, collaborative teamwork, participant engagement, project leadership ability, continuous learning ability, and self-care. According to UNESCO (2017), the key competences for sustainability comprise the following eight different competencies. Systems thinking competency (e.g., to recognize and understand relationships and analyze complex systems), anticipatory competency (e.g., to understand and evaluate multiple futures, create one's own visions for the future, and deal with risks and changes), and normative competency (e.g., to understand and reflect on the norms and negotiate sustainability values that underlie one's actions to principles, goals, and targets) are situated in the cognitive domain (Velazquez and Rivas 2020). According to Velazquez and Rivas (2020), the socio–emotional domain comprises strategic competency (e.g., to collectively develop and implement innovative actions), collaboration competency (to learn from others) and critical thinking competency (e.g., to question norms, practices, and opinions; to reflect on one's own values, perceptions, and actions), and the behavioral domain includes—for its part—self-awareness competency (e.g., the ability to reflect on one's own role in the local community and global society) and integrated problem-solving competency (e.g., the ability to develop solution options to promote sustainable development by integrating the abovementioned competences).

The key competencies for sustainability can be understood as "transversal, multifunctional and context independent" (Rychen and Salganik 2003). They represent the particularities that citizens who work to achieve sustainability need to sort out at present, as well as complex forthcoming challenges. They are relevant to all SDGs and enable individuals to relate the different SDGs to each other—to see 'the big picture' of the 2030 Agenda for Sustainable Development (United Nations 2015). The key competencies represent cross-cutting competencies that are necessary for all learners of all ages worldwide. Thus, teachers, including subject teachers, should be able to master the issues concerning the key competences for sustainability and be able to apply their knowledge in teaching situations.

### *2.4. Strategies for SDE in Finnish Subject Student Teachers' Studies*

On the one hand, policy documents and strategies request SDE at all levels, including teacher education in Finland. On the other, Finnish universities are autonomous when it comes to decisions regarding the scope of SDE and practice, and there are no common models for how to integrate SDE into university courses

and teacher education (Wolff et al. 2017). SDE is seldom compulsory in Finnish subject student teachers' study programs. As a result, there is great variation in teacher educators' knowledge and skills about how to integrate and teach SD issues to the subject student teachers. This ultimately means that the main responsibility lies with the biology and geography educators with a particular focus on ecological SDE. The other two dimensions, economic as well as social and cultural SDE, are also introduced. Both the worldviews and methods of solving worldwide problems are seen in the Finnish policymaking documents and strategies (Ministry of Education 2006; Ministry of the Environment 2007).

National policy documents and action plans describe goals and offer ideas on how to implement SD at all levels of education (Ministry of Education 2006; Ministry of the Environment 2007). In these documents, the citizens are strongly encouraged to learn to maintain social, cultural, and economic well-being without depleting natural resources or overloading nature's delicate balance. According to Wolff et al. (2017), this means that the role of education and training is to ensure that all citizens have the knowledge, skills, readiness, and vision that will enable them to build a sustainable and reasonable future and commit to a sustainable way of life. According to the Basic Education Act (Finlex 2001), social dimensions of the SDE are emphasized, such as responsibility and collaboration promoting tolerance as well as trust among human groups, people, and cultures.

The emphasis on SD regarding teacher education curricula has become stronger in recent years, but differences exist amongst the teacher education programs of Finnish universities. Due to the diverse strategic goals of the universities, the SD goals might be difficult to achieve in Finnish teacher education programs (Wolff et al. 2017). This means that SDG4—which relates to the quality of education as part of student teachers' 'social competencies' in teaching SD, which is within the focus of this study—may not be attainable. Thus, we decided to study the Finnish subject student teachers' competencies, especially the social competencies.

## 3. Research Questions (RQs)

Wolff et al. (2017) have argued that qualified Finnish education fails in SDE. In response to their study, the authors wanted to investigate what subject student teachers regard as core environmental problems in SDE (RQ1), while also focusing on the subject student teachers' social competencies (RQs 2, 3, and 4). The four RQs of the study are as follows:

1. What kind of environmental problems do the subject student teachers regard as core environmental problems at the local, regional, and global levels?

2. What kind of opportunities do the subject student teachers feel they have to socially influence these local, regional, and global environmental issues?
3. How do the subject student teachers identify and understand the social relationships in the classroom?

    a. How keen is the subject student teacher in participating in social communication?
    b. What kind of social capacity does the subject student teacher think she/he has?
    c. What kind of things does the subject student teacher think influences her/his decision-making?

4. How do the subject student teachers view their likelihood to influence the future school culture with respect to SD at the school where they work?

    a. How keen is the subject student teacher in participating in the development of the school culture regarding SD?
    b. What kind of things does the subject student teacher think influences her/his decision-making?

In the Material and Methods section, the analyses are presented according to RQs 1–4 and questions in the questionnaire.

## 4. Materials and Methods

### *4.1. Collection Methods of Material*

The material was collected using a web-based questionnaire (Webropol 2.0) in the spring of 2019. The target group consisted of the subject student teachers who spoke Finnish as a first language and who had completed at least 25% of their pedagogical studies before the survey. A total of 1200 subject student teachers from six universities in Finland were sent an invitation to participate in the survey and the link to the questionnaire by email. The response time was six weeks and three days. Two reminders of the survey were sent to the prospective participants. Participation in the study was voluntary, and the subject student teachers were allowed to complete the questionnaire at the time and place most convenient for them. However, due to the voluntary nature of the survey, the target population may not have been uniform, and the survey may have been answered in very different environments and situations.

In total, 142 subject student teachers responded to the survey. However, the answers of four of subject student teachers were excluded from the analysis of the results because they had not yet completed at least 25% off their pedagogical studies. The final analysis thus covers the responses of 138 subject student teachers. The majority of the respondents were women (74.6%) aged 20–29 years (69.6%). Of the remaining respondents, 30.4% were over 29 years of age, and approximately 82% had completed most of their pedagogical studies (over 75%); however, most had little to no experience in actual teaching (83.3%). The respondents studied natural sciences, mathematics, humanities, their mother tongue, and foreign languages. Additionally, one subject student teacher was studying physical education, and two participated in adult education.

### *4.2. Analysis Methods*

The research material was primarily handled in a data-driven manner. However, Saloranta's doctoral dissertation's themes of social and cultural sustainability, as well as UNESCO's definition of SD and SDGs, were used to formulate the questions on the questionnaire (Saloranta 2017; UNESCO 2017). The questionnaire included both open-ended and multiple-choice questions, and its main focus was on the open-ended questions. The questions dealt with SD and students' social skills, but these themes were not specially addressed directly in the questions to the subject student teachers. The estimated duration of the survey was 15 min. The following sections describe the questions in the questionnaire and their analysis in more detail.

#### 4.2.1. The Subject Student Teachers' Perception of Major Environmental Problems (RQ1)

The kind of environmental problems the subject student teachers regarded as core environmental problems at local, regional, and global levels were the initial focus of the study (RQ1). In the questionnaire, the subject student teachers were asked about the key environmental problems at each individual level. To avoid overlapping in analyses, a clear division was made between ecological, economic, social, and cultural problems.

In the study, the problems of pollution and destruction of terrestrial or aquatic ecosystems, biodiversity, climate change, and air pollution were classified as ecological environmental problems. The economic problems of the environment were defined as those related to people's unsustainable lives: overconsumption, point sources, traffic, and waste. For example, traffic encompassed both the heavy use of transport and the disadvantages of public transport. Similarly, waste referred to a large amount

of waste, littering, and deficiencies in waste management, whereas overconsumption referred to the excessive use of matter and energy, such as favoring instant fashion and unsustainable returns on energy. The point sources mainly dealt with factories but also agricultural emissions. Social and cultural problems included human health and well-being and such human rights as access to food, water, and education as well as equality.

#### 4.2.2. The Subject Student Teachers' Opportunities to Influence on Environmental Problems (RQ2)

Secondly, the kind of opportunities the subject student teachers felt they had to socially influence the local, regional, and global environmental issues were studied. The subject student teachers were also asked how and with whom they would solve the environmental problems. Here, too, they were allowed to respond individually at different levels. The answers of the subject student teachers were divided by further sorting them into different solutions based on their impact on other people and their knowledge, views, and decisions. The solutions included collaboration, education, and influencing attitudes (action to change attitudes) or policies (civic participation). Attitudes can be affected by setting an example for others or by increasing the positive interest of others in the environment. Policies can have an influence by voting, strikes, or other methods of manifestation. Social solutions also involve policy decisions, volunteering, and various forms of innovation and research for SD. Social action, in turn, can lead to more sustainable neighborhoods and influence people's consumption choices. The key impact of policy decisions is described, for example, in the following answer:

> The use of fossil fuels and other emissions-producing activities can both be enforced and directed to more environmentally friendly activities through legislation and taxation. It creates a situation where there are no other cost-effective and sensible solutions. (female student 136 = F136, at the regional level, policy decision)

The subject student teachers were also asked whom the students thought is responsible for solving environmental problems. Three categories were used in analyzing the subject student teachers' answers. If the subject student teachers included themselves as problem-solvers, the answer was labeled 'I'. If subject student teachers mentioned other problem-solvers, but not themselves, the answer was labeled 'others'. If the answer contained no solver, the answer was marked as 'not detectable'.

#### 4.2.3. The Subject Student Teachers' Understanding of the Social Relationships in the Classroom (RQ3)

The third research question concerned how the subject student teachers identified and understood the social relationships in the classroom. One question in the questionnaire was designed to determine the subject student teachers' actions in two school-related social situations from the teacher's perspective. The questionnaire included different statements for students to choose from. How to solve the school-related social situations concerning disputes in the class was the focus of the first question (Part 1), and organization of a class trip was the focus in the second one (Part 2).

In the first question, the following case was presented: Two students started to argue in the classroom after the teacher left the class. It was possible to resolve the situation by either promptly returning the students to their seats, letting the headmaster talk to the quarrelers, or by dealing with the dispute either in the classroom or in the corridor. The subject student teachers were also asked to justify their choices. In a question regarding the organization of a class trip, the teacher had to contact the tour staff because all students did not fit within the capacity of the tour. The subject student teachers were able to explain their own ways to solve the situation. Frequent themes were picked from the subject student teachers' answers focusing on what kind of things affected their decision-making.

The following statements were also made to the subject student teachers (Part 3): 1. Continuous economic growth is possible; 2. Economic equality will be achieved between the welfare states and developing countries in the next few years; 3. The school day should start at eight o'clock; 4. Finland can afford to cut forests at the current rate; and 5. The traffic rules should always be followed. This article does not elaborate on the subject student teachers' reasoning for these statements, but it defines the subject student teachers' confidence in their own opinions. Certainty of subject student teachers' confidence in their own opinions was divided into strong opinions, statements, beliefs, and uncertain opinions. Strong opinions used an exclamation mark or other means of confirmation, such as 'of course' or 'definitely', in sentences related to the reality of the statement. In turn, beliefs used mitigating expressions or emphasized one's own opinion, such as 'probably' and 'I think'. In uncertain opinions, the subject student teachers clearly stated that they did not control the subject and did not know if their answer was correct.

#### 4.2.4. The Subject Student Teachers' Likelihoods to Influence the School Culture with Respect to SD (RQ4)

Firstly, the study sought to determine how the subject student teachers saw their likelihood to influence the school culture with respect to SD at the school where they worked in the future with respect to sustainable development. RQ4 had two secondary questions: How keen is the subject student teacher in participating in the development of the school culture regarding SD? and What kinds of things the student thinks influence her/his decision-making? The subject student teachers' general interest in influencing their school environment from the perspective of SD was also studied. The question was implemented on a sliding scale divided into 10 sections, where 8–10 meant interested and 10 very interested in SD. Secondly, the subject student teachers were asked an open-ended question about a problem in their school community and their more specific thoughts on how to solve it. Thirdly, they were asked to choose the three most important ways of influencing school culture based on the themes of social and cultural sustainability presented by Saloranta (2017).

According to Saloranta, the themes that meet the criteria of social and cultural sustainability are the well-being of staff and students, school and school safety, prevention of bullying and exclusion, student care and other learning support, cultural environment, customs and traditions, and multiculturalism and internationality. In the questionnaire, the corresponding options included a vegetarian food day once a week, reducing traffic speeds near the school, reducing online bullying with a specialist visit, setting up a hobby club for school pupils' leisure activities, learning about local cultural sites and landscapes, and taking the celebration culture of minority groups into account in school activities. The options in the questionnaire did not directly follow the same principles as the SD themes; for example, a vegetarian food day involves not only well-being but also an ecological approach. However, they were all central to the values of social and cultural SD.

## 5. Results

### *5.1. The Subject Student Teachers' Perception of Major Environmental Problems (RQ1)*

The subject student teachers mentioned ecological and economic environmental problems more often than cultural and social problems and other environmental problems (Figure 1). Economic problems were most often mentioned at the local level and ecological problems at the global level.

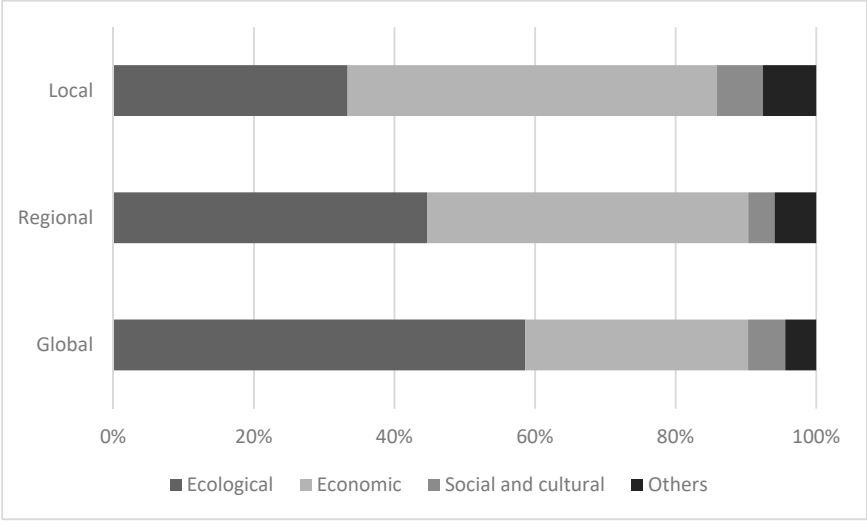


**Figure 1.** The environmental problems at local, regional, and global levels that were mentioned by the subject student teachers were further divided into ecological, economic, social and cultural problems, as well as other environmental problems. Other environmental problems included problems in the school environment and people's indifference to environmental problems.

Climate change was considered to be the most important environmental problem at the global level; however, it was also mentioned at the local and regional level (Figure 2). Air pollution was also considered as central to global warming as well as other sources of air pollution: traffic, overconsumption, and point sources. In addition to climate change, the respondents mentioned biodiversity loss, land pollution, deforestation, and water pollution. At a regional level, there was concern about logging in Finnish forests and the state of the Baltic Sea. At a global level, rainforests were frequently mentioned. A subject student teacher wrote and explained this as follows: 'Global warming, extreme weather phenomena, ocean acidification. The list is long. I think every one of them is central and interrelated to each other' (F74).

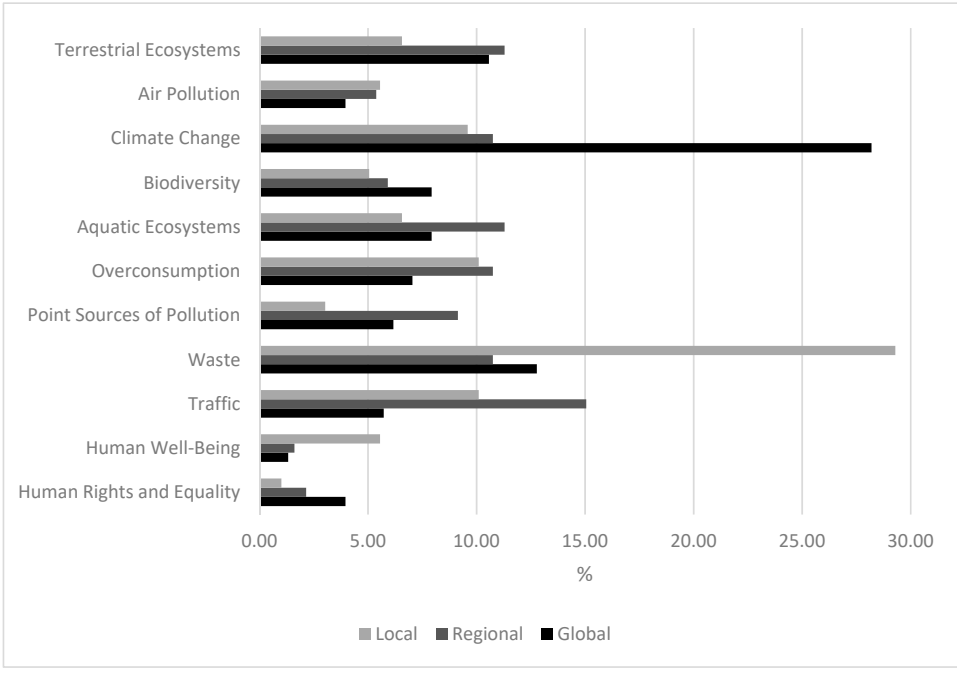


**Figure 2.** Environmental problems mentioned by the subject student teachers at local, regional, and global levels. The graph only covers ecological (terrestrial ecosystem, air pollution, climate change, biodiversity, aquatic ecosystem), economic (overconsumption, point sources of pollution, waste, traffic), and social and cultural (human well-being, human rights, equality) environmental issues. In addition, the subject student teachers mentioned problems in the school environment and the general disregard for the environment.

The subject student teachers most often referred to waste at the local level, with an emphasis on littering and lack of recycling. At the global level, they most often mentioned plastic; microplastics in the sea were mentioned only in two answers. The biggest concern in the transport sector was driving private cars and the lack of public transport. At a global level, the effect of airplanes was mentioned a few times.

There were a few mentions of social and cultural problems. Problems affecting well-being included health problems caused by poor air quality. Human rights problems referred to famine and depletion of clean drinking water, as well as refugee and human inequality. The inequality of women was highlighted in the context of the problems caused by population growth. Human genetic engineering was seen as a threat to the future.

*5.2. The Subject Student Teachers' Opportunities to Influence on Environmental Problems (RQ2)*

The subject student teachers found international cooperation and reasonable construction to be important in solving environmental problems (Figure 3). Reasonable construction was seen as sustainable when it had, for example, well-functioning public transport, waste management, and recycling opportunities. Furthermore, the importance of the policy was perceived to be essential at the regional and global levels. At the local level, in particular, household consumption choices and education were considered necessary.

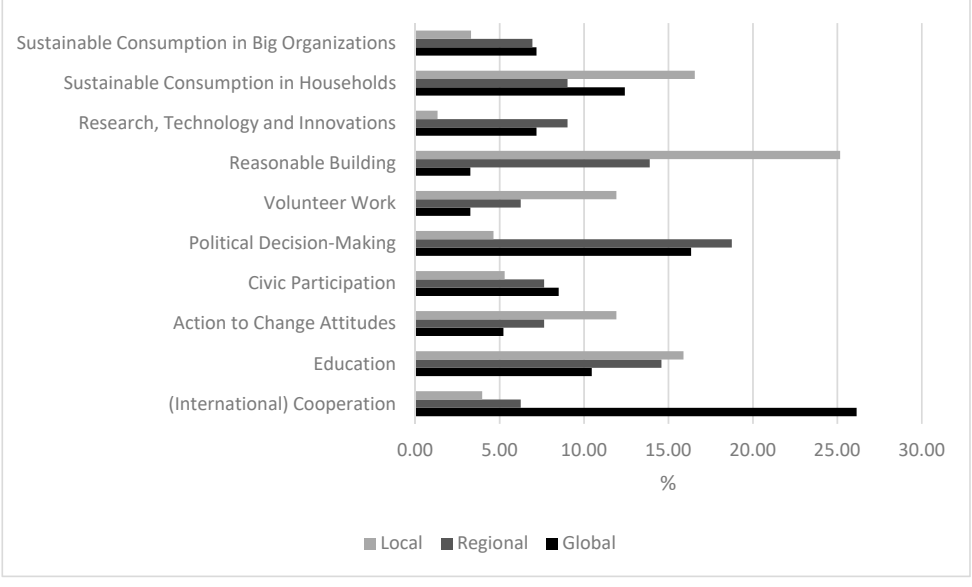


**Figure 3.** The solutions for environmental problems at local, regional, and global levels mentioned by the subject student teachers.

In most of the answers, the subject student teachers excluded themselves from the solvers of the environmental problems, and only the responsibility of other parties was identified (Figure 4). Some of the answers did not identify the solvers at all, and in the remaining answers, the subject student teachers presented themselves as the solvers of environmental problems. For example, the family, school pupils and staff, big companies, policymakers, the European Union, UNESCO, the United Nations, and rich nations were mentioned as problem-solvers. The subject student

teachers' role in solving environmental problems was less pronounced at the regional and global levels than at the local level.

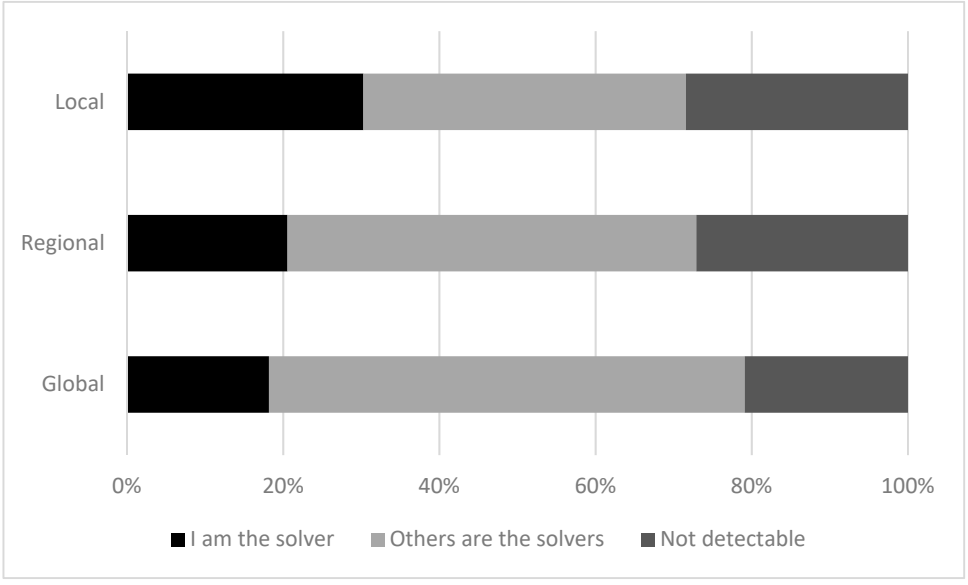


**Figure 4.** The subject student teachers' views (n = 138) on who will act as a solver of environmental problems. In some of the answers, the problem-solver was not detectable, and in some cases, the respondents excluded themselves from the possible problem-solvers (Other). In other responses, the subject student teachers considered themselves to be problem-solvers, either alone or as one of the other problem-solvers (I).

### *5.3. The Subject Student Teachers' Understanding of the Social Relationships in the Classroom (RQ3)*

#### 5.3.1. Dealing a Dispute in Class (Part 1)

The questionnaire results indicate that subject student teachers would preferably clarify the situation with the disputants either in the classroom (42.0%) or in the corridor (37.7%) when dealing with a dispute in class. A minority of the subject student teachers (20.3%) thought that they would ignore the dispute and return to the lesson being taught, while no one would ask the principal to settle the dispute, preferring to deal with it themselves. Many subject student teachers mentioned that

their solution would depend on either the severity of the dispute and the physicality, personality, or nature and habits of the disputants and other students (29.0%).

The subject student teachers who thought that they would quickly deal with the matter were those who initially thought the dispute was small. Some subject student teachers stated that if the dispute was more serious, it could be directed to the principal. Otherwise, the dispute would be dealt with by the teacher and the disputants after the lesson or would be left unresolved. The reason for this choice was that arguing would take class time from other students and reduce their ability and opportunity to learn. The dispute was considered to not belong to other students. The answers emphasized the idea of student equality and their right to learn content. For example, one student teacher stated: 'Probably a small dispute so it's best to simply return to the subject' (F21).

The subject student teachers who would resolve the dispute in the corridor emphasized the idea that the dispute must be resolved, but that other students should not be involved in the dispute. The dispute should be dealt with as soon as possible by the teacher dealing with the disputants because that would avoid future problems for the well-being of students, as well as making it easier to pass the subject. The answers also revealed a certain amount of emphasis on educational work. The respondents did not want to include other students in the dispute due to the rights and well-being of individual students and because it allowed others the possibility to focus on the content being taught. The subject student teachers wanted to provide disputants with an equitable and peaceful environment in which to deal with a situation where no one would feel embarrassed or would have to deal with their personal issues in public. They also thought that the private conversation might lead to a more in-depth discussion. Some of the answers also highlighted the teacher's own responsibility in resolving the situation. One subject student teacher wrote:

> It is better to have the dispute handled in person, without the class being present, so that things can be talked through. In the meantime, the rest of the class can do tasks, for example. However, the issue should not be ignored but cleared up, and the causes of the dispute should be discussed. (F8)

The subject student teachers who noted that they would settle the dispute in the classroom also indicated a desire to deal with the dispute immediately to avoid future problems. They wanted to settle the dispute amongst everyone, emphasizing the idea that other parties are an indirect part of the situation. This answer emphasized the equality of students, but as mentioned earlier, in most cases, the subject student teachers wanted to teach content in the name of equality, thus addressing the situation

with the whole class for the sake of well-being and maintaining a positive atmosphere. In addition, the answers emphasized the role of education alongside the content of the subject and the opportunity created by the situation to develop skills for handling social situations. Some of them also mentioned the school's rule about not leaving the class unattended during the lesson. In addition, they stated that they would not want to leave other students alone to avoid more arguing. One participant expressed this idea: 'I want to hear the views of all of those present in the situation so that I can find out what has really happened. I want the class to see how conflicts are resolved constructively' (F98).

#### 5.3.2. Organizing a Class Trip (Part 2)

The subject student teachers were also asked to present a solution to a situation where the class is making an excursion that not everyone will be allowed to go on due to occupancy restrictions. Most subject student teachers wanted to end up with a plan and to discuss it with the tour staff (58.7%). Some, in turn, were ready to directly ask the tour staff's opinion on the problem without a plan (12.3%). The rest of the answers (29.0%) did not show any social interaction with other people on the trip. One suggested solution was to change the destination or to divide the class into groups and then make several visits.

In addition to the solutions presented above, other commonly occurring issues were noted in the answers. For example, one-third of the subject student teachers also had an alternative plan. Usually, the alternative plan was ready to be implemented if the first plan with the tour staff did not work. Some subject student teachers questioned the controversial situation (11. 6%). The number of resources was also mentioned (10.1%). For many of them, it was important that every student has the possibility to join the excursion. In several answers, this was emphasized separately in addition to the solution (18.8%). Excluding other students was a less common option, either directly (2.9%) or as a fallback option (5.1%).

#### 5.3.3. Responding to Different Statements (Part 3)

The subject student teachers were given five statements that they had to mark as true or false and justify their answers (see Table 1). The statements were: 1. Continuous economic growth is possible; 2. Economic equality will be achieved between the welfare states and developing countries in the next few years; 3. The school day should start at eight o'clock; 4. Finland can afford to cut forests at the current rate; and 5. The traffic rules should always be followed. The subject student teachers substantiated their statements in different ways, and these were divided based on opponents

into strong opinions, statements, beliefs, and uncertain opinions. Most answers were statements without strong expressions of feeling. Strong opinions were more represented in the answer option (True/False) that was more common amongst the other subject student teachers. An exception to this was statement 4, where strong opinions appeared in both true and false answers.

**Table 1.** Subject student teachers' answers to the statements and the certainty of the answers. The statements were: 1. Continuous economic growth is possible; 2. Economic equality will be achieved between the welfare states and developing countries in the next few years; 3. The school day should start at eight o'clock; 4. Finland can afford to cut forests at the current rate; and 5. The traffic rules should always be followed.

| | % | Statement 1 | Statement 2 | Statement 3 | Statement 4 | Statement 5 |
|---|---|---|---|---|---|---|
| | **True** | 18.84 | 0.72 | 18.84 | 31.88 | 71.74 |
| | **False** | 81.16 | 98.55 | 80.43 | 65.22 | 27.54 |
| | **No answer** | 0 | 0.72 | 0.72 | 2.90 | 0.72 |
| | **In total** | 100 | 100 | 100 | 100 | 100 |
| **Answer certainty (True)** | Strong opinion | 0 | 0 | 0.00 | 2.27 | 11.11 |
| | Statement | 61.54 | 100 | 69.23 | 54.55 | 62.63 |
| | Belief | 7.69 | 0 | 23.08 | 22.73 | 5.05 |
| | Uncertain opinion | 7.69 | 0 | 0 | 9.09 | 5.05 |
| **Answer certainty (False)** | Strong opinion | 5.36 | 3.68 | 3.60 | 3.33 | 0 |
| | Statement | 68.75 | 51.47 | 67.57 | 61.11 | 81.58 |
| | Belief | 12.50 | 31.62 | 18.92 | 7.78 | 13.16 |
| | Uncertain opinion | 1.79 | 2.21 | 3.60 | 14.44 | 0 |

### *5.4. The Subject Student Teachers' Likelihood to Influence the School Culture with Respect to SD (RQ4)*

The fourth research question was designed to determine the subject student teachers' interest in influencing school culture in the context of SD. About 70% of the subject student teachers were interested, and nearly 25% of them were very interested in participating in the school's culture of SD (Figure 5). More specifically, they preferably wanted to influence bullying prevention in the school environment (Figures 6 and 7). In addition, the well-being of school staff and students, as well as student welfare, was seen as a meaningful part of influence.

In general, the subject student teachers saw bullying and inequality (53.4%) to be major problems in the school community (Figure 6). Other problems for students

(18.1%) and teachers (16.4%) in the school community were also central to this. They were concerned also about teacher exhaustion, the poor work atmosphere, and lack of collaboration skills amongst teachers. They argued that teachers today are being overly pressured to use digital devices and implement other innovations, and that this could result in their relationships with colleagues being poor. They also expressed concern about students' exhaustion, motivation problems, and lack of skills in areas such as civility, cooperation, and language skills (Finnish as a second language = S2 students). They also mentioned electronic devices and their harmful effects.

Inefficiencies in inclusion and integration were mentioned several times (7.8%), and they were usually linked to the lack of resources in the school. Class sizes were considered too large for teachers to control. Noted health and environmental problems (4.3%) included indoor air problems, loss of food, lack of recycling, and laziness in implementing sustainable development. The questionnaire also asked them to describe a multidisciplinary approach to any solution; however, this did not suit many of the stated problem situations. All the same, even in other problems (for example, bullying), multidisciplinary teaching methods were often considered ineffective.

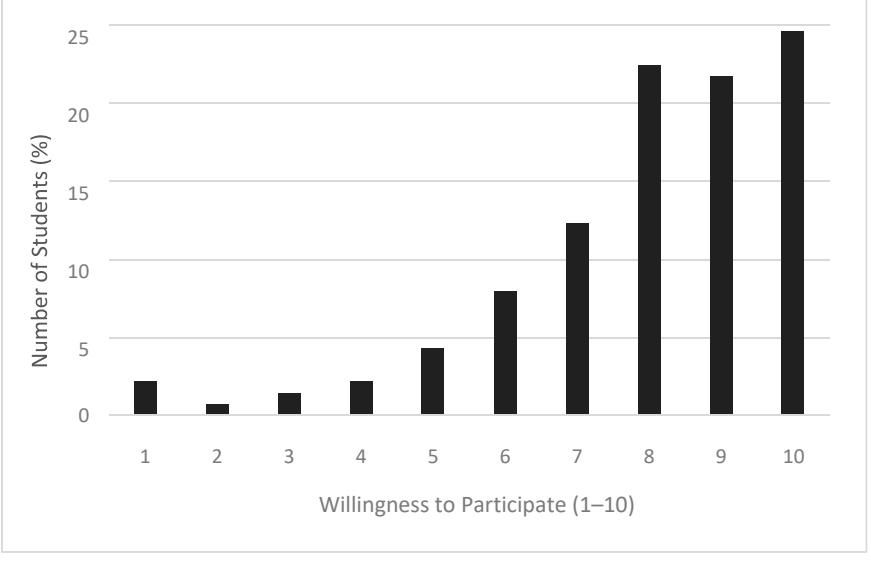


**Figure 5.** The subject student teachers' willingness to participate in the development of the school culture regarding sustainable development (SD).

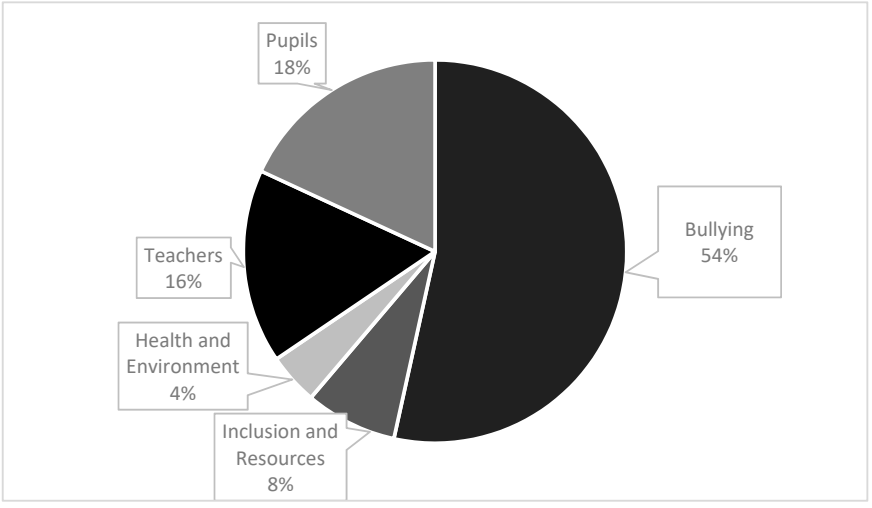


**Figure 6.** Problems of the school community mentioned by the subject student teachers in the open-ended questions (%). The teachers' section included both teacher well-being and lack of collaboration skills, and the pupils' section included well-being, motivation, and scholarship.

The subject student teachers wanted to influence the same things they saw as a problem in the school environment. They thought that teachers' decisions were primarily applied to equality, the creation of a good atmosphere, security, and the well-being of the students (Figure 7). They wanted to make the school environment a pleasant place where everyone had the same rights and opportunities. They felt that bullying weakens this possibility the most. They also shared personal experiences of bullying, as one subject student teacher wrote: 'I think bullying is the worst thing a student can experience. Bullying on the Internet is a difficult and "invisible" dilemma that deserves greater attention for its possible eradication' (F6). The subject student teacher's willingness to participate in the development of the school culture is 9 (Figure 5), and they had chosen "Prevention of Bullying" as the most important subject in which to participate (Figure 7).

In addition, the teachers wanted to influence current problems and provide students with opportunities for developing civility and spiritual growth. The importance of the environment and the students' interests were also reflected in the answers. However, the subject student teachers themselves were not very interested in participating in school physical safety.

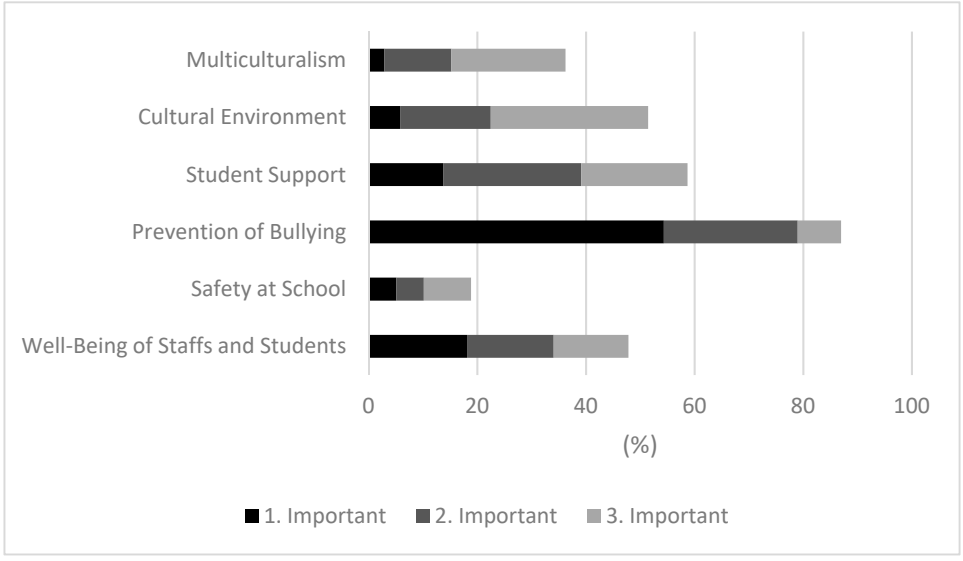


**Figure 7.** The level of importance concerning the subject student teachers' willingness to participate in the development of different school culture subjects regarding SD. This was a multiple-choice question, and the subject student teachers had to choose three answers in order of their importance based on the available options. The options were based on Saloranta (2017) social and cultural sustainability themes.

## 6. Discussion

The subject student teachers were aware of the existence of SDE in school, in general. Global, regional, and local environmental problems were identified as well as some methods to solve these problems. These results were in keeping with the Finnish policymaking documents and strategies (Ministry of Education 2006; Ministry of the Environment 2007; Finnish National Board of Education 2013, 2014). However, they did not see social disadvantages as environmental problems as much as ecological and economic disadvantages.

In earlier studies, it has been shown that the young pupils and students highlighted and brought up littering as a major environmental problem (e.g., Loughland et al. 2002; Palmberg and Kuru 2000; Ercan 2011; Yli-Panula et al. 2019) which was also the case in this study. The results of this study showed that the subject student teachers were concerned about littering at the local level. The results also showed that the Finnish subject student teachers were aware of the adverse effects of climate change, especially at the global level. However, for example, no swamps

were mentioned in the answers, although this has been the case in media. Climate change is a diverse socio-scientific issue (Sadler 2011), and it is regarded one of the biggest health threats of the 21st century (Watts et al. 2015; Robbins 2015; McIver et al. 2015). In the article of Yang et al. (2018), Chinese medical students were found to be less likely to adopt a global view of the impacts of climate change. Climate change as a topic-specific epistemic belief has been shown to be very likely culturally bound (cf. Bråten et al. 2009).

The subject student teachers in this study were not very much aware of social disadvantages. They believed that environmental problems can be solved both by social means, such as international cooperation, politics, and education, and also by sustainable consumption and reasonable construction (cf. Ercan 2011). In their opinion, environmental problem-solvers include schools, politicians, and large companies, and they stated that their responsibility for solving environmental problems is greater at the local than at the global level.

With respect to the school community, the subject student teachers attached great importance to student equality and well-being. This was reflected in their practices in the school community and their interest in the influence of school culture. Therefore, they saw bullying as one of the biggest problems in the school community, and they wanted to contribute to its prevention. This result differs from previous research results, for example, that classroom cohesion and self-efficacy in social conflicts have been shown to be directly associated with students' willingness to intervene in bullying situations (cf. Wachs et al. 2018), and it is important to also take this into account in SDE. The subject student teachers were also concerned about the well-being of teachers and students within a demanding working community. In general, they were interested in the impact of SD. These results support those of previous research (Andersson et al. 2013). Amongst other things, they wanted to increase vegetarian meal opportunities in schools and reduce food waste. They assessed their social capacity as generally being good, but they also often wanted to make their own decisions, ignoring social help or opinions. Thus, based on the results of the study, it seems that it is important that teacher educators see, according to Bronfenbrenner's ecological environmental theory (1994), the starting points for SDE from an individual perspective taking into account the student teachers' ideas and views when the goal is promoting equity, improving quality of life and well-being, sustaining natural resources, and protecting health.

The reliability of this study is based on methodological triangulation: a mixed method approach was used, and several type of questions (e.g., open-ended and closed questions) were used in each research question. The reliability is also supported

by the four researchers who participated in all phases of the study, for example, coming to an agreement on the analysis concerning the subject student teachers' answers (Lincoln and Cuba 1985). The reliability of the study is also supported by the earlier findings of other researchers. However, this study also has limitations. Although the number of participants is quite small, it still gives an overview of the Finnish subject student teachers' views of their social competencies.

## 7. Conclusion and Implications

According to the Finnish subject student teachers' views, they are concerned about core environmental problems on the local (e.g., littering, lack of recycling, people's well-being), regional (e.g., the state of the Baltic Sea), and global (e.g., climate change, human rights) levels. It is evident that they are interested in SD decision-making in school, and they value equality and the mental well-being of people. They expressed the belief that environmental problems can be solved both by social means, such as international cooperation, politics, and education, as well as by sustainable consumption and reasonable construction. Thus, they believe we can achieve SDG4 and improve the quality of education; however, the authors stress the need to strengthen teacher training in social skills.

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