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Swedish student teachers' perceptions of consequences of the teacher shortage for their future profession

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ABSTRACT

The current teacher shortage is a global phenomenon, and it has spurred research from various perspectives. However, there is limited research on student teachers' perceptions, in particular in the Nordic countries. This study, therefore, is based on 75 student teachers' perceptions of the teacher shortage and its consequences for their future profession, their students, and society at large. Empirical data was analysed with reflexive thematic analysis and following Bronfenbrenner's ecological systems theory. The answers show great concern from all three perspectives. The conclusions are that the teacher shortage must be understood and addressed on a broad front that includes student teachers.

To go to school to learn and develop is a human right for every child. Teachers are the key actors in schools and are responsible for securing children's right to acquire the education they need to proceed with their lives (Hargreaves & Fullan, 2012; Hattie, 2009). To provide qualified education for the children, qualified teachers are essential (UNESCO, 2017). This is a severe problem for the whole world. The teacher shortage poses a pervasive problem for individual students, schools, and teachers and for societies around the globe because the supply of qualified teachers is the linchpin in the educational system (see Fig. 3).

A teacher shortage occurs when there is an imbalance of supply and demand. According to the OECD, a country's demand for teachers depends on an array of factors, such as the age structure of the school age population, enrolment rates, the starting and ending age of compulsory education, the average class size, and teaching loads. Supply is influenced by teacher education, employment and working conditions, and job opportunities outside education (OECD, 2022). In October 2016, UNESCO (2017) announced that a global teacher shortage lay ahead. Almost 80 million teachers were needed.

In the context of this study, Sweden, teacher shortage is an accelerating societal problem. From 50 years ago having been a small problem with a certain lack of teachers in some fields (science and special education), the shortage has accelerated, especially in the last 15 years (Berglund & Bostedt, 2023). Bertilsson (2018) term this shortage to be of historic proportions deems the shortfall to be of historic proportions. On average, 73 per cent of teachers are qualified, but in some subjects for example special education, and science, or school types for example school age educare, and vocational training, the eligibility is significantly lower, down to 35% (Skolverket, 2021). The problem becomes more complicated when retirements in the coming years are large, relatively few newly trained teachers start in the profession and drop-outs are high both in teacher training and in the profession (especially teachers who have only worked for less than 5 years) (Nordiska Lärarorgantsationers Samråd, 2023). Admittedly, there are deficiencies in other professions such as nurses, civil engineers, sociologists and IT technician (SCB 2023) but applications to the teaching profession compared to other professions have decreased sharply relative to both other professions and to the teaching profession (UKÄ, 2023). In other words, the shortage is already alarming and fewer and fewer teachers enter the profession because it does not seem attractive, which is not the case for other professions, which make the situation exceptional.

The teacher shortage is occurring all over the world, and an important question is how student teachers are affected by this situation. Student teachers fulfil an utterly important function when they, as qualified teachers, start working in classrooms. Therefore, student teachers' perceptions of the consequences of the teacher shortage and how they picture their future working are important information to observe if they are to complete their education and stay in the teaching profession. The absence of research on their perceptions is conspicuous and constitutes a research gap. This article focuses on student teachers' perceptions of the teacher shortage in Sweden, but the teacher shortage is a phenomenon that affects several continents.

The purpose of this study is to shed light on what student teachers

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believe the consequences are for their future profession as teachers, for students, and for society at large. The research questions are as follows.

- What consequences of the teacher shortage do student teachers perceive for their future profession?
- What are student teachers' perceptions of the consequences of the teacher shortage for students?
- What are student teachers' perceptions of the consequences of the teacher shortage for society?

The study's results are important for several reasons. A glimpse of student teachers' perceptions can help prepare teacher educators address the teacher shortage and tentative challenges during the training period. Furthermore, if student teachers during their training are already reflecting on the situation that confronts them when they start working in schools, they may be more prepared for reality and be able to handle it better. Because the teacher shortage is global, the study is of international interest. Above all, a comprehensive discussion is needed on how all the school's actors can create the best possible conditions for teachers to want to enter and remain in the profession. That is why student teachers' perceptions of their future working life is essential to acknowledge and counteract their forebodings in the best possible way.

1. Previous research

Research has been conducted around the world on the extent of the teacher shortage. In the North American context, García and Weiss (2020) pointed out the teacher shortage is a growing phenomenon in the United States. Current forecasts show teacher shortages in many states and subject areas. The shortcomings have also affected the availability of qualified teachers in schools in socioeconomically vulnerable areas. This is, therefore, not only about recruiting new teachers but also about keeping those who are active today (Sutcher et al., 2019). In Australia, authorities have pointed out that the teacher shortage has increased due to factors such as the profession's status, workload, working conditions, pay, and regional differences (Australian Government, 2022). UNESCO's (2024) global report on teachers showed that 44 million primary and secondary teachers are needed globally by 2030. In the Sub-Saharan African region, no less than 15 million new teachers are needed by 2030. The effects of these numbers regarding student–teacher ratios and how educational structures are affected are ostentatious and require immediate action from stakeholders at all societal levels.

The teacher shortage is also extensive in almost all European countries (Federičová, 2020; O'Doherty & Harford, 2018). However, an examination of 19 countries in Europe showed that teacher turnover is lower in southern Europe (approx. 15%) than in the two Nordic countries (Sweden and Denmark: 37%) included in the study (Federičovás, 2020). See and Gerold (2022) found the teacher shortage in England occurred due to government policy, shortcomings in the selection system, schools' funding systems, and weak or nonexistent analyses of effects of various education policy changes. In Germany, the teacher shortage varies by state, but the situation is very worrying for primary schools, where the absence of teachers leads to closures (Kreienbaum, 2022).

In Denmark, Andersen et al. (2022) stated that the teacher shortage is accelerating in relation to regions, gender, subjects, and the form of school (public or private). In a comparative analysis of the situation in Germany, Denmark, and Sweden, Author 1 et al. (2023) concluded that the teacher shortage is multifaceted and complex. Bertilsson (2018) saw addressing the supply of teachers in Sweden today as a challenge of historic proportions. He noted multiple problems: a declining interest in teacher training and changes in recruitment regarding student teachers' background and academic qualifications. Author 1 et al. (2022) compared the teacher shortage to Swedish conditions, and they highlighted the Swedish challenge as an accelerating societal problem. They analysed the teacher shortage following a governance-theoretical approach, in which shifts in dominant governance philosophies over time relate to an emerging teacher shortage. They also found that schools' competence supply in terms of teachers is a research field in need of new perspectives and understandings.

The teacher shortage is occurring around the world, and an important question is how student teachers are affected by this situation. During an extended period, media descriptions of the teacher profession have been dominated by negative descriptions (Edling & Liljestrand, 2019; Zaremba, 2011). However, research on student teachers' views on the teacher shortage is scarce. Author 1 (2024) reported in a study covering eight professional groups in the teaching profession that student teachers do not differ in their perceptions of the causes of the teacher shortage but rather in their perceptions of solutions. Above all, student teachers did not seem to perceive the media's negative image of teachers as an important cause of the teacher shortage, unlike principals. McKinney (2022) suggested that by upper secondary school, there should be a specialization for courses aimed at teacher studies. Amundsen et al. (2021) highlighted the importance of student teachers addressing early in their education various transition barriers and enablers as well as their impact on teachers' well-being and resilience, which could open up a more visible and understood experience.

2. Theoretical framework

Bronfenbrenner's (1977) ecological systems theory is the overarching theoretical framework that we used to highlight our findings in relation to various contextual factors. Contextual factors form the structure of how perceptions are arranged in the present article. Development is greatly influenced by the interaction between individuals and their environment, in line with the theory of ecology of human development (Bronfenbrenner, 1977).

In our empirical material, the influences on attitudes towards and perceptions of the teacher profession in the future; contextual influences at the societal, organizational, and individual levels; and the interactions among the influences are clearly visible. Bronfenbrenner (1977) placed the individual with peers and the close school environment in the middle of a system (the micro level), which is surrounded by interconnecting microsystems of, for example, teachers and parents (the mesosystem). The exosystem involves links that do not directly interfere with but still may have consequences for the individual, in this case, for example, circumstances affecting the teacher's working life that are beyond their control, such as what type of area the children grow up in. The macrosystem encompasses the culture and discourses in which micro- and mesosystems are embedded, in which factors such as geographical location and socioeconomic background are seen as influential and sensitive to changes over generations. Finally, the chronosystem reflects the patterns appearing through sociohistorical circumstances, such as gender-related choices, politics, reforms, and changing curricula at the state level.

This study's theoretical framework includes the macro- and micro sociological contexts. The former comprises structural levels (i.e., the global, national, regional, cultural, and institutional levels), and the latter comprises social interactions between individuals. Teacher practice and individual action—in interplay with structural factors—played an important role in this study (see Czerniawski, 2008). This complicated web of interplay between teacher practices and structural factors arises because of its complexity, referred to as a "wicked problem" (Berglund & Bostedt, 2023), which we highlight in the following through student teachers' perceptions of the problem.

3. Methods

This is a substudy of a more extensive study in which people from various professional occupations in Swedish schools, including untrained teachers, student health care staff, and principals, completed a

web survey. The main study *Teacher Shortage in Sweden – from professionals' view*, consisted of responses from 606 informants. Statistical analyzes showed that student teachers differed in certain questions from other professions, therefore we wanted to analyze the student teachers' open answers to see their perceptions in more detail (Author 1, 2024). This study reports responses from student teachers only. The survey was answered by 75 student teachers, of whom 19% were men and 81% were women. This ratio reflects the current situation at Swedish universities where women are in majority, in particular among preschool student teachers and primary school teachers who constituted a substantial part of the participants. The student teachers came from various teacher training programs, from preschool to high school. Regarding the participants' demographics, we do not know more than that the survey was answered by distance students who live scattered throughout the country. The respondents' average age was 37.5 years, and some of them had experience working as substitute teachers. When we quote students are quoted, we use the abbreviation TS (teacher student) followed by an identifying number between 1 and 75.

The empirical material that forms the basis for our analysis was obtained in the spring of 2023. Data were collected using a web-based survey administered via a link to the Netigate survey tool (www.netigate.se). The survey was followed by a message explaining the purpose of the study and that participation was voluntary and anonymous. The study followed the Swedish Research Council's rules and ethical recommendations for studies in social science research (Vetenskapsrådet, 2017) and all respondents gave their informed written consent before they filled out the survey. In addition to background information such as age, gender, professional status, and years of work in the school/academy, the questionnaire consisted of statements with fixed and open-ended answers. This article presents the survey's qualitative results concerning student teachers.

3.1. Analysis method

The qualitative data consisted of open-ended responses about student teachers' perception of the consequences of the teacher shortage, totalling 40 A^4 pages of text (Word files, 12-point Times New Roman font). The answers were analysed thematically (Braun & Clarke, 2012) to answer the research questions. The self-reflective process, where the researcher is aware of his/her influence on the research process distinguishes reflexive thematic analysis from other methods. How social and cultural context affects the participants was also important for us to pay attention to in the analysis. The choice of analysis method is based on the fact that existing knowledge about the area is limited (cf. Seuring & Gold, 2012). The data to answer the research questions were sorted via an inductive process; that is, the text "spoke freely," with inspiration from the analysis steps that Braun and Clarke (2012) stated characterise a thematic analysis. This meant after a close reading, the parts of the text that expressed identifiable ideas (meaning units) were condensed into the preliminary genome coding of meaning-bearing parts. The empirical content was methodically examined, the texts were interpreted step by step, and the data were classified to discern patterns. After coding, the next step was thematization, in which the various codes were brought together, with a focus on similarities and differences. The empirical material was broken down into meaningful units, which were condensed into shorter sentences and then abstracted into codes describing the content of the meaningful units (Braun & Clarke, 2012).

More in detail, the preliminary themes were scrutinized concerning the original statements to assess their alignment with the data and determine the identified themes' relevance and meaningfulness. The researchers continually reflected on their perspectives, biases, and assumptions, considering how interpretation of the data may have influenced the interpretations. Codes and categories, which finally formed themes, were analysed. All themes were rigorously evaluated, and eventually labelled. Firstly, the thematic analysis was conducted independently, and then jointly as reflexivity is vital throughout the process. Therefore, the regular meetings between the researchers were crucial to view the data from multiple perspectives. Results were then discussed until consensus was reached.

4. Results

When analysing the open-ended answers from the student teachers, we found that they mentioned consequences of the teacher shortage that reflect an interplay with structural factors from various contextual levels, varying from the individual level to the institutional level in the macrosociological context (Bronfenbrenner, 1977), with perceptions of teachers' status and references to pictures of teacher professions depicted in the media flow. Our analysis of the interplay between micro- and macrosociological contexts guided the final analysis of the empirical material, that is, consequences at the individual level, then the institutional level, and finally the overarching macrosociological context. The reader should keep in mind that there is a constant interplay among these sociological contexts, so consequences perceived as important at the individual level also are embedded in the overarching macrosociological context (Bronfenbrenner, 1977). Therefore, the presentation of the results starts with perceived consequences for the individual teachers as well as their children and families. We then present perceived consequences for teachers' working lives, followed by student teachers' perceived tentative consequences for their students. Finally, we present the perceived consequences of the teacher shortage for society. Subtitles indicate the major categories found in each theme.

4.1. Perceived consequences for the working teacher

In the thematic analysis of the consequences the student teachers believe the teacher shortage will have for their future profession, six subthemes emerged: heavier workload, deteriorating working environment, and personal consequences. Fig. 1shows the relationships between them (see Fig. 2).

4.1.1. Heavier workload

Perceived consequences of a higher workload associated with the shortage of qualified teachers emerged in many ways in the empirical material. The student teachers feared many consequences, including a worsened psychosocial climate in classrooms and work teams, lack of support for new teachers, conflicts between teachers, and not least the lower teacher–student ratio as an effect of the teacher shortage. The student teachers worry about the tasks they will have to handle as qualified teachers, working together with personnel without formal teacher training as "other active teachers must work more than 100%." TS25 specifically mentioned "higher workload in the form of training unauthorised staff, being responsible for all assessments, meeting students and guardians in difficult situations, etc." TS56 made a similar observation stemming from observations of qualified teachers during in-service practice:

> The qualified teachers have to carry a heavier load than they should. Sometimes, they have to work double duty and cover for each other if there is a complete lack of substitutes. It causes stress if it happens often, and it is easy to feel inadequate.

TS3 stated how the situation also will affect new teachers who have the stamina to do a good job from the start: "Those who have the energy will have an even heavier workload, which can lead to exhaustion, stress and sick leave." This worry about not being able to feel content with one's efforts emerged in several ways, including in "less control over your work situation, more stress, and fewer opportunities to feel satisfied with your work when you are unable to do a good job" (TS33), which are difficult challenges to deal with.

Problematic conditions are also believed to arise with larger groups of students, yet another effect of the teacher shortage:

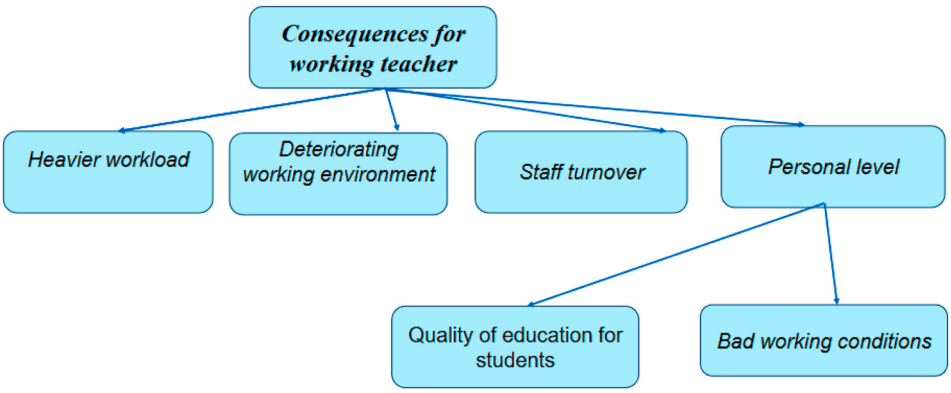

Fig. 1. Student teachers' perceptions of consequences for their forthcoming profession.

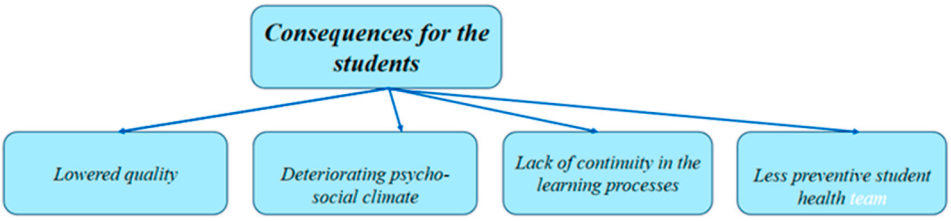

Fig. 2. Student teachers' perceptions of consequences for students.

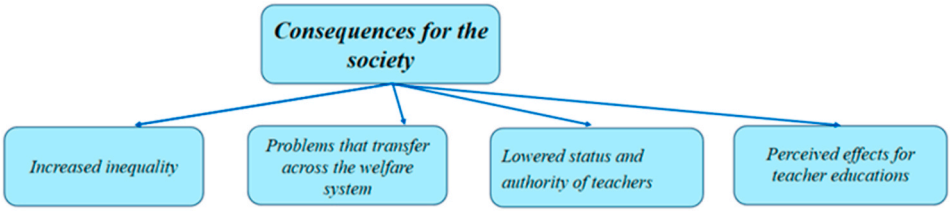

Fig. 3. Student teachers' perceptions of consequences for society.

> Larger groups with more problems cause more workload and stress for the teacher. The teacher is given too little time to do what is expected of him or her in order to achieve high quality education, which can lead to burnout and other stress-related illnesses, which creates a vicious circle. In the end, teachers are unable to cope with the heavy workload caused by a lack of staff. (TS55)

TS16 discussed another consequence of the lack of competent colleagues when one takes on the complex and demanding task of being a teacher: "It becomes more difficult in teams to base activities on earlier research and let the activities rest on a scientific basis and … experience. Status disappears and impossible goals to reach without competent colleagues." Moreover, TS57 stated, "Collegial discussions get fewer, and the quality of the discussions deteriorate."

TS 21 concluded, "There are not enough trained teachers out in the schools. It makes it more difficult to get a team to work towards the steering document and its goals and guidelines," clearly referring to the challenge for new teachers in combining theory and practice.

Taken together, the perceptions of a heavy workload originate from the lack of qualified teachers, with responsibility so certain tasks are handed over to unqualified teachers need to hand over to the qualified ones; larger student groups; lack of control over the work; and the consequences of the lack of competent colleagues in discussions of the scientific basis the teacher profession is meant to lean on.

4.1.2. Deteriorating work environment

The deteriorating work climate is an issue that clearly is linked to the issue of a heavy workload and has far-reaching consequences for the general view of the teacher profession:

> [It is a] tragedy that there is such a work environment problem in many workplaces, with disorder in the classrooms, that the school is not considered an attractive place to work, which leads to … few want[ing] to train as a teacher, as they do not feel it is worth spending the time to attend the education. It is also a pity for the students, who are also affected by staff shortages with large groups and insecurity in school.… Their education does not get the quality they deserve. (TS46)

The issue of large classes and perceptions of consequences of the low teacher–student ratio also affect the perception of teacher workload. TS40 stated, "I'm thinking big classes, big workload, unreasonable working conditions, students who fail due to lack of help."

Several participants linked a heavy workload to a deteriorating work climate for teachers and students. In particular, participants mentioned perceptions of the time teachers spend with their students as a factor clearly affecting the work climate: "Teachers get less time with their students, and then the stress and the pressure to do what you need to do during a school year increase" (TS8). TS66 concluded, "Larger classes lead to more administrative work and less contact with the students, in turn affecting the classroom climate negatively."

The relationship between workload and work climate may be seen as circular, and the relationships between teachers and students is emphasised as a crucial loss when the time to build those relations is

affected: "I feel that teachers want to teach and create relationships with the students, but it's difficult with busy schedules, having a substitute on the planning time, and all the administration" (TS19).

Teacher educators would find TS38's conclusions about the future profession very disturbing:

> I understand the teachers who choose to leave the profession. I have one semester left of my almost 5 years of teacher education, and I already feel that I do not want to work as a teacher in the next few years.

Insecurity, disorderly classrooms, and workloads affect teachers' relationships with students due to lack of time together, increase the difficulty in maintaining the quality of education, and are certainly perceived as problematic by student teachers. TS38 brought up the worst scenario, in which a teacher student is considering leaving the profession before entering it.

The present frequent staff turnover is believed to contribute to a negative working situation and a feeling of insecurity, with work teams being affected by less personal contact, less support for emergent teachers (who describe a feeling of being on their own), and again linking the situation with a heavy workload as a significant factor. TS56 noted "an increased workload and the insecurity of which colleagues you have each year." Staff turnover is above all linked to stress and insecurity in student teachers, which TS14 described as "a concern in everyday life if teachers and substitutes change frequently."

A preschool teacher student was concerned about only being able to provide an education they described as "inconsistent and unstructured education that lacks continuity, risks that education is replaced by child care" (TS18). This is a common worry about the quality of education among future teachers in after-school centres:

> I think that some principals can bring in anyone from the street to work at the after-school centre.… Overall, there are rarely positive tones about school and after-school centres in the media, etcetera, and then the interest in the education falls. (TS73)

This quote exemplifies the concern that the teacher shortage leads to individuals without any formal teacher education being employed as teachers and the consequent questioning of teacher education. The media picture of schools in crisis is perceived as a reason for avoiding the commitment to a teacher education when one can be employed for a while anyway.

Moreover, increased staff turnover is believed to affect salaries as pay gaps develop as a consequence of the effort to attract new, qualified teachers to schools. A strategy to increase one's salary is to change schools, thus contributing to staff turnover, with effects beyond the working environment for teachers and students: "When you as a new teacher get a higher salary than those who have worked for many years in the same school … of course conflicts are generated between 'us' and 'them.'" (TS45)

Lack of continuity, an insecure working situation, lack of quality in education. and conflicts due to higher salaries for new teachers are the commonly mentioned main negative effects of staff turnover, which is a consequence of the teacher shortage.

4.1.3. Personal consequences

Student teachers cited perceived future personal consequences as something they worry about: "I am concerned about the education and future of all our children" (TS51). Worries about children emerge in multiple quotes. For example, TS62 stated, "I'm disappointed. I get worried about the future. Will my children meet competent staff? Will my future colleagues always rely on me as a qualified teacher? How has it come to this?" Similarly, TS6 stated, "I think about my own children, my future profession as a teacher, and the children who are actually our future."

The perceptions of tentative working conditions that the participants described spill over to worries about how their health and family life may be affected: "I fear burnout and a feeling of not being able to do enough, depression … a greater workload than paid working hours, which leads to unpaid overtime, stress, possible problems in leisure time and family life, risk of sick leave" (TS44). Teachers' private lives and families are believed to be affected by the present situation, something to pay attention to if teacher attrition is to be reduced.

4.2. Perceived consequences for students

The second research question concerns the student teachers' perceptions of the consequences for students. From this, four subthemes emerged: decreased quality of education, deteriorating psychosocial climate, lack of continuity in learning, and less preventive work for student health.

4.2.1. Decreased quality of education

Evidently, the student teachers see serious consequences for the students, originating from the shortage of teachers:

> Lack of qualified teachers leads to poor quality of education, which leads to children who do not have the skills they need or the security that a good teacher entails … for the classroom climate but also for knowing that they have the knowledge they need. I taught a girl who in year 3, upper secondary school, never had calculated the square root because her teacher in her previous school had skipped that so more students could pass. (TS25)

Many participants cited concerns about the quality of education. For example, TS70 stated, "[The] teacher shortage leads to larger classes with less time for each student, and the quality of the education that the students are entitled to will not hold the standard." The teacher shortage also effects equality in students' conditions for successful schooling: "Students and children in preschool don't get the opportunities for learning and the possibilities to develop that they are entitled to" (TS38). Many participants expressed concern about not only the quality of education but also the conditions for learning and being in school.

4.2.2. Deteriorating psychosocial climate in the classroom

Perceptions of a deteriorating psychosocial climate as a consequence of the teacher shortage are frequent in the student teachers' open-ended answers: "A lack of well-informed teachers heavily affects security and well-being in the classroom.… The students risk insecure schooling when the classroom climate is not systematically analysed and improved" (TS2).

Lack of time and energy is also believed to affect the classroom: "Overworked teachers … neither have the time nor the possibility to see what is happening in the classroom and take action. Mobbing may increase" (TS39). Multiple participants elaborated on this theme. For example, TS61 stated,

> The shortage of teachers affects the safety at the school, as the teachers do not have the time or energy to work with basic values or promote a good culture at the school. If the educators are not trained in this area, there is a risk that the work will be neglected even more due to lack of knowledge. This, in turn, can lead to pupils feeling bad, being subjected to bullying or abusive treatment, or feeling bad due to the insecurity they experience.

Moreover, TS52 stated, "I believe that more and more children and pupils are experiencing problems with their well-being, and that may have to do with the lack of teachers in the main."

Several alarming reports have shown that many students experience problems with their well-being. The reasons for this may vary and are debated. However, we see that the student teachers are clearly convinced that teacher shortage does not improve the conditions.

4.2.3. Lack of continuity in the learning processes

Participants commented on staff turnover's effects on students'

learning and well-being. Similar phenomena are perceived as those that affect the teachers' situation: "[There is] lower quality in the education that children get, as substitute[e] teachers do not have the necessary background knowledge about the students, and the students' education will contain gaps" (TS 64). As indicated above, changes in personnel are believed to affect the psychosocial climate. For example, TS53 stated, "Having new teachers come and go make the children feel uncomfortable, thus also affecting the learning climate."

The student teachers believe that the insecurity that is linked to the constant change of teachers brings about feelings of insecurity among the students: "There will be uncertainty because if you have untrained staff, the school has to look for qualified staff every semester, and they are never guaranteed that the people who are with the students are still there the next semester" (TS 23).

Students' worries about who will be their new teacher as well as the resulting discontinuity in the learning processes due to changes in personnel are crucial issues, according to the student teachers. However, the student health team's efficiency is also believed to be affected by the teacher shortage and staff turnover.

4.2.4. Less preventive work from the student health team

In a school context affected by lack of teachers, the use of substitute teachers, and staff turnover, student teachers believe the students in need of help are perceived as those who fall short: "All students that need help can't get it, as [the] teacher shortage also means a shortage of time for the working teachers.… Individual needs are not met or seen" (TS35).

One aspect that is commented on is the difficulties unqualified teachers face in knowing how to handle learning problems: "If you are not a qualified teacher, you do not have the tools to support children in need.… The students thus risk failure in school" (TS2).

These problematic situations are perceived as related to a lack of interventions by the school health team: "Substitut[e] teachers are less likely to the detect potential problems a child may have [due to] the seldom contact the student health team, perhaps because they do not know whom to contact. More children … go under the radar" (TS4).

The effects are perceived as severe and far-reaching: "Students who are in need of special support and do not get that will lack the tools for their lifelong learning with severe consequences for their future lives" (TS62). TS68 explained this problem in more detail:

> The screening of students becomes vulnerable if you cannot cooperate with the subject teachers. The student health service has to be solely responsible for follow-up, evaluation, etc. There is a great risk that students will fall between the cracks if difficulties are not noticed in the classroom.

To sum up, opportunities for efficient cooperation between teachers and the school health team are perceived as exacerbating the already demanding situation students in need of extra support are in due to the lack of qualified teachers, too large groups of students, and staff turnover.

4.3. Perceived consequences for society

In the analysis of the third research question, which concerns the student teachers' perceptions of the consequences for society, four themes emerged: increased inequality, problems for welfare system, decreased status for teachers, and consequences for teacher education.

4.3.1. Increased inequality

Increased inequality is a perception that concerns students and society at large. When asked about the consequences at the society level, TS46 simply wrote, "lack of equity in students' education," thus summarizing many similar comments. The consequences of decreased quality of education is perceived as far-reaching, with extensive consequences, including "poorer knowledge among the general population, reduced productivity and reduced innovative power, fewer people able to complete higher education, [and] more people who become long-term unemployed". (TS66)

Also, societal values that keep society together are perceived as being threatened due to the lack of qualified teachers in the schools: "Society and its value system can be seriously affected if good teachers do not succeed in conveying the values and principles that the Swedish school system wants us to convey". (TS25)

Moreover, when students do not know the values of a democratic society, they may forfeit their rights. Specifically, TS22 stated, "In the long run, it is about democracy and the fact that people cannot work in and use their rights in society."

4.3.2. Problems that transfer across the welfare system

Some student teachers believe failing schools and continued shortages of educated personnel may affect the whole welfare system:

> Catastrophe. This means that today's children and young people do not get the tools, knowledge, etc. that are needed. Without good grades, they will not be able to progress in any education. Will there be a shortage of more professions in the long run? (TS43)

Students who feel that they fail to meet academic the requirements may be unable to enter the labour market. Along these lines, TS61 cited "mental illness among pupils who do not reach the goals [and] exclusion, as upper secondary school grades are important for getting a job." TS29 cited the problem of "teachers on sick leave because of their working situation."

One teacher student gave the following gloomy picture of the future:

> This situation may have very serious consequences. On the one hand, there is a lack of knowledge among staff if a large proportion of pupils leave school with a lack of knowledge, but mainly … mental illness and failure in school … lead to exclusion, drug abuse, crime, etc. School is the foundation of a good life, and if it does not work, it can have catastrophic consequences … individually but also for society as a whole, with exclusion, increased gaps, and an increased proportion of people with mental and physical illness. (TS11)

TS36 briefly summarised the student teachers' fear of far-reaching consequences of a failing school system, claiming that "school is a catalyst, a motor in the society. If not so longer is …" (TS36) Our interpretation of this quote is that T4 means that a non-functioning school means that the whole society is at risk of collapse.

4.3.3. Teachers' decreased status and authority

TS60 stated that they perceived an overall changing school climate, not only as a result of teacher shortage but more as a result of a changing cultural climate:

> The climate in the schools is too harsh. There are taunts and attacks. As a teacher, you are toothless and cannot resort to anything to get the students' interest if they refuse. That a student refuses or simply leaves the classroom was unthinkable 15–20 years ago, but today, it is commonplace. As a teacher, there's nothing you can do about it.

A thin line separates authority from status, according to TS5:

> There has been a shift towards it being the teacher's fault if students fail regardless of the attitude of the students, regardless of the fact that the previous stage did not prepare the students sufficiently (on the other hand, it gave happy grades), regardless of conditions such as large differences between the students' prior knowledge, class size, time set aside for pre- and postwork. You can't get a Ferrari if you pay for a Skoda. There is talk about status, but it is not gratitude that the teaching profession needs. Teachers need prerequisites to do a good job.

TS68 linked teachers' difficult situation with questioned authority and low status to the current situation of strengthened state control:

"The present scrutiny of the school, with recurring evaluations, creates a sense of rejection of the profession [and] teacher autonomy."

Certainly, a lack of qualified teachers does not improve the situation.

4.3.4. Perceived effects on teacher education

A critical issue regarding the teacher shortage is the recruitment of students to teacher education. Application numbers are falling across Swedish universities. The student teachers who provided answers and shared their perceptions in the survey mentioned the teacher shortage's effects on teacher education:

> Long-term staff shortages and a deteriorating work environment lower the status, which makes the teacher training programs less attractive, which lowers the demands on those who apply to the teacher program, which in turn increases the proportion who do not have enough … abilities to attend the program, which in turn makes students drop out. (TS25)

In school-age educare centres, unqualified teachers are common because the shortage of educated teachers often results in employment of individuals without any formal education training:

> For the school-age educare centre, I think that some principals can bring in anyone from the street to work at the after-school centre. Then there is no plan to become qualified if you take the opportunity to [work in] after-school care. More investment in training existing staff should be available to every municipality. Overall, there are rarely positive tones about school and after-school centres in the media, etc. Then the interest in education falls. (TS70)

Students teachers believe that a negative media picture contributes to reluctance to pursue teacher education. For example, TS32 stated, "This picture of the stressful teacher profession will certainly lead to even fewer applicants to the teacher educations/ … /All you read about schools. Terrible descriptions. Who wants to be a teacher?" How teacher educators communicate the gratification and joy in teaching is evidently important, but the issue is more far-reaching than that:

> I believe that in order to attract more people to want to become teachers, a lot needs to be done on many levels. There is [no] simple solution such as "more salary for teachers," but … there is a need for structural work where the work environment is improved for everyone in the workplace, for staff and students, so that the school becomes a place that is remembered with joy. The political climate also needs to be reviewed. I do not see privatization and profit margins in schools as something positive, but I see it as a symptom of the fact that the many public schools suffer from deficiencies. (TS28)

Attracting new student teachers to teacher education keeping new teachers in the profession are crucial issues that we discuss in the following section.

5. Discussion

The teacher shortage is severe almost everywhere around the world, including Sweden. It is a very complex problem in micro- and macro-sociological contexts (Bronfenbrenner, 1997). Global and national structures interact with regional and institutional structures. Teachers' individual interactions and actions also affect and are affected by the course of events. Changing societal steering models, continuous reforms, the decreased status of teachers, and changing work conditions interact together with the media's depiction of the teaching profession with negative connotations (Blanco et al., 2023). Teacher practices and structural factors create an intricate web of factors, in which no quick solutions are to be found, creating what is referred to as a "wicked problem" (Berglund & Bostedt, 2023), in which the analysis of conclusions only can lead to actions based on overall analyses.

International research has focused on various actors' perspectives on the teacher shortage (cf. Andersen et al., 2022; Author 1, 2023; Author 1, 2024; Kreienbaum, 2022), but research has not been conducted to explain how those who are the future of schools, namely the student teachers, perceive the situation. Only Amundsen et al. (2021) has touched on student teachers and the teacher shortage. We drew our findings from a web survey completed by 75 student teachers in Sweden, with a focus on how they believe the teacher shortage can affect their future work, students, and society. The student teachers describe as a bleak future, and we highlight the importance of addressing the problem in teacher training education.

5.1. Deteriorated professional conditions

The student teachers believe that the teacher shortage will affect working conditions, specifically workload, work environment, staff turnover, and personal consequences. None of this is new; it has emerged in previous research on various professional groups (cf. Andersen et al., 2022; Author 1, 2023; Berglund & Bostedt, 2023) and countries (cf. Australian Government, 2022; Federičová, 2020; Garc ía & Weiss, 2020; See & Gerold, 2022; Sutcher et al., 2019). The fact that student teachers see problems and challenges in the future profession is worrying.

We asked two questions: Will the student teachers complete their training, and will they remain in the profession or drop out and thus contribute to an ever-increasing shortage? The first question is relevant in the Nordic countries because the number of applications to teacher training courses is decreasing and dropouts are relatively high (Fahlen, 2024).

With future prospects that are more challenging than uplifting, many teacher education students will likely opt out of the teaching profession or give up on education. The second question, whether teachers will remain in the profession, is also worrying because in Sweden, 25% of newly trained teachers leave the profession within 5 years the Statistics Sweden (SCB, 2022).

It is common for social media to advertise teacher studies, but efforts to attract teachers to the profession through various media campaigns fall short. The teacher shortage must instead be addressed on a broad front through, for example, a social contract with important actors (Author 1 et al., 2022). As indicated above, large-scale analyses are needed to address the problems, and stakeholders, politicians, and representatives from regional institutions and local actors must make joint efforts to improve several levels of the societal structure.

5.2. Impact on students' daily lives

With great clarity, student teachers see problems for students in schools due to the teacher shortage. Student teachers emphasise that the teacher shortage leads to reduced quality of teaching and learning, a deteriorating psychosocial climate in schools, and reduced preventive student health work. Similar points of view have also emerged in research on other school actors (Author 1, 2023). This is alarming. If student teachers believe they cannot create good learning conditions for students, how will they find motivation to complete teacher training and stay in the profession? The number of becoming teachers with the knowledge that the quality of teaching is gradually declining is not a dream scenario for prospective teachers. Even in this case, we believe that a broad consensus on the understanding of the teacher shortage is important to address. Letting student teachers face transition barriers early in their education may, according to Amundsen et al. (2021), enhance new teachers' well-being and resilience. For students, school is the most important protective factor to prevent exclusion, crime, abuse, and ill health. The Swedish government is currently investing in resources to improve schools under the theme "the school as a protective factor" (Regeringen, 2023). Unfortunately, there is no mention of teaching quality or the need for trained teachers in that investment.

5.3. A societal problem of far-reaching proportions

The student teachers' perceptions of the teacher shortage's effects on society significantly point to several problematic areas: increased inequality, negative impact on the welfare system, decreased status for teachers, and negative implications for teacher education. The student teachers are far-sighted and see how the teacher shortage can affect the foundations of our entire welfare system and our pursuit of school for all. In a macrosociological context (Bronfenbrenner, 1997), it is, again, worth noting that international organizations, such as the UN (2023), UNESCO (2016, 2023, 2024), and Save the Children (2024) emphasise the importance of effective schooling for all children and trained teachers. Specifically, per the UN's global goal of an effective education for everyone, we should ensure inclusive and equal education of high quality and promote lifelong learning for everyone. Student teachers are trained in, among other areas, sustainable development. The question is what happens in their minds when the idealistic global goals meet grim reality in classrooms?

6. Conclusions

We need to equip emergent teachers with adequate tools so they can manage their situation. This includes demands on teacher educators to ensure high quality of teacher educations and supportive systems when they enter the profession as new teachers.

The origins of the perceptions of the teacher shortage and the teaching profession that are reflected in the student teachers' quotes are not totally known to us. We see that some perceptions originate from real-life experiences in schools and preschools. However, media depictions also influence student teachers, and positive images are seldom presented. Instead, negative articles or feeds in social media tend to dominate public descriptions of schools (Edling & Liljestrand, 2019; Zaremba, 2011). Such depictions stem from the severe teacher shortage in Sweden. Student teachers' perceptions of this teacher shortage highlight important aspects of school life that need attention in the near future if attrition rates among teachers are to be improved.

Education is a human right, a driver of development, and an instrument for reducing poverty and improving health, gender equality, peace, and stability. Education drives long-term economic growth, spurs innovation, and fosters social cohesion. As one of the interviewed student teachers wrote, "School is a catalyst, a motor in the society." A question that lingers is … what if so no longer is"?

When it comes to the teacher shortage in Sweden, there are no simple or obvious solutions. We agree with Berglund and Bostedt (2023) conclusion that the teacher shortage is a "wicked problem". If it is to be solved, it must first be understood in a broad perspective. Student teachers' perceptions of the current situation to their understanding add important information to teacher educators, and schools receiving teacher students, about what is needed to equip new teachers with tools to handle situations in the classroom and arrange a supportive environment to enhance student teachers' professional growth and self-confidence. Similar to Author 1 et al., (2022), we believe that there is a need for so-called social contracts where relevant actors come together on a broad front to deal with the problem. Regarding teacher training specifically, we believe that every university should maintain a high quality of education that provides good professional knowledge and didactic competence for prospective teachers. Giving newly qualified teachers a good introduction to their first teaching job as well as providing them with a mentoring program is also essential to getting them to stay in the profession.

As our study is limited when it comes to sample size, larger studies are needed to make results more generalizable. Another limitation is the fact that male students are underrepresented, and inclusion of other programs would add to the validity of the study. Both inductive and deductive models for analysis may provide tools to view the problem from different angles. International comparative studies may also provide import insights to learn from. How distance education may employ new technological tools, such as AI, is evidently also an important field for future research, to attract students to teacher educations and help them to successfully complete their studies.

CRediT authorship contribution statement

Ulla Damber: Writing – review & editing, Writing – original draft. **Lena Boström:** Writing – review & editing, Writing – original draft.

Declaration of competing interest

No conflicting Interests to declare.

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