Professional development in teacher education:

(Vocational) teacher students' descriptions

Hamid Asghari (iD), Nina Kilbrink (iD), Anders E. Johansson (iD)
Karlstad University, Sweden
Contact: hamid.asghari@kau.se

Abstract

This article focuses on a learning objective, as part of a teacher education course at a Swedish university, where student teachers should be able to discuss their own professional development and identify further development needs. Since both research and policy documents highlight professional development as an important part of teacher education, it is important to study professional development from the perspective of student teachers. The theoretical starting point is Communities of Practice (CoP), and the study focuses on knowledge and learning within a social community. Ten subject teacher students and six vocational teacher students are interviewed about their descriptions of *what the professional development for teachers in teacher education means for them*, which results in six prominent themes: 1) *the development of identity formation*, 2) *the development of subject specific and vocational knowledge*, 3) *the development of leadership*, 4) *the development of relationship-building*, 5) *the development of knowledge about policy documents, laws, rules and regulations*, 6) *the development in relation to changes in the society*.

Despite common denominators in the students' descriptions of professional development, there are also nuanced differences that can be understood by positioning actors about the *(vocational) teacher education community*. The vocational teacher students frequently connect their professional knowledge to industry and working life, whereas the subject teacher students often connect their subject knowledge to university courses and research. Both the vocational teacher students and the subject teacher students in the study describe that they need to stay up-to-date and continue developing their competence in pedagogy. However, the vocational teacher students specifically highlight the need for pedagogical knowledge within the school environment, rather than in the context of working life and workshop settings. This may be because some vocational teacher students are accustomed to training and teaching interns in these environments as part of their professional practice.

Keywords: Professional development, (vocational) teacher education, Communities of Practice (CoP), interview study

Introduction

This article focuses on a learning objective, as part of a teacher education course at a Swedish university, where student teachers should be able to discuss their own professional development and identify further development needs. Since both research and policy documents highlight professional development as an important part of teacher education, it is important to study professional development from the perspective of student teachers. The article involves interviews with ten subject teacher students and six vocational teacher students about their descriptions of *professional development for teachers in teacher education*. Vocational teacher students are those who, after completing their education, will teach vocational pupils at upper secondary schools aiming for professions such as welder, carpenter, hairdresser, assistant nurse, etc. Subject teacher students, on the other hand, are those who intend to teach subjects like Mathematics, Swedish, English, History, and so on. Since the term student is used for both those who study at university level and those who study at upper secondary schools, in this study, we used the term student for those who study at university and the term pupil for those who study at upper secondary schools, as a way of structuring what the students say and what is said about their pupils.

We also follow Wenger et al. (2002) and Hart et al. (2013) and consider CoP as a social theory of knowledge and learning, where the actors in a *teacher education community* contribute knowledge and learning through action or doing in a social system, interacting with each other as a process of active social participation. In the teacher education community, various actors such as school politicians, students, researchers, teacher educators at universities and placement schools, teaching teams, school management, industries, and industry organisations interact in research and practice. However, this study focuses solely on (vocational) teacher students and their descriptions of professional development for teachers in teacher education. Professional development is a crucial aspect of teacher education and can be viewed from multiple perspectives. When different actors interact, diverse views on what professional development entails emerge. The (vocational) teacher students engage with principals and teacher educators at their placement schools, university lecturers and researchers, and fellow teacher students. Through these interactions, they gain valuable insights into the professional development within their specific teaching areas.

The research method in this study is based on narrative research, focusing on segments consisting of quotes from interviews with students' narratives of their professional development within teacher education. These segments are referred to as *descriptions*, based on Riessman (1994). By using interviews to explore student teachers' descriptions of professional development, we can identify subtle differences that arise despite the shared context of belonging to the profession (cf. Goodson & Lindblad, 2011). The narrative interviews enable an in-depth exploration of the students' experiences of the professional development and provide rich qualitative research data that is co-constructed with us, the researchers, who have both interviewed the student teachers and analysed their descriptions (cf. Goodson & Lindblad, 2011; Pérez Prieto, 2006). In line with Mishler (1999, p. 15), the term "emerge" is used because during narrative analysis, various interpretations are considered, where themes may not be explicitly sought within the narratives themselves but rather within the broader context in which the narratives are created.

Despite the shared status of subject teacher students and vocational teacher students as student teachers, there are differences based on their professional background. For example, while most former students secure vocational teaching positions, opportunities for competence development and expanded vocational subject competence vary (cf. Antera et al., 2022; Asghari & Berglund, 2020). Additionally, in the Swedish school system, teacher certification is required for subject teachers applying for teaching positions, but not for vocational teachers (Asghari & Berglund, 2020). The introduction of the teacher certification system for subject teachers has been crucial in ensuring equal access to subject teaching competencies in schools (Åstrand, 2023). However, it does not seem necessarily applicable when considering equal access to vocational subject teaching competencies in vocational schools. An additional crucial aspect of this study is recognising that individuals are not blank slates; they bring with them life experiences and professional backgrounds that shape their ontological perspectives and worldviews (Andrews, 2007; Bamberg, 2004; Freeman, 2015). By studying both groups, we may gain insights into their descriptions of professional development. Thus, in relation to the research problem, the purpose of this study is to contribute knowledge about the professional development for teachers in teacher education within the framework of Communities of Practice (CoP) based on the vocational and subject teacher students' descriptions. In relation to the purpose, the following question is formulated:

> What themes about the professional development for teachers in teacher education emerge from the students' descriptions of their teacher education and their future teaching profession?

Previous research on teachers' professional development

Professional development for (vocational) teachers includes the situated and developing nature of the teachers and their range of action, such as communicating with pupils, supporting those needing extra help, and assessing knowledge and skills (Antera, 2023). Also included in teachers' professional development are subject knowledge, pedagogical expertise, and teaching experience (Shulman, 1986), as well as scientific knowledge, teaching language, codes of professional ethics, autonomy and status (Colnerud & Granström, 2002; Hattie, 2012). Vocational teachers' prior professional experiences contribute to high-quality vocational education (Fejes & Köpsén, 2014). Based on Hattie (2009, 2012), the professional teachers have gained experience to be able to assess their teaching style and teaching content in relation to pupils' learning. Building good teacher-pupil relationships is crucial (Aspelin, 2023), impacting scientific and social-emotional learning (Aspelin & Eklöf, 2023). Interactions with students' parents also reflect professionalism (Hargreaves, 2000).

Teacher leadership, as part of teaching professionalism, is discussed by Hargreaves (1994) who describes about teachers as leaders in the classroom and partly about teachers as controlled by teacher collegiality and school leaders. In our study, such an argument means that teachers in the teacher education community can be seen as professionals who both lead the community and are led by other members of the community. According to Hargreaves (2000), teachers'

leadership includes a genuine relationship with pupils and their parents, colleagues and school leaders, where openness and mutual respect as well as pupils' learning are in focus. In teachers' professional development, professional language and ethics are also involved (Colnerud & Granström, 2015). All teachers have access to some form of professional language and professional ethics, but the working conditions often constitute an obstacle to the development of their profession. Teachers' working conditions often prevent them from identifying and assisting all students who require diverse learning support (Colnerud & Granström, 2015).

A profession is a monopolisation of opportunities on the service or labour market and a monopoly on status and work privileges in a professional hierarchy (Abbott, 1981), or as Stenlås (2011) writes, the profession is science-based when the professional obtains an expertise that makes him or her unique and irreplaceable. Professions constitute an autonomous social system where a group of professionals has been granted exclusive right to enter the industry through specialised training and lays claim to a professional field (Abbott, 2014). Consequently, professional development for (vocational) teachers is defined when teachers, with their teacher education, teacher's degree, and teacher's credentials, lay claim to what teaching and learning can entail. Based on Gillberg et al. (2021), this article assumes that the professional development for teachers changes in step with social change, and different teacher identities emerge among teachers within the teacher education community as a result of such changes. Identity formation is part of teachers' professional development, according to Goodson and Hargreaves (2003). Teachers' profession is context-bound and changes through the interaction between the teacher, the teaching team, and the environment. The profession includes the ability to integrate different teaching subjects with regard to the goals and tasks of the education system and the school, and to see the connections between these skills from different perspectives (Andersson & Köpsén, 2019; Goodson & Hargreaves, 2003). This ability develops in step with the teachers' professional experience of the teaching, which in turn endows the teachers with teacher identities (Goodson & Hargreaves, 2003). Vocational teachers' identity formation also applies to their identity as professional practitioners. In a community, identity can become an important motivational factor and a reason for group members to remain in the community (Gillberg et al., 2021), and this can also apply to the teacher education community.

The profession of vocational teachers includes vocational competence and teaching competence. In Sweden, teaching competence is not a formal requirement while professional competence is considered important by the school management for the employment of vocational teachers (Antera, 2023). The professional competence and the form of employment can be important for how the vocational teachers identify themselves as professionals or as vocational teachers (Antera, 2023). The teacher-pupil relationship is seen as a social bond that constantly changes in the interaction. The professional teacher-pupil relationship includes the ability to grasp the distinction between personal and professional relationships, and carefully interpret thoughts, feelings, and intentions that are created in the interaction (Antera, 2023). Social relationships, which are built over a longer period of time in the interaction between teacher and pupils, are related by Goodson and Lindblad (2011) to teachers' professional leadership in teaching. Teacher-pupil relationships are also considered by Aspelin et al. (2021) as fundamental to pupils learning. In the social relationship, conditions are created for pupils' learning where they are allowed to ask critical questions about the content of the subject,

discuss the subject teaching and the content of the teaching with the teachers, reflect on the conversations with the teachers, and become critical thinkers (Aspelin et al., 2021; Goodson & Lindblad, 2011).

Communities of Practice as a theoretical approach

The theoretical starting point of the study is based on Lave and Wenger's (1991) Communities of Practice (CoP), which designates activities with consensus on basic views, attitudes, values, etc. According to Lave and Wenger, a CoP consists of people who learn and develop together in a common area of interest. Community participants regularly collaborate to share information, improve skills, and deepen their knowledge of the subject (Lave & Wenger, 1991). Social interactions between participants also contribute to the reproduction of class (Auðardóttir, 2022). Based on Wenger et al. (2002), participation is related to a person's involvement in the community. Wenger (2007) writes that participation can occur without the goal of full acceptance and recognition. Instead, new members take a peripheral position, sharing knowledge, experience, attitudes, and values, which changes and reforms the community. Participation creates status and legitimacy for members to change the community, such as writing laws, creating procedures, or making tools. Based on Wenger (2007), it is suggested that members of the teacher education community, represented in this study by student teachers, gain legitimacy to change and reform society, create meaning regarding teachers' professional development, and describe what development is necessary.

The CoP is the most versatile and dynamic knowledge resource of the group and it forms the basis for an organisational ability to know and learn (Wenger, 1998). CoP, which aims to explain the social interaction necessary for learning (Lave & Wenger, 1991), consists of four components: community, practice, meaning, and identity. Knowledge and learning are constructed in a social process of participation (Wenger, 1998). Practice includes meaning-making processes, activities, and social relationships, and makes knowledge and learning possible. Practice also includes a performance in a historical and social context that gives structure and meaning to what the participants do, and each participant identifies with both the activity and other participants (Lave & Wenger, 1991). The identities that the participants create are also expressed in their actions in the community (Wenger et al., 2002). The continuous identity constructions are central to the community and the participants identify themselves in different ways in step with the changes that take place in the community (Wenger, 1998; Wenger et al., 2002). Meaning involves *participation* and *reification*, fundamental to human experience and learning (Wenger, 1998). Participation is a complex process that combines doing, talking, thinking, feeling, and belonging (Wenger, 1998, p. 56). Participation is an active process that provides the opportunity for mutual recognition and includes our whole person, body, soul, emotions, and social relations (Lave & Wenger, 1991). Reification means the transformation of someone or something abstract into a thing and an object. The participants in a community reify by depicting and reproducing their interests in the world and then perceive the depiction and what they are interested in as something that exists in the world (Wenger, 1998).

Community formation is influenced by power, participation, and borderlands between different CoPs (Hart et al., 2013). Power relations are temporary and changeable. The mutual recognition partly coincides with the ideas of disciplinary power as the individual (the member of a community) decides to follow the norms that have been set (Wenger, 1998). Due to the power imbalance between the participants with different forms of knowledge and different social positions in a community, it is important to build trust before the work starts (Hart et al., 2013). Participation includes all kinds of relationships, such as conflictual, harmonious, confidential, political, competitive, and cooperative. Participation, as a component of the concept of meaning, extends beyond mere engagement. It cannot be switched on or off; rather, it is intrinsic to an individual's identity. Within the teacher education community, members act as bridges, connecting their past life experiences, experiences from teacher education, and experiences from their teaching profession with the community (cf. Fejes & Köpsén, 2014). In that way, participation forms part of an individual's identity (Wenger, 1998). Participation becomes an integral part of who they are. Additionally, the border landscape of participation includes intersections between diverse domains. In groups where individuals have different competencies, it is an advantage if there are so-called border walkers, a designation for individuals who belong in several worlds, and who can move between them. They can construct and reconstruct negotiations in the community by interpreting and understanding the different views, attitudes, and values of the participants. Moving in the boundary landscape is important because that is where learning takes place (Wenger, 1998).

Narrative research as a methodological approach

We conducted narrative individual interviews with six vocational teacher students and ten subject teacher students. The semi-structured interview questions focused on the importance of ongoing learning for student teachers, the role of the curriculum in shaping their growth, and the continuous development in the careers of future qualified teachers. The online interviews, conducted via Zoom, lasted 45-60 minutes and were recorded for transcription. The transcribed material was anonymised and analysed. Based on Riessman (1994) and in line with the constructionist approach of the analysis, where the researcher's role is important, we selected *descriptions* from the interview material where professional development for teachers in teacher education had been prominent.

Student teachers reflect on their own experiences of teacher education and the profession, and create meaning about what they consider important for their own professional development. However, this meaning-making occurs in interaction with us researchers who interviewed them (cf. Goodson & Hargreaves, 2003; Pérez Prieto, 2006). Their descriptions can also reveal a larger reality about the roles of different actors in various responsibilities within the teacher education community (cf. Hart et al., 2013; Wenger et al., 2002). Teachers also function as mentors, inspirers, and collaborators with other teachers, parents, and the wider community (cf. Eriksen et al., 2024). Regarding the roles of different actors in various responsibilities, these include teaching and guiding students, developing curricula, assessing and evaluating students' performance, managing the classroom environment, and continuously developing their own professional skills.

Analysis of the interview material

The interview material has been analysed thematically, a common approach in qualitative studies according to Riessman (1994). Thematic analysis involves paying attention to repetitions, metaphors, transitions, similarities, differences, and linguistic connections in the data (Riessman, 1994). Based on Riessman's (1994, 2008) theory of narrative analysis, a theme can be discovered by comparing different descriptions within the same narrative or across different narratives, where some descriptions are repeated.

In our thematic analysis, we read the student teachers' narratives multiple times and coded the recurring descriptions both within individual narratives and across several students' narratives (cf. Riessman, 2008). Following Riessman (2008), we identified key questions, similarities, and deviations that recur in the descriptions of professional development for teachers in teacher education. In this identification process, we also referred to Scott et al. (2023) and specified the central characteristics of student teachers' descriptions. With these central characteristics, the focus has been on the student teachers' descriptions and critical reflections on teacher education (including placement schools) and the teaching profession, as well as their ideas about professional development in teacher education. These findings were linked to theoretical literature on the teaching profession to understand narratives of the professional development for (vocational) teachers and to formulate themes (cf. Riessman, 2008).

Ethical Considerations

The research project has been reviewed by ethics advisors and registered by the faculty administrator at our university. In the research process we have relied on the Swedish Research Council (2017). We informed the students about the research project through an information letter. In the information letter, we also wrote that the students' participation in the research project was voluntary and that they had the right to cancel their participation in the project whenever they wanted without explaining to us the reason for dropping out. After that, there were six vocational teacher students and ten subject teacher students willing to participate in our study and be interviewed by us. The interviews were conducted in Swedish and have been translated into English. Based on an ethical approach, the interview material is de-identified, and the students' (vocational) teaching subjects have also been changed so that they are not recognised by their course mates at the university and their teachers.

Results

Six themes about professional development emerge from the interview materials. In thematic analysis, researchers endeavour to distinguish themes from one another, despite their frequent overlap and the presence of descriptions that contribute to multiple themes (Riessman, 1994). Essentially, the researcher invariably interprets the descriptions during the process of thematisation. Nevertheless, we aimed to stay close to the descriptions and remain as faithful as possible to the original descriptions to enhance the clarity of theme selection for the reader (cf. Riessman, 1994, 2008). The prominent themes are: 1) *the development of identity formation*, 2) *the development of subject specific and vocational knowledge*, 3) *the development of leadership*, 4) *the development of relationship-building*, 5) *the development of knowledge about policy documents,*

laws, rules and regulations, 6) *the development in relation to changes in the society*. In the following, we present a number of descriptions from the students to illustrate each theme.

Development of identity formation

In some descriptions, vocational teacher students or subject teacher students identify themselves as current or future teachers. In these descriptions, the teacher's identity is strongly linked to their teaching subject. For example, "I will become a science and math teacher" or "I'm not a teacher yet, but when I become a history teacher I will…". These students relate the creation of identity as a teacher to the teaching degree and/or to their completed teacher education. There are also descriptions where subject teacher students identify themselves as teachers already, and they relate the teacher identity to their teaching subject. For example, a subject teacher student says: "So, I see myself as a teacher of religion. My pupils also see me as a teacher of religion. So, I am a teacher of religion". However, among the vocational teacher students, we find no descriptions where they identify themselves as vocational teachers or future vocational teachers. Vocational teacher students identify themselves above all as professionals. There seems to be a need to create conditions for the vocational teacher students to develop in their identity formation as vocational teachers. For example, one vocational teacher student says:

> I think professional development, if you want to talk about being a teacher, [but] I'm not a teacher, I'm a hairdresser, or what we say, there's a lot of new things with [the teaching profession], everything from pupils and tests and assessments and stuff. [...] and then I think, I have to train to become a teacher, so it has to do with my skills. […] I know my profession, I know hairdressing, so when I'm at work [at a hairdressing salon], I know everything, but when I'm in placement school, it's not like that.

However, among the subject teacher students' descriptions, we have not found any description where subject teacher students only identify themselves with their teaching subject, for example saying that they are mathematicians, linguists, biologists, or chemists.

Development of subject specific and vocational knowledge

Unlike the first theme, the student teachers in this theme do not speak as strongly about themselves as (future) teachers. Instead, the focus is on (vocational) subjects such as mathematics, biology, mechanics, carpentry, as well as pedagogy and teaching methods, which they mention they need development in. A subject teacher student says:

> I think that the subject knowledge that I came in with [in the teacher education], now that I'm training to be a teacher, I have to constantly keep it up to date and continue to develop the pedagogy in order to, I feel like I have a fairly broad and deep subject knowledge in my field, but I have to constantly continue to develop it.

Since subject teacher students have studied their teaching subjects at university, they link their subject knowledge development to university courses and/or the research done in their subjects. In contrast, the vocational teacher students relate their subject knowledge development to the

industry and learning in the workplace. An example of this difference is a description from a subject teacher student who says: "I have thought that I will take a course [within my subject] at an advanced level at a distance at the university to develop myself even more in my teaching subject", and a vocational teacher student who says:

> As a car mechanic, I want to develop in my profession because cars are constantly evolving, there are a lot of changes in technology, so I have to keep my knowledge at a reasonable level to be able to teach them. […] I would like to have continued contact with my [former] job so that I don't lose my professional knowledge when I work as a vocational teacher. […] The pedagogy itself isn't a problem for me. It is part of the work a car mechanic to take care of interns, but I have to improve how the pupils [at school] should learn certain skills more pedagogically. […] Previously I had an intern from the third grade in February with us […] and you learn how pedagogical you have to be in order for them to learn [the tasks of a car mechanic].

Vocational teacher students' experiences of teaching the profession to interns in the internship workplace can be used in their work as vocational teachers when they teach and meet the vocational pupils. The development of pedagogical knowledge in relation to the knowledge that the pupil must learn in the school environment also seems to be urgent. Teachers' scientific subject knowledge and pedagogical knowledge are included in their profession (Colnerud & Granström, 2002; Hattie, 2012), and our study shows that vocational teacher students' professional knowledge is also included in their profession together with their pedagogical knowledge. Vocational education requires ongoing development to keep up with workplace changes (Andersson & Köpsén, 2019). Vocational teacher students' professional knowledge must also evolve alongside technology and societal shifts, ensuring they can train students to meet the demands of the workforce. In addition, the pedagogical skills of the vocational teacher students can, for example, help the vocational students who are in need of extra support and motivate them in their learning.

Development of leadership

In this theme, leadership is at the forefront of the student teachers' descriptions. Two types of leadership emerge from their accounts; leading pupils in their learning, and managing a classroom (keeping pupils quiet, orderly, and ensuring they listen to their teacher). An example of leading pupils in their learning is provided by a subject teacher:

> It's the leadership [that I want to get better at], we've read about it at university, it's about being in a classroom. Then we have to know our [teaching] subjects, but above all be able to approach these pupils in the right way, and make sure that they are interested in learning the [teaching] subjects [...] and tell everyone who is involved in pupils' learning, why or how I have planned [my teaching and meeting with my pupils] so that they are motivated now or they are truant.

There are also descriptions where the focus is on managing a classroom where there are unruly pupils and pupils with challenging behaviours. For example, a subject teacher student says: "Leadership maybe [I would like to develop], it can be important to be able to handle the pupils who are a bit more challenging with behaviour as well, for example, [pupils] who can be a bit messy". The importance of being able to manage a classroom is also mentioned by a vocational teacher student who says:

> For me, it's about working more on conflict prevention work and leadership. [...] There, I'm still a little too cowardly and a little too soft, I think, not daring to go in and consciously steer or overrule […] and then I thought; is it because I'm not a teacher yet? That I'm a student? [...] I'm not taken seriously by the pupils and parents, and I don't know if it's because I'm not grading the pupils yet, or it's just because I need to improve my leadership?

Leadership in a classroom environment emerges in the form of conflict management. The students' need to develop their leadership is related to the fact that they are not yet teachers (the power in a community, cf. Wenger, 1998), and cannot grade the students. Teacher leadership is integral to teaching professionalism (Hargreaves, 1994). The type of leadership that emerges from the students' descriptions is about developing teaching methods that balance teaching, pupils' learning, issues of order, and collaboration with everyone involved in pupils' learning, such as the pupils' parents, the teaching team, and the school management.

Development of relationship-building

All students talk about developing the relationship-building with their pupils as a way of motivating the pupils in their learning. For example, one subject teacher student says: "this relationship with my pupils, that's the important thing, it's like where everything starts". And a vocational teacher student says: "I want to have moments with them like one by one, so that I see them more, one by one, because then maybe I will see them more in the whole class later too". The relationship with both the teaching teams in placement schools and the students' course mates at the university is also mentioned by the students. This as a way of getting teaching support for pupils who are in need of help and support and to understand the literature included in the education. For example, a subject teacher student says:

> I'm a little lost in how to deal with this group of pupils who need support and help, and [to get] support so I took advantage of other teachers on site and I have had a pretty good collaboration with them. […] So, we [me and my fellow students] have created good friendships with each other during the education, and I think it is important because we discuss a lot about our [university] tasks, literature, what challenges we see in our placement schools […], so if I didn't have a good relationship with my course mates, I wouldn't be able to cope with the education either.

Relationship-building with the teaching team can also be used to get help interpreting and understanding policy documents. A vocational teacher student says:

I have the most problems with interpreting the grading criteria, that is, what is it that the pupils should actually know and be graded on. Then if I know what they should be able to do, that's fine, but that's what I have a problem with. I have a great teacher educator at my placement school who helps me with that sort of thing, lots of discussions about what the Swedish National Agency for Education actually says, and also lots of [discussions] with the teaching team and other colleagues. I'm definitely getting help, but I need to work on it more to get better.

All vocational pupils in Sweden undertake at least 15 weeks, or alternatively half of their study time, in companies that align with their vocational orientation while they study a vocational program at upper secondary schools. The development of relationship-building with the supervisors at vocational pupils' internships emerges only from vocational teacher students' descriptions. This relationship can be helpful for the vocational teacher students to synchronise the knowledge that the pupils learn in school with the knowledge they will practice in their internship workplaces. For example, a vocational teacher student says:

I need to become more familiar with where the pupils really get the opportunity to use the knowledge, or to be able to use what has been learned during lessons at the internship workplace as well […] then it is important to keep in touch with the supervisors at the internship workplace what the pupils will practice.

Functioning relationships between teachers and pupils' parents (Hargreaves, 2000) as well as good teacher-pupil relationships are considered important for the teaching professionalism (Aspelin, 2023). In the description above, the vocational teacher student highlights another form of relationship, and that is the relationship between vocational teachers and supervisors at vocational pupils' internships, which emerges as important for the vocational teacher students' profession. It is essential for the supervisors to know what their interns (vocational pupils) are expected to do while they are completing an internship. Through this type of relationship-building, the supervisors at the internships gain the knowledge that they need about what their interns (vocational pupils) must do in the workplace.

Development of knowledge about policy documents, laws, rules and regulations

There are descriptions where the need to be able to interpret and understand the policy documents emerges. This requirement can, for example, be addressed with the help of teacher educators at placement schools and the teaching team. For example, a subject teacher student says:

I spontaneously feel that I have to learn more about what the school law says, understand the criteria of the Swedish National Agency for Education, what should be taught and how I must grade the pupils. […] It feels like I just have to get better at interpreting the policy documents […] it would have been a lot to read up on with these policy documents, and I hadn't

understood them at all. It was completely impossible to interpret those policy documents, but I got help from the teacher educator at my placement school and from the teaching team.

There are also descriptions from students, where it emerges that there is an emphasis on compliance with policy documents in teachers' work within teacher education. In practice, however, this enforcement does not function as it should. A subject teacher student says:

I'm more careful that I teach what I'm supposed to because we've read a lot at university about policy documents and the school law and various criteria […], but we have a school system that is, in other words, total chaos. What is written in our policy documents is not what the teachers do at my placement school [and] it is part of my professional development, so how do I do in reality? […] Is reality different from what we study at university?

A vocational teacher student talks about the relationship between industry regulations and the policy documents of the Swedish National Agency for Education:

What I see as a problem is that my industry says something different when it comes to approved work with a customer, than what the Swedish National Agency for Education says for the grade E. They differ considerably, and it will be a challenge for me to find a connection between the different regulations so that the pupil receives a passing grade both from the school and from the industry. […] so, regarding the need for professional development, I see a need to link the regulations we have in electrical installation work with the teaching criteria of the Swedish National Agency for Education. Because they are two different things, and I have to make a connection between them for my teaching to work.

It appears that vocational teachers must take into account various regulations in their vocational teaching, which can be understood based on Hattie (2009, 2012) as a recognition that handling various policy documents, laws, rules and regulations is part of teaching professionalism, and develops over time as the vocational teacher acquires teaching experience. Teaching and learning a profession, from a historical perspective, is rooted in a master-apprentice tradition. It is the profession that possesses its own professional rules and regulations, and the vocational teachers must take them into account in their teaching. However, teaching and learning about the profession in a school environment are based on the policy documents, laws, rules and regulations that apply to teaching in school and regulate the school system as a whole. Vocational teachers must also take these into account in their teaching. What emerges from the vocational teacher students' descriptions concerns precisely the development of knowledge about handling various policy documents, laws, rules and regulations, both from the school world and from the industry, in relation to their teaching.

Development in relation to changes in the society

Society is changing, and at the time of the interview, AI (Artificial Intelligence) was a current topic both at the country's universities and in society at large. Perhaps due to this context, the students talked about societal changes in the form of digitalisation. We therefore chose to call this theme

Development in relation to changes in the society. For example, a vocational teacher student talks about technological development in his profession:

> Without technical devices, we can't carry out our tasks at all […] Technology develops very quickly and if I don't have continuous contact with the industry and get parts of it [technological development], I can't even teach my pupils.

A subject teacher student relates the development of digital skills to AI technology and ChatGPT and says:

> I certainly don't feel like an expert on all the ways pupils can cheat, and they come up with new solutions as soon as we try to catch up [...] and when it comes to exams, if there are AI-written texts, I want to gain more knowledge about, because I feel unprepared for it. […] I tested ChatGPT and asked it to write an essay for me, and saw how quickly an AI can create a 1.5-page essay […] So, [I would appreciate] maybe like there was someone more hands-on, workshops, there you learn more about AI.

The subject teacher students see more of a need to handle what is connected to essay work and writing, and to AI technology and ChatGPT, but the vocational teacher students who teach a profession and the tangible work tasks included in it link learning of digital tools to the continuous contact with the industry. Digitisation and digital tools have increasingly become the norm in regular teaching in the Swedish school system (Gullberg & Svensson, 2020). In the increasingly digitised society, there is a need for knowledge of technology (Billett, 2020), which is also mentioned by the students in our study. School pupils often have more knowledge about technology than their parents and other adults in their environment, and this can be used in essay writing based on AI technology and ChatGPT. Vocational pupils must learn to use digital tools used in the profession during their upper secondary vocational education and the vocational teachers need to update their technical knowledge and learn the new digital tools and devices that are introduced in the profession.

Discussion

The professional development of (vocational) teachers, which is also highlighted in one of the themes, relies on changes in society and technological progress. These changes include the decentralisation of responsibility for schools from the state to the municipal level and the diversification of the teaching profession (Lindberg & Wärvik, 2017; Stenlås, 2011). Among the changes in society and technology, digitalisation can be mentioned as a factor that has fundamentally transformed our world, including the education system and the teaching profession (Billett, 2020; Douse & Uys, 2019; Gullberg & Svensson, 2020). As this development progresses, student teachers need to update their knowledge and skills to handle the new teaching tasks that digitalisation brings. New teaching materials and tools for regulating and systematically monitoring teachers' instruction and students' learning have also been developed. This requires student teachers to acquire new professional and pedagogical skills (cf. Billett,

2020). In teachers' professional development, aspects such as the language of instruction, professional ethical codes, autonomy, and teacher status are important (Colnerud & Granström, 2002; Hattie, 2012). In addition to these, vocational teachers play a crucial role in vocational education, and their ongoing professional development greatly influences the quality of education (Andersson & Köpsén, 2019).

Previous research highlights the importance of good relationships between teachers and students, as well as collaboration with others within the school (Aspelin, 2023; Goodson & Hargreaves, 2003). Köpsén and Andersson (2018) also point out that vocational teachers' access to workplaces and their active participation in work-related and social interactions are crucial for students' learning. In our study, student teachers describe the importance of collaborating with teacher educators and course mates at the university, as well as building relationships with their pupils in upper secondary school. Vocational teacher students also value their relationships with supervisors at vocational pupils' internships, which, according to Antera (2023), can enhance the quality of vocational pupils' learning and help them acquire necessary skills. Students' descriptions of their placement experiences show that identity development is crucial, whether related to completed education or specific teaching subjects. For vocational teacher students, identity is more tied to their professional practice than to teaching practice. For student teachers, interaction with other members of the teacher education community becomes an important aspect of identity formation (cf. Wenger, 1998; Wenger et al., 2002), which can also be a contributing factor to their retention in the teaching profession (cf. Gillberg et al., 2021). Such interactions also promote deeper learning about the teaching profession and foster innovation in professional development. Given that teachers' identities are linked to the teaching professionalism (Goodson & Hargreaves, 2003) and the profession evolves with changes in society (Gillberg et al., 2021), it is anticipated that teacher students, during their year of teaching, will develop various identities as vocational and subject teachers to varying degrees. These identity formations are crucial for the teacher education community, where participants create meaning through the interaction between *participation* and *reification*. This process is fundamental to their sense of meaning and contributes to the learning process within the teacher education community of practice (cf. Wenger, 1998).

Aspelin et al. (2021) link teachers' leadership in teaching to their profession, considering it fundamental to pupils' learning. Gillberg et al. (2021) state that effective leadership motivates community members to stay and learn from each other. Goodson and Lindblad (2011) also view teachers' leadership as integral to the profession, tied to long-term social relationships between teachers and pupils. In this study, the development of leadership appears in relation to social relationships that take place between students and other actors within the teacher education community. The social relations that are created between the actors are central to the description of learning in the community (cf. Lave & Wenger, 1991). Consequently, student teachers describe social relations between themselves and other actors within the teaching profession as central to their professional development. These relationships are continuously evolving in response to changes in society and through interactions between student teachers and other actors, who may also belong to different communities with distinct social relations (Wenger et al., 2002). Vocational teacher students describe their placement schools as part of a community where workplace actors help shape their professional development. Andersson

and Köpsén (2019) highlight the importance of vocational teachers' workplace interactions for their learning experiences. This is also emphasised by Auðardóttir (2022), who considers communication among community members essential for defining its content and shaping its form. Communication between different actors in the teacher education community is crucial for the growth of (vocational) teacher students and strengthens their professional identity as both practitioners and future teachers.

The students in our study also mention discussions about the content and form of teaching with the actors in the teacher education community and want to develop their knowledge in these areas. A specific aspect of the descriptions of the vocational teacher students is that the development of the form and content of teaching is also related to the demands that the industry and working life place on professional skills. In other words, the industry and working life become one of the actors in the community. Vocational teacher students must also combine school and working life with each other, which are two different environments (communities) with different forms and content of knowledge. They must build bridges between school and working life and understand the policy documents, laws, rules and regulations from both communities in relation to each other, which can create a power imbalance between these different communities. Communities of practice can also be time-limited, where power, participation, and boundaries are determined by these time limits (Hart et al., 2013). For example, knowledge and power are considered to be related to each other where power can arise in associations where people from different environments (communities) with different forms of knowledge meet, and this complex interplay of knowledge and power may apply to the vocational teacher students and their descriptions of the need for professional development.

Conclusion

Previous research, highlighted in the article, provides a multifaceted view of (vocational) teachers' professional development. It encompasses interactions with students and teachers, subject and pedagogical knowledge, as well as teaching experiences. Despite common elements and similarities in the development of teachers' professional growth, this study reveals nuances based on student teachers' descriptions of teacher education. For example, vocational teacher students often relate their professional skills to industry and working life, while subject teacher students frequently link their subject knowledge to university courses and research. At the same time, both vocational and subject teacher students talk about the need to stay updated in their teaching subjects and continue developing their pedagogical competence. However, for vocational teachers, the need for pedagogical knowledge seems to be more specific to the school environment than to working life and workshop settings. This may be because, as one vocational teacher in the study says: "It is part of the work a car mechanic to take care of interns". This means that some vocational teacher students are accustomed to training and teaching apprentices in working life and workshop environments from their profession as practitioners.

Author presentations

Hamid Asghari, the first author of the article, is an Associate Professor at the Department of Educational Studies at Karlstad University in Sweden. His research interests focus on vocational education, newly arrived students in vocational education, and (vocational) teachers' and (vocational) students' life stories.

Nina Kilbrink, the second author of the article, is an Associate Professor at the Department of Educational Studies at Karlstad University in Sweden. Her research interests concern for example vocational education, professional learning, and technical education, with a specific focus on teaching and learning and the relationship between theory and practice.

Anders E. Johansson, the third author of the article, is a Lecturer at the department of Educational Studies at Karlstad University, Sweden. He has a Degree of Master of Education from Örebro University, with Swedish and Physical Education as main subjects. His degree project was an interview study (focused) on the socialisation process within vocational education. Johansson is active in teacher and vocational teacher education and teaches various courses within the teacher programs at Karlstad University. Johansson also supervises vocational teacher students in their degree projects.

References

Abbott, A. (1981). Status and status strain in the professions. *American Journal of Sociology*, *86*(4), 819-835.

Abbott, A. (2014). *The system of professions: An essay on the division of expert labor*. University of Chicago Press.

Andersson, P., & Köpsén, S. (2019). VET teachers between school and working life: Boundary processes enabling continuing professional development. *Journal of Education and Work*, *32*(6-7), 537-551. https://doi.org/10.1080/13639080.2019.1673888

Andrews, M. (2007). *Shaping history: Narratives of political change*. Cambridge University Press.

Antera, S. (2023). *Vocational teachers' professional competence at the intersection of two regimes of competence: The case of Sweden* [Doctoral dissertation, Stockholm University]. DiVA. https://www.diva-portal.org/smash/get/diva2:1740865/FULLTEXT01.pdf

Antera, S., Teräs, M., Nilsson, S., & Rehn, H. (2022). Important and achieved competence for Swedish vocational teachers: A survey with teachers and principals. *Nordic Journal of Vocational Education and Training*, *12*(1), 76-102. https://doi.org/10.3384/njvet.2242-458X.2212176

Asghari, H., & Berglund, I. (2020). Svensk yrkeslärarutbildning efter reformen 2011: Lärarstudenters uppfattningar om antagning, VFU och läraranställning [Swedish vocational teacher education after the reform 2011: Teacher students' perceptions of admission, practicum internship and teacher appointment]. *Nordic Journal of Vocational Education and Training*, 10(2), 21–43. https://doi.org/10.3384/njvet.2242-458X.2010221

Aspelin, J. (2023). Microscopic relational analysis: A method for researching the teacher-student relationship. *International Journal of Research & Method in Education*, *46*(1), 56-69. https://doi.org/10.1080/1743727X.2022.2042244

Aspelin, J., & Eklöf, A. (2023). In the blink of an eye: Understanding teachers' relational competence from a micro-sociological perspective. *Classroom Discourse*, *14*(1), 69-87. https://doi.org/10.1080/19463014.2022.2072354

Aspelin, J., Östlund, D., & Jönsson, A. (2021). 'It means everything': Special educators' perceptions of relationships and relational competence. *European Journal of Special Needs Education*, *36*(5), 671-685. https://doi.org/10.1080/08856257.2020.1783801

Auðardóttir, A. M. (2022). 'I am the black duck' affective aspects of working-class mothers' involvement in parental communities. *British Journal of Sociology of Education*, *43*(1), 22-39. https://doi.org/10.1080/01425692.2021.1999791

Bamberg, M. G. W. (2004). Considering counter narratives. In M. Andrews & M. G. W. Bamberg (Eds.), *Considering counter narratives: Narrating, resisting, making sense* (pp. 351-373). John Benjamins Publishing Company.

Billett, S. (2020). Developing a skillful and adaptable workforce: Reappraising curriculum and pedagogies for vocational education. In E. Wuttke, J. Seifried, & H. Niegemann (Eds.), *Vocational education and training in the age of digitization: Challenges and opportunities* (pp. 251–272). Verlag Barbara Budrich. https://doi.org/10.3224/84742432

Colnerud, G., & Granström, K. (2002). *Respekt för läraryrket: Om lärares yrkesspråk och yrkesetik [Respect for the teaching profession. On teachers' professional language and ethics]*. HLS förlag.

Colnerud, G., & Granström, K. (2015). *Respekt för lärarprofessionen: Om lärares yrkesspråk och yrkesetik [Respect for the teacher profession. On teachers' professional language and ethics]*. Liber.

Douse, M., & Uys, P. (2019). TVET Teaching in the time of digitisation. In S. McGrath, M. Mulder, J. Papier, & R. Suart (Eds.), *Handbook of vocational education and training* (pp. 1-16). Springer. https://doi.org/10.1007/978-3-319-94532-3_75

Eriksen, A., Leming, T., & Skrøvset, S. (2024). Shaping professional identity in the early days of teacher education. In I. K. R. Hatlevik, R. Jakhelln, & D. Jorde (Eds.), *Transforming university-based teacher education through innovation: A Norwegian response to research literacy, integration and technology* (pp. 196-204). Routledge. https://doi.org/10.4324/9781032693798-18

Fejes, A., & Köpsén, S. (2014). Vocational teachers' identity formation through boundary crossing. *Journal of Education and Work*, *27*(3), 265-283. https://doi.org/10.1080/13639080.2012.742181

Freeman, M. (2015). Narrative as a mode of understanding: Method, theory. In A. De Fina & A. Georgakopoulou (Eds.), *The handbook of narrative analysis* (pp. 21-37). John Wiley & Sons.

Gillberg, G., Kadefors, R., Holmer, J., & Östebo, A. (2021). Meaningfulness and coherence? Experiences among young soldiers in the Swedish armed forces. *Nordic Journal of Working Life Studies*, *11*(3). https://doi.org/10.18291/njwls.123905

Goodson, I. F., & Hargreaves, A. (2003). Teachers' professional lives: Aspirations and actualities. In I. F. Goodson & A. Hargreaves (Eds.), *Teachers' professional lives* (pp. 1-27). Flamer Press.

Goodson, I. F., & Lindblad, S. (2011). Researching the Teaching Profession under Restructuring. In I. F. Goodson & S. Lindblad (Eds.), *Professional knowledge and educational restructuring in Europe* (pp. 1-10). Sense Publishers.

Gullberg, C., & Svensson, J. (2020). Digitalisering i skolan – ännu en utmaning för lärarprofessionen? [Digitisation in school – another challenge for the teaching profession?] *Organisation & Samhälle,* (1), 40–50.

Hargreaves, A. (1994). *Changing teachers, changing times: Teachers' work and culture in the postmodern age*. Cassell.

Hargreaves, A. (2000). Four ages of professionalism and professional learning. *Teachers and Teaching*, *6*(2), 151-182. https://doi.org/10.1080/713698714

Hart, A., Davies, C., Aumann, K., Wenger, E., Aranda, K., Heaver, B., & Wolff, D. (2013). Mobilising knowledge in community–university partnerships: What does a community of practice approach contribute? *Contemporary Social Science*, *8*(3), 278-291. https://doi.org/10.1080/21582041.2013.767470

Hattie, J. (2009). *Visible learning: A synthesis of meta-analyses in education*. Routledge.

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge.

Köpsén, S., & Andersson, P. (2018). Boundary processes in connection with students' workplace learning: Potentials for VET teachers' continuing professional development. *Nordic Journal of Vocational Education and Training*, *8*(1), 58–75. https://doi.org/10.3384/njvet.2242-458X.188158

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Lindberg, V., & Wärvik, G.-B. (2017). Vad är ett yrkesämne? [What is a vocational subject?] In A. Fejes, V. Lindberg, & G.-B. Wärvik (Eds.), *Yrkesdidaktikens mångfald* (pp. 23–58). Lärarförlaget.

Mishler, E. G. (1999). *Storylines: craftartists' narratives of identity*. Harvard University Press.

Pérez Prieto, H. (2006). *Historien om räven och andra berättelser. Om klasskamrater och skolan på en liten ort – ur ett skol- och livsberättelseperspektiv [The Story of the fox and Other Stories. On Classmates and the School in a Small Town – From a School- And a Life Story Perspective]*. Karlstad University.

Riessman, C. K. (1994). *Narrative analysis*. Sage Publications.

Riessman, C. K. (2008). *Narrative methods for the human sciences*. Sage Publications.

Scott, J., Pryce, J., Reinke, N. B., Li, D., Shuker, M.-A., Singleton, R., Tsai, A., & Parkinson, A. L. (2023). Towards a 'community for practice'—A narrative analysis of the evolution of higher education scholars. *Education Sciences*, *13*(12), 1-18. https://doi.org/10.3390/educsci13121239

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, *15*(2), 4.

Stenlås, N. (2011). Läraryrket mellan autonomi och statliga reformideologier [The teaching profession between autonomy and state reform ideologies]. *Arbetsmarknad & Arbetsliv*, *17*(4), 11–27.

Swedish Research Council. (2017). *Good research practice*. https://www.vr.se/download/18.5639980c162791bbfe697882/1555334908942/Good-Research-Practice_VR_2017.pdf

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge University Press.

Wenger, E. (2007). Social læringsteori-aktuelle temaer og udfordringer [Social learning theory - current themes and challenges]. In K. Illeris (Ed.), *Læringsteorier. Seks aktuelle forst*åelser (pp. 61–80). Roskilde Universtetsforlag.

Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: a guide to managing knowledge.*

Åstrand, B. (2023). The education of teachers in Sweden: An endeavour struggling with academic demands and professional relevance. In E. Elstad (Ed.), *Teacher education in the Nordic region: Challenges and opportunities* (pp. 75-158). Springer. https://doi.org/10.1007/978-3-031-26051-3