

JYX



This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.

Author(s): Lehtinen, Auli; Kostiainen, Emma; Martin, Anne; Näykki, Piia

Title: Pre-service teachers co-constructing narratives about the future of education

Year: 2024

Version: Published version

Copyright: © 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis

Rights: CC BY 4.0

Rights url: <https://creativecommons.org/licenses/by/4.0/>

Please cite the original version:

Lehtinen, A., Kostiainen, E., Martin, A., & Näykki, P. (2024). Pre-service teachers co-constructing narratives about the future of education. *European Journal of Teacher Education*, Early online. <https://doi.org/10.1080/02619768.2024.2393329>



Pre-service teachers co-constructing narratives about the future of education

Auli Lehtinen, Emma Kostainen, Anne Martin & Piia Näykki

To cite this article: Auli Lehtinen, Emma Kostainen, Anne Martin & Piia Näykki (19 Aug 2024): Pre-service teachers co-constructing narratives about the future of education, European Journal of Teacher Education, DOI: [10.1080/02619768.2024.2393329](https://doi.org/10.1080/02619768.2024.2393329)

To link to this article: <https://doi.org/10.1080/02619768.2024.2393329>



© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 19 Aug 2024.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

Pre-service teachers co-constructing narratives about the future of education

Auli Lehtinen , Emma Kostianen, Anne Martin and Piia Näykki

Department of Teacher Education, University of Jyväskylä, Jyväskylä, Finland

ABSTRACT

This study examined the kinds of narratives that nine pre-service teachers shared in online collaborative learning discussions about the future of education in relation to global megatrends, namely digitalisation and ecological sustainability. We also analysed how they positioned themselves in the future of education. We used data-driven qualitative analysis and narrative analysis, and we report our findings partly as non-fiction comic strips. We found that the pre-service teachers (1) viewed digitalisation in education through antonyms and ambivalence, (2) emphasised critical media literacy, (3) viewed ecological perspectives through a main and counter-narrative (taking root more deeply vs. not everyone needs to get excited) and (4) emphasised the role of action. In terms of positioning, we found dynamic tensions between passive and active stances. We discuss our findings in light of teacher identity and education for democracy and sustainability. The results can be used as thinking tools in teacher education.

ARTICLE HISTORY

Received 8 January 2024
Accepted 10 August 2024

KEYWORDS

Pre-service teacher identity;
narrative analysis;
digitalisation; sustainability;
democracy education

Introduction

Societies today are confronted with a wide range of issues, such as climate change, global pandemics and rising inequality (Aly et al. 2022). Teacher education (TE) plays an important role in addressing them. Education alone is not enough to deal with these problems, but schools and teachers play a crucial role in securing a democratic and sustainable future (Aly et al. 2022; Kranz et al. 2022). Amid wicked challenges and uncertainty, pre-service teachers (PSTs) need to develop collective and transformative capacities (Brevik et al. 2019). This process is intertwined with PSTs' identity work (Akkerman and Meijer 2011; Galman 2009), as they need to negotiate how to incorporate an active, transformative facet as part of their teacher identity.

Identity negotiations may be tacit, taking place in situations that teacher educators cannot fully observe, e.g. during collaborative learning discussions, which is the context of our study. These sites may provide more authentic insights into conceptions than, e.g. written coursework or interviews, in which the likelihood of socially desirable responses is greater. Conversational, non-elicited stories differ significantly from those told during

CONTACT Auli Lehtinen  auli.m.lehtinen@jyu.fi  Department of Teacher Education, University of Jyväskylä, Jyväskylän Yliopisto, Jyväskylä FI-40014, Finland

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

interviews (Bamberg and Georgakopoulou 2008). We believe that these less-formal conversations between peers offer interesting opportunities for research. Little is known about the narratives that PSTs share in collaborative learning situations as they address wicked societal dilemmas.

In this study, we use a data-driven, narrative orientation to analyse PSTs' narratives during collaborative discussions about the future of education in relation to digitalisation and ecological sustainability. We also explore how PSTs position themselves in the future of education. Studying future-oriented narratives is important because stories not only build identities, but also motivate collective action (Mayer 2014). Narratives capture the complexity and multivoiced nature of PSTs' imaginative rehearsal (Goffman 1963), and via being concrete and accessible, bring practice closer and can be used as thinking tools in developing TE (Moen 2006). We report our findings partly as non-fiction comic strips, a medium that researchers rarely use (Tatalovic 2009). Our study's overarching concepts are presented in Figure 1.

Theoretical framework

Teacher identity as continuously negotiated and as a struggle

In this study, we define *identities* as narratively, socially and dialogically constructed perceptions of who one is (Arvaja, Sarja, and Rönnerberg 2022). These perceptions are influenced by one's beliefs, background and experiences in social and cultural contexts (Arvaja, Sarja, and Rönnerberg 2022; Gee 2000). Thus, both external and internal aspects establish the building blocks of identities (Lee and Schallert 2016). A dialogical perspective is consistent with sociocultural theories, suggesting that people construct their identities through patterned behaviour and cultural mediation (Akkerman and Meijer 2011). Identities are not fixed, but rather evolving and relational – continuously (re) negotiated during interactions with other people, institutions and groups (Akkerman and Meijer 2011). According to Gee (2000), people must engage in complex moment-by-moment negotiations to be recognised as, e.g. a certain kind of teacher.

Identity can be viewed as an answer to the question 'Who am I at this moment?' and in relation to others (Beijaard, Meijer, and Verloop 2004). When it comes to PSTs, one important question is 'What kind of a teacher do I want to be?' Thus, PSTs need to project

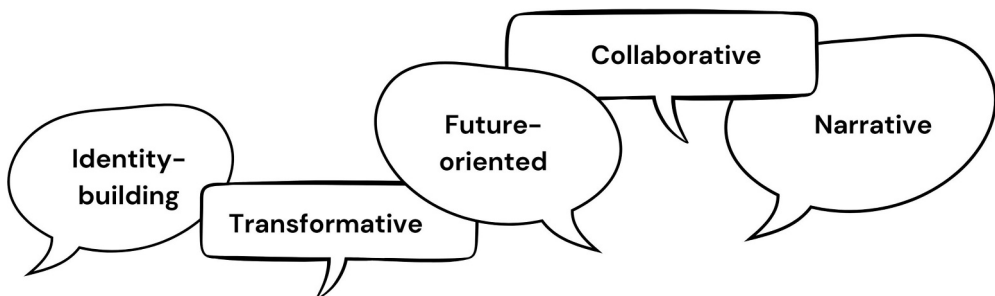


Figure 1. This study's overarching descriptive concepts.

their ‘future possible selves’ (Lee and Schallert 2016, 77) in the process of becoming a teacher. During TE, initial teacher images and conceptions of teaching are transformed into a more nuanced understanding of teaching and teacher identity as PSTs reflect on past experiences and current learning while imagining themselves as teachers (Lee and Schallert 2016).

We explore PSTs’ evolving identities through positioning. By positioning oneself in relation to others and the social world, people narratively construct their identities (Arvaja, Sarja, and Rönnerberg 2022; Wortham 2001). Arvaja, Sarja, and Rönnerberg (2022) studied PSTs’ personal teacher characterisations after pedagogical studies, focusing on how students positioned – voiced and evaluated – pedagogical studies and past school experiences in their narratives of themselves as future teachers. They found that PSTs differentiated themselves from an emotionally distant past teacher and positioned themselves as interactive and caring educators.

A dynamic tension often exists between PSTs’ past, present and future, and with the various and sometimes-conflicting expectations and roles that PSTs are expected to undertake (Akkerman and Meijer 2011; Beijaard, Meijer, and Verloop 2004). Researchers have described this process of identity work as a struggle (Alsup 2006; Beijaard, Meijer, and Verloop 2004). For example, Galman (2009) portrayed two competing narratives that can be confusing for PSTs: one coming from a progressive TE faculty emphasising transformative, intellectual and agentic work for change, and the other the product of bureaucratic practice, in which teachers do not ‘rock the boat’ within the institution. The results suggested that dissonance, that is, conflict between opposing thoughts or stories, can act as a significant catalyst in teacher education and in PST identity development. Tensions can be troublesome, but also essential for learning, identity work and transformative learning (Akkerman and Meijer 2011; Mezirow 2000).

Similar to the two competing stories described by Galman (2009), Matikainen, Männistö, and Fornaciari (2018) depicted two opposing educational ideologies in TE: transformative vs. conservative. Transformative orientation has been highlighted in the context of changing societal needs (Matikainen, Männistö, and Fornaciari 2018), e.g. global megatrends. Furthermore, various narratives may conflict with PSTs’ own personal stories as future teachers (Galman 2009). PSTs’ identity negotiations have been linked to decisions about remaining in the field (Alsup 2006), as well as implementation of educational policy (Stillman and Anderson 2015).

PSTs as transformative, critical intellectuals in relation to global megatrends

The transformative perspective in TE draws attention to teachers’ ethical responsibilities towards both society and students (Matikainen, Männistö, and Fornaciari 2018). Teachers’ transformative capacity can be defined as breaking out of the given frame of action and advancing change, often due to conflict or a dilemma (Brevik et al. 2019). Both individual and collective attempts are required, and PSTs need to develop collaborative initiatives of transformative agency (Brevik et al. 2019).

In this study’s context, challenging future issues are viewed through the concept of global megatrends. Australia’s national science agency defined *megatrends* as ‘trajectories of change that typically unfold over years or decades and have the potential for substantial and transformative impact’ (Naughtin et al. 2022, 2). In their report, they referred

to John Naisbitt's definition of megatrends in 1982. Such megatrends included 'industrial society to information society' and 'centralisation to decentralisation', and the ideas have passed into common language (Slaughter 1993).

However, such accounts have been criticised. Slaughter (1993) examined various attempts to define megatrends and noted that many simplify the world during difficult times, thereby providing a false sense of security without critical thinking. He also criticised many of them for failing to make their intentions and worldviews clear. From a discourse theory perspective, Von Groddeck and Schwarz (2013) argued that megatrends can be viewed as empty signifiers due to being so overloaded and vague. They also stated that considering megatrends may freeze the discussion and increase blind spots.

Despite criticisms of the megatrend concept, we believe that there are well-defined and current societal perspectives in TE. These include education for democracy (Aly et al. 2022; Raiker and Rautiainen 2017) and education for sustainable development (Kranz et al. 2022; Lotz-Sisitka et al. 2015), that is, thriving for economic, social and environmental sustainability, as proposed by the United Nations' sustainability goals. Both education for democracy and sustainability are essential to building a sustainable future, and such development depends on educated and critically reflective governance and citizenship (Raiker and Rautiainen 2017). TE plays a key role in this (Aly et al. 2022).

In this study, we focus on two megatrends: digitalisation and ecological sustainability. In previous studies, only a small minority of PSTs understood digital literacy as requiring critically reflective technology usage, instead of focussing merely on technological aspects (List, Brante, and Klee 2020), and PSTs struggled with critical digital literacy while analysing online texts on social issues (Castellví, Díez-Bedmar, and Santisteban 2020). In terms of ecological sustainability, studies worldwide have found high levels of environmental awareness and pro-sustainability attitudes, but what is lacking in sustainability education is an emphasis on political literacy and civic action, e.g. collaborating with environmental organisations (Kranz et al. 2022).

Our study's context is Finnish TE. Previous research has indicated that education for democracy or active citizenship is not often central to Finnish teachers' perceptions of their work (Fornaciari and Rautiainen 2020) or within the school culture (see Männistö and Moate 2023). Fornaciari and Rautiainen (2020) interviewed Finnish primary teachers and found that they perceived active citizenship in terms of loose critical thinking and media literacy, while more concrete links to being active can be viewed as problematic because of their perceived political nature. Furthermore, Finnish TE has had a strong emphasis on didactics and psychology, rather than on societal facets or education for democracy (Furuhagen, Holmén, and Sääntti 2019). In considering current education for democracy in Finland, Gretschel et al. (2023), through interviews and analysis of curricula, concluded that democracy education is not systematic and does not concern the whole community, and the same applies to TE. Their key suggestion was to make democracy and human rights education mandatory in TE.

Future-related talk and collaborative learning discussions as a site for narrative research

Narrative research has focussed heavily on prototypical narratives, that is, personal stories about past and nonshared experiences gathered through individual interviews

(Georgakopoulou 2006). According to Georgakopoulou (2006), 124), such a canonical approach can be viewed as 'deceptively homogeneous'. She described a field of research that takes a more interactional approach to narratives, analysing stories in everyday contexts. This 'small stories' approach aims to examine under-represented narrative activities, e.g. talking about future or hypothetical events (Georgakopoulou 2006). We are interested in how PSTs collaboratively narrate their future scenarios as teachers, similar to Bamberg and Georgakopoulou's (2008) formulation: analysing small stories to shed light on the processes of identities as 'in-the-making' or 'coming-into-being'.

Some scholars have argued that narratives must be backward-oriented, but Georgakopoulou (2006), 127) asserted that stories about future events, 'the joint piecing together of future scenarios', may be even more common and significant than narratives about the past. These imagined narratives draw on stories about past events, similar to the process of PSTs projecting their future selves (Lee and Schallert 2016) during TE. Galman (2009), building on Goffman (1963), described this as an 'imaginative rehearsal' in which TE plays a crucial role in transforming PSTs' personal stories to expand their repertoire of imagined possibilities for complex professional situations.

We identified a research gap in the use of narrative research orientation to study collaborative learning discussions. Some previous narrative studies on collaborative learning exist. Yukawa (2006) used narrative analysis to study collaborative critical thinking in an online course, focussing on dyadic, text-based collaboration. Narrative analysis was used to discover critical transformations (Mezirow 2000) in students' understanding. Yukawa found transformations in reflection narratives, which followed a plot structure that included addressing cognitive and emotional challenges. In some collaborative learning studies, personal narratives have been among the findings, but the methods have not been narrative. Aldemir, Borge, and Soto (2022) studied multicultural communication during shared meaning-making about politically charged topics. They found that grounding with personal narratives can be associated with productive dialogue and multicultural competence.

Dialogical perspectives provide another intersection of narrative orientation and collaborative learning. Arvaja and Hämäläinen (2021) argued for the need to reconceptualise 'productive interaction' in collaborative learning by focussing on its dialogical features. Although they did not use the notion of narrative, they highlighted Bakhtian views that embrace alterity, i.e. acknowledging difference and the multiplicity of voices. Indeed, Bakhtian ideas about dialogue are central to the narrative research approach (Moen 2006). However, narrative orientation does not seem to be very common within collaborative learning studies.

Finally, studying the narratives of the future of education is important because stories both build our identities and motivate our collective actions. According to Mayer (2014), a good story can evoke passions and reshape beliefs, including non-egoistic interests that can lead to collective action. Stories can transform us from audiences to actors in a way that our identities require that 'we do what the plot demands, do what is right, do what is moral' (Mayer 2014, 8).

Thus, we address the research gap related to PSTs' narratives about wicked societal issues and the use of narrative methods to examine collaborative learning discussions. We seek to explore PSTs' positioning, which can be seen as an integral part of their collaborative identity work (Arvaja, Sarja, and Rönnerberg 2022; Wortham 2001).

The following research questions guide our study:

- (1) What kind of narratives can be composed from PST groups' collaborative discussions about the future of education in relation to the digitalisation and ecological sustainability megatrends?
- (2) How do PSTs co-construct their position in the future of education?

Methods

Context

This study's context was an online TE course (5 ECTS) that focussed on societal issues of education. The data were collected from January to April 2022 at a Finnish university. As the COVID pandemic situation worsened in the beginning of 2022, the course was moved to online learning and held on Zoom. The worsened situation caused almost all university education in Finland to move to distance learning. The course comprised online lectures and classes, as well as small group collaborations in online breakout rooms. We previously analysed video recordings of the same collaborative learning situations to study the phases of knowledge co-construction and socioemotional processes (Lehtinen, Kostiainen, and Näykki 2023). In the earlier study, we identified a need for further analysis, focussing on content and considering teacher identity.

The participants ($N=9$) were pre-service secondary school teachers who were in their first academic year. The participants were majoring in various disciplines (see the next section for details). In Finland, secondary school teachers study for a master's degree that involves studies in their discipline(s) and compulsory pedagogical studies (60 ECTS). Finnish secondary school PSTs qualify to work as teachers at various education levels, usually secondary-level, upper secondary or vocational school. In our context, PSTs study education in multidisciplinary groups (including, e.g. students majoring in history, physics, English language, and Finnish language). The aim is to prepare for multidisciplinary collaboration in their future work.

The main task in the course, 'the megatrend task', dealt with teachers as transformative agents in society. Students formed small groups based on their interest in a particular megatrend. They worked collaboratively in Zoom breakout rooms on questions related to the relationship between the megatrend and education (e.g. how the megatrend is manifested from the perspective of different disciplines, and what kind of a change they would like to advance). They then prepared a presentation for their peers. Related readings included research articles from a critical perspective on digitalisation in education and sociologically oriented articles on sustainability and education. Although the course was moved to distance mode rather suddenly, the students mostly did not bring up the topic of online learning, even when discussing digitalisation. Instead, they talked about their past school experiences and about their views on the current state of schools. The teacher educator visited each of the breakout rooms and guided the discussions, e.g. by asking for a synthesis of the PSTs' discussion. In most situations, the teacher educator expressed dissonance or inconsistency among ideas. In our previous study, we found that such dissonance influenced PSTs' knowledge co-construction and led to metacognitive statements, thus helping PSTs to engage in higher-level thinking (Lehtinen, Kostiainen, and Näykki 2023).

Data collection

Video data were collected using Zoom's screen-recording function. Participation was voluntary, and written consent forms were collected. Participants acknowledged that they were free to withdraw their participation at any time. We studied the collaborative discussions (2 hours, 47 minutes) from two small groups ($n = 4$ and $n = 5$). The discussions took place over two consecutive weeks. The case groups were chosen after the first author examined all the videos (12 hours, 15 minutes) and observation notes from the course. The situations were chosen because the task was complex and collaborative, viewing teachers as transformative agents. Furthermore, data for the entire process was available for these two groups (Consumer Behaviour Group and Digitalisation Group). [Table 1](#) presents the participants, their majors and ages.

Data analysis

We employed a data-driven qualitative data analysis (Miles, Huberman, and Saldaña 2020) and a thematic narrative analysis combined with a storyteller researcher position (Smith 2016). Furthermore, we used counter-narrative as an analytical tool (Heikkilä et al. 2022). We also were inspired by reflexive thematic analysis (e.g. Clarke and Braun 2018) in analysing the central organising themes. Reflexive thematic analysis has similarities with thematic narrative analysis. The analysis comprised of first- and second-cycle coding (Miles, Huberman, and Saldaña 2020). The first cycle comprised inductive coding that aimed to identify different aspects of the participants' values and beliefs, and the second cycle dealt with identifying narrative themes. The process is visualised in [Figure 2](#).

The analytical process started with transcribing the data, yielding 70 pages of text (font size 12, line spacing 1.5). Next, the first author conducted the data-driven first-cycle coding using *values coding* and *descriptive coding* (Miles, Huberman, and Saldaña 2020). Value codes reflect participants' values and beliefs, thereby illustrating their worldviews

Table 1. Participants.

Pseudonym	Major	Age
<i>Consumer Behaviour Group</i>		
Elias	Mathematics	20
Emma	History	Not available
Laura	Educational technology	19
Nea	Finnish language and literature	20
<i>Digitalisation Group</i>		
Ida	English	20
Ella	Chemistry	Not available
Sara	Mathematics	20
Sofia	English	Not available
Robin (dropped the course)		

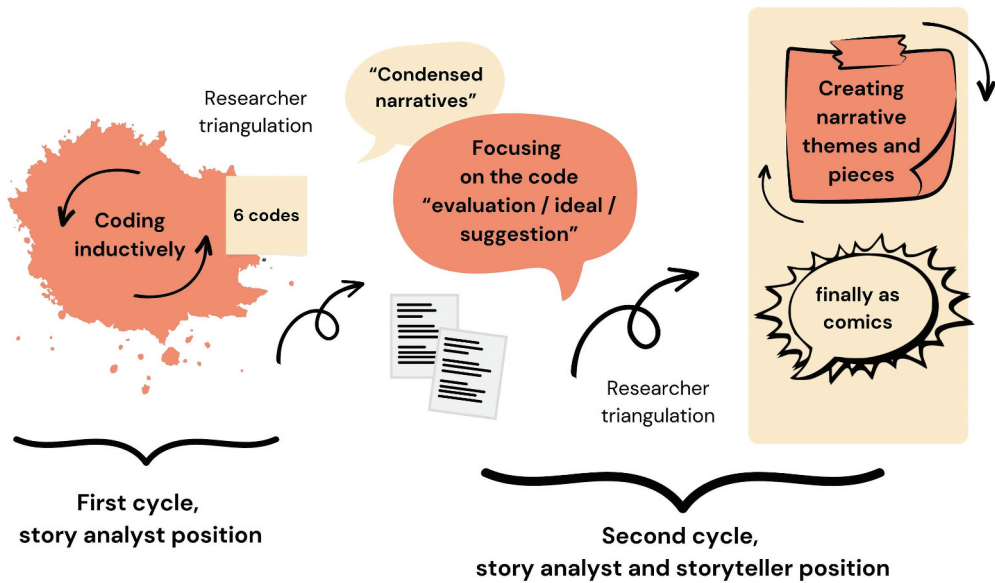


Figure 2. Analytical process.

(Miles, Huberman, and Saldaña 2020). During this process, qualitative data analysis software ATLAS.ti was used. The unit of analysis was a speaking turn. The first author developed the following inductive codes through an iterative process: (1) conception of schools' current state or future direction; (2) conception of society's current state or future direction; (3) personal experiences; (4) evaluation/ideal/suggestion of/for the future of education in relation to the megatrend; (5) conception of the relationship between phenomena and (6) the perspective of school subject(s). Data examples can be found in [Appendix 1](#). We used investigator triangulation to evaluate the codes and grounded examples of them through discussions.

The same turn could receive various codes (usually one or two). The teacher educator briefly participated in the discussions, but the teacher educator's talk was not coded because our focus was on the PSTs' narratives. Moreover, turns that dealt with organising group work (e.g. fixing timetables) were not coded. The coded turns yielded 52 pages of transcribed text.

We also wanted to prioritise and respect the participant's voice (Miles, Huberman, and Saldaña 2020). Thus, the first author summarised each turn, keeping the wording as close to the original as possible. This allowed for having a condensed overview of the discussions.

During the coding process and through various cycles of reading the data, we decided to focus on the code 'evaluation/ideal/suggestion' because these turns also condensed or crystallised the meanings of the experience-oriented talk and the conceptions related to the current state of schools and society. Evaluative talk can be seen as a means of positioning and narrative identity work (Arvaja, Sarja, and Rönnerberg 2022). In particular, the narrator can reinforce their positioning through evaluation (Arvaja, Sarja, and Rönnerberg 2022; Wortham 2001), e.g. by distancing oneself from the characteristics of

others, such as a certain kind of teacher one does not want to become. Linguistically, Arvaja, Sarja, and Rönnerberg (2022) pointed out similar features of evaluative talk that we recognised while coding, including explicit negative or positive evaluations (e.g. 'It's good that ...' in our data), evaluative verb forms ('should') or using future tenses and expressions ('as future teachers, we can ...', 'we would').

The next phase of our narrative analysis – already part of the second cycle – resembled what Smith (2016) called the perspective of a 'storyteller', in which the analysis takes place in a story, and the researcher retells participants' stories to share essential aspects of participants' experiences. Thus, the first author gathered all the summarised speaking turns that dealt with evaluation or ideal level of the future of education. The first author composed them into preliminary texts that indicated the values that PSTs gave to the megatrend's relation to education. Some phrases were excluded, as they did not answer Research Question 1. We termed these texts *condensed narratives*. During this phase, we recognised the need to use counter-narratives as an analytical tool (see Heikkilä et al. 2022). By voicing counter-narratives, people break socially and culturally established expectations and position themselves against the main narratives' ideologies (Heikkilä et al. 2022).

Through an iterative process of composing narratives and rereading them, the first author constructed themes that captured the essence of PSTs' narratives, much like main characters in the story we tell about the data, instead of collection pots of data domains (Clarke and Braun 2018). The themes were named after the phrases that PSTs used to keep them as close to their lived experiences as possible. We termed these *narrative themes* (Smith 2016).

Again, we used investigator triangulation to evaluate critically whether the themes corresponded with the data. The first author and two other authors read through the 'condensed narratives' and the coded data against the preliminary themes and evaluated them through discussions. We formed four final themes in the analysis. The Digitalisation Group's narratives were summarised by the themes of 'Welcome all changes with open arms, but still question them' and 'The most important thing is media literacy'. The Consumer Behaviour Group's narratives were condensed into the themes of 'To take root deeper than on a superficial level' and 'Not everyone needs to get excited', the latter being a counter-narrative to the former. During the iterative process, various antonyms were identified, e.g. active vs. passive stances, which guided the analysis of positioning (see also Arvaja, Sarja, and Rönnerberg 2022).

As a result of the two-phased coding cycle and narrative analytical process, the first author composed dialogic and narrative pieces to illustrate the themes. During this phase, the first author repeatedly reviewed the data to ensure that the meanings in the narrative pieces were rich enough and consistent with the data. In most cases, wordings were added. These dialogic pieces were seven pages long altogether. To capture the main meanings within the dialogic pieces, the first author created three non-fiction comic strips (see Tatalovic 2009). In this way, data excerpts are presented within the comics, which were created using the online graphic design tool Canva (credits in Appendix 2).

Even though researchers largely and 'somewhat unfairly' have ignored comics as a medium (Tatalovic 2009, 2), we viewed them as suitable because they visualise collaborative discussions' essential dialogic nature. Tatalovic (2009) defined 'science comics' as aiming to communicate science or inform about a scientific concept or theme. Visual and artistic expressions can bridge connections between narrative, experience and meaning (Bochner and Ellis 2003).

Results

PSTs' narratives about the future of education

Digitalisation: 'Welcome all changes with open arms, but still question them'

The recurring pattern in the Digitalisation Group's discussions was an ambivalent stance towards digitalisation in education. It could be described as evaluating the phenomenon as having a dualistic character: good and useful on one hand, and worrisome and dangerous on the other. Sofia emphasised that digitalisation and education involve 'so many challenges' as to how to keep children off of unwanted websites, whether the ability to concentrate deteriorates and what happens to learning outcomes. Ella summed up the discussion and the 'million aspects', including digital materials in schools, media literacy, mobile phones' ubiquity in children's lives, online bullying and self-esteem issues due to social media, along with the notion that, on the other hand, 'it is such a good tool' and it is highly used in education and working life.

Sofia, Ella and Sara expressed the same hesitant and ambivalent position towards digitalisation and the future of education. Sofia voiced the most antonyms: positive vs. negative; plus vs. minus; good vs. bad; useful vs. dangerous and poor. Sara explicitly suggested that what they can do as future teachers in relation to this change is to 'welcome all changes with open arms, but still question them'. This narrative is illustrated in the dialogic piece created as a comic strip (Figure 3).

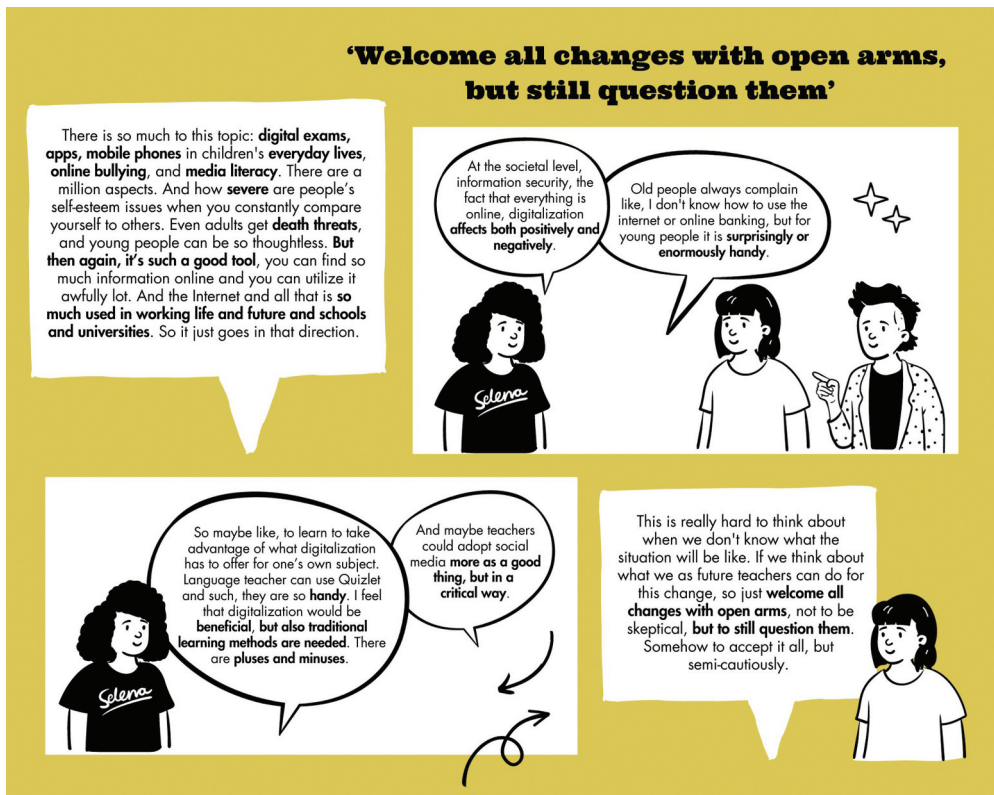


Figure 3. Digitalisation group, first narrative.

Digitalisation: 'The most important thing is media literacy'

The second theme captures the Digitalisation Group's shared understanding that media literacy is key to the future of education. It is the answer to the negative and, as we saw in the previous theme, even dangerous influences of digitalisation. The idea of media literacy and critical media literacy continued to emerge throughout the discussion. Students then took the analogy of 'home economics' teaching and applied it to teaching media literacy. Home economics is part of the Finnish national core curriculum and is compulsory in secondary education, usually for ages 13–14, then optional after that. The aim is to teach competencies required for everyday household management and a sustainable and well-being-promoting lifestyle. Students learn cooking, cleaning and consumer rights and responsibilities.

In the discussions, home economics was viewed as something that represents learning hands-on life competencies, similar to the idea of learning by doing. The analogy of home economics seemed to be supported by the whole group. While discussing the analogy, Sofia described how she learned many things from TikTok, including 'life skills', because she can look for the 'proper things vs. hoaxes' and 'reasonably consider' them. She concluded that teachers could use social media in a more positive, but still critical, way (see previous theme). Sara suggested that in basic education, pupils could administer a social media account to 'learn together how it affects [them]'. Sofia noted that this is already done often and that it involves data and information security aspects, but it would provide an 'opportunity to learn in a different way'. Another perspective presented was that media literacy should be embedded in all subjects. Sofia also stated that teachers need to keep up with their own 'critical thinking skills and media skills'. The media literacy narrative is illustrated in Figure 4.

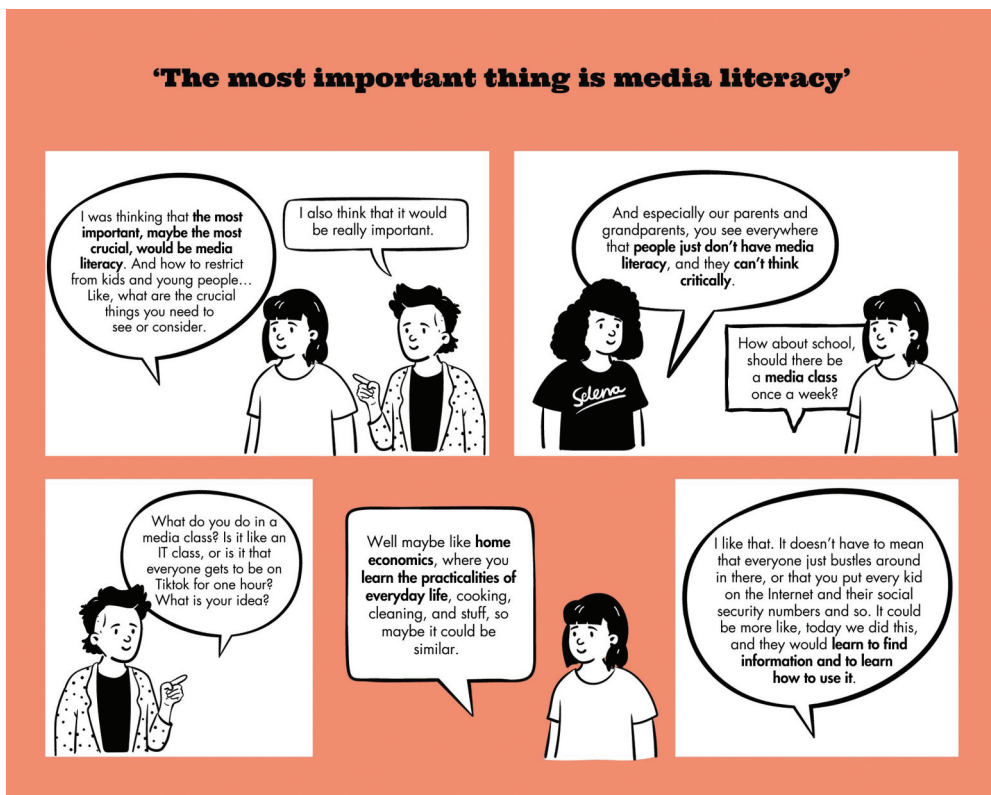


Figure 4. Digitalisation group, second narrative.

Ecological sustainability: 'To take root deeper than on a superficial level' vs. 'Not everyone needs to get excited'

The narrative theme of 'To take root deeper than on a superficial level' manifests the Consumer Behaviour Group's ideas on the dilemma of really making a difference in ecological thinking through education. Nea voiced the group's core issue and question: 'What interests me is that today's society is so, so centred around consuming. Everything kind of revolves around it [...] and it's not terribly sustainable. And in teaching, how could this be considered, so that the new generations would grow up to be less consumer-oriented?'

They concluded that through education, they wanted to question the consumerism trend. A recurring pattern emerged: Emma repeatedly stated the antonym of bringing a deeper change and more profound thinking, as opposed to superficial intentions and 'preaching'. Nea and Laura echoed this, as they rephrased the main ideas of their group, e.g. Laura summarised how their discussions had focussed on ecological perspectives and sustainable development, and how to facilitate the ecological aspect of consumer behaviour. Nea also said that in schools, these perspectives should be brought forth in a way that 'pupils would adopt it as part of their lives'. Furthermore, Laura asserted that it would be important to view ecological thinking or ecological civilisation 'as a broad enough matter' within the particular school subject, outside of the subject and even as a potential new school subject.

One angle of the 'deeper' narrative was focussing on action vs. knowledge. For instance, the group discussed 'theme days' (i.e. days that focus on an integrative theme, e.g. well-being), which Elias suggested as one pedagogical solution. Nea said that she hated theme days because they were poorly organised. Emma continued by saying, 'Yeah, but I guess there should be some sort of an activating part as well'. Elias agreed: 'Yeah, absolutely, that you do something yourself'. They also emphasised 'doing more concretely these things', e.g. through a zero-waste campaign. Laura summarised the difficult paradox of knowing what would be for the good and not acting accordingly:

On an individual level, it is, of course, so easy to say not to consume, not to buy, not to do this, not that, but how can we, like, influence the individual? In my opinion, that's what makes it **such a difficult thing, that it's clearly not enough that we share the theory** that these things are bad things because for some reason, **we still don't act accordingly**. [...] **I don't even know how I could influence my own behaviour**, like, in a really permanent way. There are periods when I'm, like, OK, now I'm living super according to sustainable development, but then a month later, I've completely forgotten about it.

Emma, Nea and Laura seemed to share the narrative of 'taking root deeper', while Elias voiced a counter-narrative. On various occasions, he said that in mathematics, his discipline, it is not necessarily possible to address these issues, arguing that 'probably in mathematics, you focus on mathematics and leave those things, focus on this consumer behaviour in other subjects'.

In addition to viewing the teaching of mathematics as detached from ecological perspectives, Elias said that these themes need not touch every pupil, which we interpreted as being part of Elias' counter-narrative. While Nea talked about whether schools could be environments that encourage future adults to innovate more ecological alternatives, and Emma voiced ideas about eliciting deeper thought and change, Elias

answered, 'Not everyone needs to get excited, but if you could get some excited and then offer them more information or something like that'. The group's main narrative and Elias' counter-narrative are illustrated in Figure 5.

PSTs co-constructing their position in the future of education

As ambivalence and counter-narrative were central to our findings, we also began to see the narratives and positioning through antonyms. These included passive vs. active orientations to change, as well as individual vs. societal perspectives, subject-oriented action vs. action embedded in the whole operational culture and challenge vs. solution (see Figure 6). Such antonyms formed dynamic tensions within the collaborative narratives, and the societal position was difficult for PSTs. In this section, we focus mostly on the passive vs. active positioning.

Both groups talked about how **little power** they, as teachers or individuals, will have on societal matters. The Digitalisation Group discussed how difficult it is to anticipate developments and how they should just 'accept it all, but semi-cautiously' (see Figure 3), as Ella stated:

Of course you need to be critical and [consider] what is too much. But then again, **it's a fact that all the time, this situation just goes more to the, like, digital thing.** Help me, I can't speak, but all the time, more and more of those things are done on the Internet. So yeah, it's

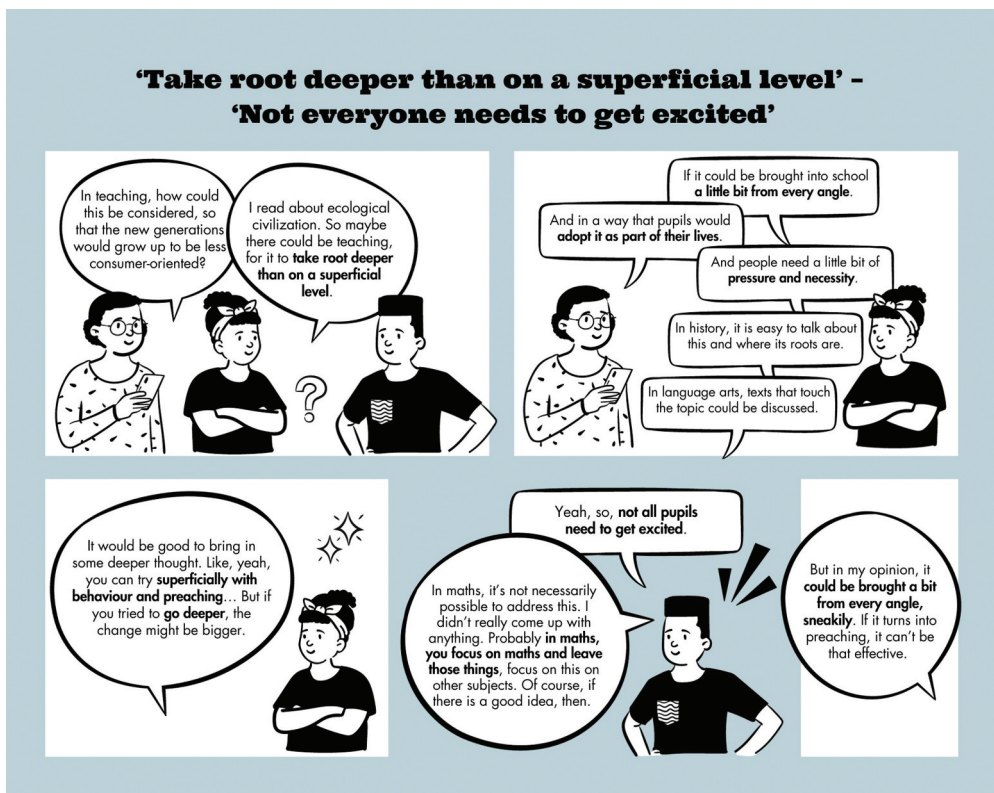


Figure 5. Consumer behaviour group, narrative and counter-narrative.

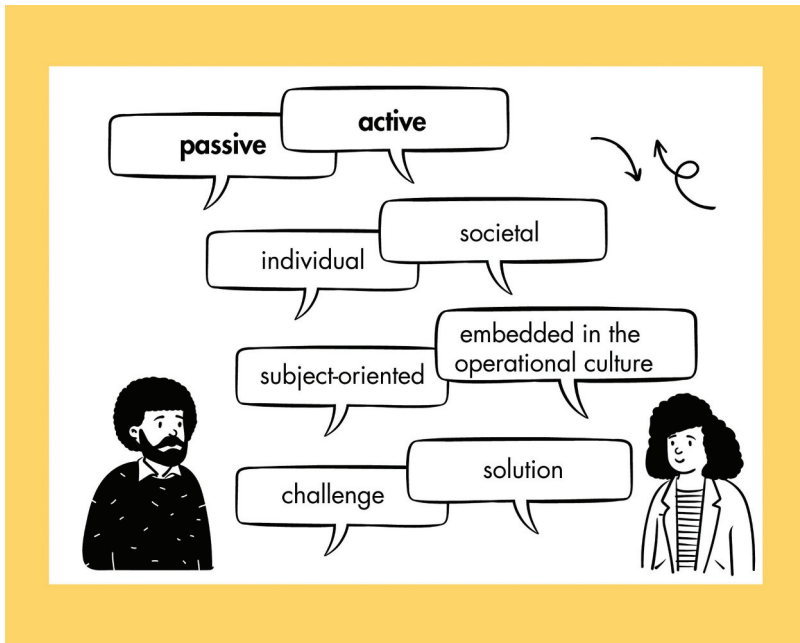


Figure 6. Antonyms found in the narratives.

pointless to forcefully try to be like, 'I think none of it is good' because **you, as the only single person, can't prevent it anyway.**

This seems to reflect a certain kind of technological determinism, in which changes just happen and, as Sara stated, 'you just go along with that change'. The group also described, in several instances, how mobile phones have become 'extensions of the hand' and have 'grown into the hands'. They considered how difficult it would be to limit the use of mobile phones, the Internet and other technology in education.

In a similar vein, the Consumer Behaviour Group expressed the difficulty in influencing ecological perspectives 'solely at school'. The following excerpt is from the moment when the teacher educator is having a discussion with the group and has introduced some perspectives related to transversal competencies and identity work through consumption:

Emma: This topic is **so difficult because this is so, like, outside the school**, that it's so strongly related to everything in the environment, and ...

[...]

Laura: Exactly, that **we alone in the school are not able to influence that issue**, but ...

Emma: Yeah, that it should be on the whole socie- or like ...

Later in the conversation, Nea said that she was 'terribly distressed' about the difficult and abstract topic. This evoked thoughts about being a societal agent:

Emma: Yeah, and also the, well, the questions were quite challenging as well: 'What kind of a societal agent are you' [laughter]?

Laura: I don't act as a societal agent [laughter].

Nea: I'm an amoeba [laughter].

This is clearly a humorous and even carnivalistic account of the difficult issue. Simultaneously, it reflects the position that PSTs take. If we put together Elias' counter-narratives and the conceptions of the little power that PSTs view themselves and/or the school as having, the overall image is rather **passive**. However, as a counterpart to the passive stance, we highlight three findings that suggest a more **active** position: (1) the focus on action and learning by doing instead of just knowing (both groups); (2) the idea of rooting ecological perspectives deeper (Consumer Behaviour Group) and (3) viewing teachers and Finnish society as capable of making a difference (Digitalisation Group).

Sofia raised both aspects of the latter, arguing that teachers who 'do the work in practice, who live every day with the books, with the children and with online books and platforms', could be more involved in developing digitalisation in schools. Moreover, she embraced the 'terribly good information technology knowhow' in Finland: 'In Finland, it would be possible to develop tools that would be so much safer for children and youths compared with corporate organisations, Google, Zoom, Teams etc'. And the terms and conditions could be made 'fair and really safe'. These ideas do not reflect an active 'we' position, but rather an indirect idea of being part of the change by identifying with these groups. The more active stance is voiced in the other two aspects, focussing on action and taking root more deeply.

Discussion and conclusions

In this study, we examined PSTs' narratives about the future of education in relation to two megatrends: digitalisation and ecological sustainability. The narratives were composed based on online video-based collaborative discussions among PSTs. We also studied how PSTs co-constructed their positions in the future. Through data-driven qualitative analysis and narrative analysis, we found that the PSTs (1) viewed digitalisation in education strongly through antonyms and ambivalence (good and useful vs. bad and dangerous), (2) emphasised critical media literacy, (3) viewed ecological perspectives through a main and counter-narrative (taking root more deeply vs. not everyone needs to get excited) and (4) emphasised the role of action and learning by doing. In terms of positioning, dynamic tensions were found between, e.g. passive and active positions and individual and societal perspectives on change. We discuss our findings in the light of identity work and education for democracy and sustainability.

In their collaborative negotiations while collectively sketching their future possible selves (Lee and Schallert 2016) and identities in-the-making (Bamberg and Georgakopoulou 2008), the PSTs encountered and voiced many tensions. Indeed, researchers have described the process of PSTs' identity negotiations through tensions and as a struggle (Akkerman and Meijer 2011; Beijaard, Meijer, and Verloop 2004), in line with our results. The PSTs described the societal issues at hand as very difficult and challenging. Tensions can be unsettling and distressing, but also fruitful in terms of identity growth and learning (Akkerman and Meijer 2011; Galman 2009), metacognitive awareness (Alsup 2006) and transformative learning (Mezirow 2000). In our previous study

(Lehtinen, Kostiainen, and Näykki 2023), we found that dissonance expressed by the teacher educator led to higher-level knowledge co-construction and metacognitive statements.

Ambivalence was central to our results. One goal of TE might be to help teachers cope with the ambivalence and uncertainty associated with a changing society and education (see also Aly et al. 2022). As Walker and Shove (2007) argue, in creating a sustainable and democratic future, ambivalence and constantly evolving goals could be harnessed, rather than eliminated, because ambivalence is essential for reflexivity. Dynamic, questioning and critical policies may be difficult, but they are still better than unquestioning certainty (Walker and Shove 2007).

In our data, we found a lot of ambivalence and questioning around digitalisation, and the PSTs emphasised critical media literacy. This is somewhat in contrast to previous studies, which indicated that only a minority of PSTs defined digital literacy as something that required critically reflective technology use (List, Brante, and Klee 2020; see also Castellví, Díez-Bedmar, and Santisteban 2020). Collaborative learning may have facilitated critical thinking (Lehtinen, Kostiainen, and Näykki 2023; Yukawa 2006), distinct from previous studies which were based on individual questionnaires.

Related to dissonance and antonyms, Elias voiced a counter-narrative to his peers, who talked about embedding ecological perspectives more deeply in education. This resembles the scene depicted by Galman (2009), in which two competing stories caused dissonance – that of a progressive TE programme, valuing transformative and agentic work for change and social justice, and that of bureaucratic practice, in which teachers do not ‘rock the boat’ within the institution. In our context, the TE department seeks to support transformative agency, and the narrative of embedding societal aspects of education more deeply is consistent with this. It seems that Elias rejected this ‘transformative agent narrative’ or perhaps superficially adopted some components of it (see Stillman and Anderson 2015). Elias used disciplinary boundaries to justify his counter-narrative. Researchers have argued that to create a sustainable and socially just future, we need to cross disciplinary boundaries and broaden epistemological perspectives (Lotz-Sisitka et al. 2015).

Overall, our findings indicated that PSTs hold a somewhat passive position towards societal issues. For example, changes related to digitalisation were viewed as inevitable facts that one cannot prevent from happening. PSTs’ attitude reflected a certain technological determinism, an ‘idea of technology as an independent entity, a virtually autonomous agent of change’ (Marx and Smith 1994, xi). They even made ironic statements about not acting as a societal agent, but rather as being an amoeba. In this way, they distanced themselves from the transformative and societal teacher role. The societal or sociological level of education is understandably difficult in initial TE (Brennan and Canny 2023) and given that most of secondary school teachers’ training focusses on their discipline (e.g. mathematics or languages). However, the passive position that we found is in line with previous studies in Finland, which have indicated that education for active citizenship or democracy is, to some extent, peripheral in the school culture or in teachers’ conceptions of their work (Fornaciari and Rautiainen 2020; Männistö and Moate 2023).

While schools’ role is crucial in ensuring the future of democracy amid wicked problems (Aly et al. 2022), it is, of course, true – as the PSTs noted – that schools *alone* cannot influence these developments. Broad policy frames are also needed (Aly et al.

2022). In any case, teachers do act as meaningful mediators between policy and practice (Stillman and Anderson 2015). Furthermore, we would like to highlight that the myriad demands that teachers encounter can lead to excessive stress. As Stillman and Anderson (2015) suggested, there are consequences if we ask too much of teachers when they are under pressure and public scrutiny while working intensively, without sufficient support for their own learning. This is an ongoing discussion in Finland. In TE, too much dissonance can lead to undesirable outcomes, and if students cannot negotiate the dissonance, it can lead to dropping out from their TE programme (Alsop 2006; Galman 2009). Teacher educators should understand that power is not distributed equally between staff and students and competing stories (Galman 2009). Teacher educators' sensitivity is needed to sit with and encourage students' patience when becoming teachers (Galman 2009).

Finally, we also found indications of a more active position towards societal issues, one of which was that both PST groups emphasised the role of action. This is an important finding, as research has indicated that attitudes alone are not enough to build a sustainable lifestyle and because many educational interventions tend to focus on knowledge and attitudes instead of action (Kranz et al. 2022). According to Kranz et al. (2022), sustainability education is lacking a focus on political literacy and civic and public-sphere action. Thus, the idea that socially oriented perspectives may be overlooked is an issue beyond the Finnish context. Furthermore, PSTs not only recognised the importance of action, but also argued that teachers should be more involved in schools' digitalisation development. This participatory decision-making role of teachers across different school activities reflects democratic ideas about schooling (Aly et al. 2022). Overall, it seems that collaborative, transformative agency cues were present (Brevik et al. 2019). Thus, ambivalence persists, as we observed the PSTs in our study as being both passive and active.

Methodologically, our study contributes to the use of creative and narrative methods in analysing collaborative learning situations and to the field that studies PSTs' orientation to societal changes. We are aware that our experiences and positions as teacher educators influence our interpretations. We are all insiders concerning the 'transformative TE department', but none of us taught the studied group, and we used investigator triangulation during various phases. In our study, the discussion data between peers may have elicited more authentic insights into beliefs than, e.g. interviews (see Bamberg and Georgakopoulou 2008). Nevertheless, future studies could triangulate the data from multiple data collection methods, e.g. written accounts. It would also be fruitful to collect similar data from various countries to gain a more comprehensive view of PSTs' narratives and positioning and about the impact different contexts can have on them. Our qualitative and narrative study does not aim to generalise our conclusions, but to provide an in-depth understanding of the studied phenomena in a unique setting (Patton 2002), to develop methodology and to offer a starting point for further research. Future studies could use longitudinal study designs, which could provide valuable information about evolving narratives and how PSTs continue to navigate ambivalence and uncertainty. However, analysing stories in initial TE affords examining the imaginative rehearsal (Goffman 1963) of what education should be like before PSTs gain more experience in teaching practice (Galman 2009). Another future perspective is to make uncertainty the focal point of PSTs' collaborative discussions and the study.

Narrative analysis enabled us to examine PSTs 'in the complexities of lived moments of struggle' (Bochner and Ellis 2003, 509). We hope that these narratives and creative pieces – comic strips created in the analysis – can be used as thinking tools in TE (Moen 2006), facilitating explicit discussion of the different stories we tell (Galman 2009) about the uncertain future.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by The Emil Aaltonen Foundation.

Notes on contributors

Auli Lehtinen is a doctoral researcher at the Department of Teacher Education, University of Jyväskylä, Finland. She has been working as a university teacher in pre-service and in-service teacher education programmes. Her research interests include collaborative learning, socioemotional and critical thinking perspectives in teacher education and creative methods.

Emma Kostainen PhD (Communication Sciences), is a university lecturer at the Department of Teacher Education, University of Jyväskylä, Finland. Her teaching and research interests include developing social interaction competence and its importance for future school development, constructing the learning community, meaningful, collective, collaborative and creative learning in teacher education.

Anne Martin PhD (Educational Sciences), is a university teacher at the Department of Teacher Education, University of Jyväskylä, Finland. Her research interests are (teachers') professional development, narrative identity work and supporting these through creative expression. Methodologically, Anne is drawn to qualitative methods and especially narrative and arts-based research.

Piia Näykki is an associate professor at the Department of Teacher Education, University of Jyväskylä, Finland. Her research focuses on learning and interaction processes in digital learning. In particular, technology-enhanced collaborative learning and process-oriented approach to cognitive, emotional and motivational challenges and regulation strategies in group interactions.

ORCID

Auli Lehtinen  <http://orcid.org/0000-0002-4027-8723>

Ethical statement

All procedures performed involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Per the ethical regulations of the participating organisation, separate ethical statement was not needed.

References

- Akkerman, S. F., and P. C. Meijer. 2011. "A Dialogical Approach to Conceptualizing Teacher Identity." *Teaching & Teacher Education* 27 (2): 308–319. <https://doi.org/10.1016/j.tate.2010.08.013>.
- Aldemir, T., M. Borge, and J. Soto. 2022. "Shared Meaning-Making in Online Intergroup Discussions Around Sensitive Topics." *International Journal of Computer-Supported Collaborative Learning* 17 (3): 361–396. <https://doi.org/10.1007/s11412-022-09375-9>.
- Alsup, J. 2006. *Teacher Identity Discourses: Negotiating Personal and Professional Spaces*. New Jersey, USA: Routledge.
- Aly, A., J. Blackmore, D. Bright, D. Hayes, A. Heffernan, B. Lingard, S. Riddle, K. Takayama, and D. Youdell. 2022. "Reflections on How Education Can Be for Democracy in the Twenty-First Century." *Journal of Educational Administration and History* 54 (3): 357–372. <https://doi.org/10.1080/00220620.2022.2084052>.
- Arvaja, M., and R. Hämäläinen. 2021. "Dialogicality in Making Sense of Online Collaborative Interaction: A Conceptual Perspective." *The Internet and Higher Education* 48:100771. <https://doi.org/10.1016/j.iheduc.2020.100771>.
- Arvaja, M., A. Sarja, and P. Rönnerberg. 2022. "Pre-Service Subject Teachers' Personal Teacher Characterisations After the Pedagogical Studies." *European Journal of Teacher Education* 45 (5): 653–669. <https://doi.org/10.1080/02619768.2020.1860010>.
- Bamberg, M., and A. Georgakopoulou. 2008. "Small Stories as a New Perspective in Narrative and Identity Analysis." *Text & Talk* 28 (3): 377–396. <https://doi.org/10.1515/TEXT.2008.018>.
- Beijaard, D., P. C. Meijer, and N. Verloop. 2004. "Reconsidering Research on Teachers' Professional Identity." *Teaching & Teacher Education* 20 (2): 107–128. <https://doi.org/10.1016/j.tate.2003.07.001>.
- Bochner, A. P., and C. Ellis. 2003. "An Introduction to the Arts and Narrative Research: Art as Inquiry." *Qualitative Inquiry* 9 (4): 506–514. <https://doi.org/10.1177/1077800403254394>.
- Brennan, A., and A. Canny. 2023. "Problematising Irish Student-teachers' (Dis)engagement with Sociology of Education in Initial Teacher Education Programmes." *Teaching & Teacher Education* 130:104173. <https://doi.org/10.1016/j.tate.2023.104173>.
- Brevik, L. M., G. B. Gudmundsdottir, A. Lund, and T. A. Strømme. 2019. "Transformative Agency in Teacher Education: Fostering Professional Digital Competence." *Teaching & Teacher Education* 86:102875. <https://doi.org/10.1016/j.tate.2019.07.005>.
- Castellví, J., M.-C. Díez-Bedmar, and A. Santisteban. 2020. "Pre-Service Teachers' Critical Digital Literacy Skills and Attitudes to Address Social Problems." *Social Sciences* 9 (8): 134. <https://doi.org/10.3390/socsci9080134>.
- Clarke, V., and V. Braun. 2018. "Using Thematic Analysis in Counselling and Psychotherapy Research: A Critical Reflection." *Counselling and Psychotherapy Research* 18 (2): 107–110. <https://doi.org/10.1002/capr.12165>.
- Fornaciari, A., and M. Rautiainen. 2020. "Finnish Teachers as Civic Educators: From Vision to Action." *Citizenship Teaching and Learning* 15 (2): 187–201. https://doi.org/10.1386/ctl_00028_1.
- Furuhagen, B., J. Holmén, and J. Sääntti. 2019. "The Ideal Teacher: Orientations of Teacher Education in Sweden and Finland After the Second World War." *History of Education* 48 (6): 784–805. <https://doi.org/10.1080/0046760X.2019.1606945>.
- Galman, S. 2009. "Doth the Lady Protest Too Much? Pre-Service Teachers and the Experience of Dissonance as a Catalyst for Development." *Teaching & Teacher Education* 25 (3): 468–481. <https://doi.org/10.1016/j.tate.2008.08.002>.
- Gee, J. P. 2000. "Chapter 3: Identity as an Analytic Lens for Research in Education." *Review of Research in Education* 25 (1): 99–125. <https://doi.org/10.3102/0091732X025001099>.
- Georgakopoulou, A. 2006. "Thinking Big with Small Stories in Narrative and Identity Analysis." *Narrative Inquiry* 16 (1): 122–130. <https://doi.org/10.1075/ni.16.1.16geo>.
- Goffman, E. 1963. *Stigma: Notes on the Management of Spoiled Identity*. New York, USA: Simon and Schuster.
- Gretschel, A., M. Rautiainen, L. Vanhanen-Nuutinen, and K. Tarvainen. 2023. *Democracy and Human Rights Education in Finland: A Review with Recommendations*. Helsinki, Finland: Prime Minister's Office. <http://urn.fi/URN:ISBN:978-952-383-329-6>.

- Heikkilä, M., T. Iiskala, M. Mikkilä-Erdmann, and A. Warinowski. 2022. "Exploring the Relational Nature of Teachers' Agency Negotiation Through Master- and Counter-Narratives." *British Journal of Sociology of Education* 43 (3): 397–414. <https://doi.org/10.1080/01425692.2022.2038541>.
- Kranz, J., M. Schwichow, P. Breitenmoser, and K. Niebert. 2022. "The (Un)political Perspective on Climate Change in Education: A Systematic Review." *Sustainability* 14 (7): 4194. <https://doi.org/10.3390/su14074194>.
- Lee, S., and D. L. Schallert. 2016. "Becoming a Teacher: Coordinating Past, Present and Future Selves with Perspectival Understandings About Teaching." *Teaching & Teacher Education* 56:72–83. <https://doi.org/10.1016/j.tate.2016.02.004>.
- Lehtinen, A., E. Kostiaainen, and P. Näykki. 2023. "Co-Construction of Knowledge and Socioemotional Interaction in Pre-Service Teachers' Video-Based Online Collaborative Learning." *Teaching & Teacher Education* 133:104299. <https://doi.org/10.1016/j.tate.2023.104299>.
- List, A., E. W. Brante, and H. L. Klee. 2020. "A Framework of Pre-Service Teachers' Conceptions About Digital Literacy: Comparing the United States and Sweden." *Computers & Education* 148:103788. <https://doi.org/10.1016/j.compedu.2019.103788>.
- Lotz-Sisitka, H., A. E. Wals, D. Kronlid, and D. McGarry. 2015. "Transformative, Transgressive Social Learning: Rethinking Higher Education Pedagogy in Times of Systemic Global Dysfunction." *Current Opinion in Environmental Sustainability* 16:73–80. <https://doi.org/10.1016/j.cosust.2015.07.018>.
- Männistö, P. M., and J. Moate. 2023. "A Phenomenological Research of Democracy Education in a Finnish Primary-School." *Scandinavian Journal of Educational Research* 68 (5): 1025–1038. <https://doi.org/10.1080/00313831.2023.2196525>.
- Marx, L., and M. R. Smith. 1994. "Introduction." In *Does Technology Drive History?: The Dilemma of Technological Determinism*, edited by M. R. Smith and X. Leo Marx, ix–xv. Cambridge, USA: MIT Press.
- Matikainen, M., P. Männistö, and A. Fornaciari. 2018. "Fostering Transformational Teacher Agency in Finnish Teacher Education." *International Journal of Social Pedagogy* 7 (1). <https://doi.org/10.14324/111.444.ijsp.2018.v7.1.004>.
- Mayer, F. W. 2014. *Narrative Politics: Stories and Collective Action*. New York, USA: Oxford University Press.
- Mezirow, J. 2000. "Learning to Think Like an Adult." In *Learning as Transformation: Critical Perspectives on a Theory in Progress*, edited by J. Mezirow, 3–33. San Francisco, USA: Jossey-Bass Publishers.
- Miles, M. B., A. M. Huberman, and J. Saldaña. 2020. *Qualitative Data Analysis. A Methods Sourcebook*. 4th ed. Thousand Oaks, CA, USA: Sage.
- Moen, T. 2006. "Reflections on the Narrative Research Approach." *International Journal of Qualitative Methods* 5 (4): 56–69. <https://doi.org/10.1177/160940690600500405>.
- Naughtin, C., S. Hajkowicz, E. Schleiger, A. Bratanova, A. Cameron, T. Zamin, and A. Dutta. 2022. *Our Future World: Global Megatrends Impacting the Way We Live Over Coming Decades*. Brisbane, Australia: CSIRO.
- Patton, M. Q. 2002. *Qualitative Research & Evaluation Methods*. 3rd ed. Thousand Oaks, CA, USA: Sage.
- Raiker, A., and M. Rautiainen. 2017. "Education for Democracy in England and Finland." In *Educating for Democracy in England and Finland: Principles and Culture*, edited by A. Raiker and M. Rautiainen, 1–16. New York, USA: Routledge.
- Slaughter, R. A. 1993. "Looking for the Real 'Megatrends'." *Futures* 25 (8): 827–849. [https://doi.org/10.1016/0016-3287\(93\)90033-P](https://doi.org/10.1016/0016-3287(93)90033-P).
- Smith, B. 2016. "Narrative Analysis." In *Analysing Qualitative Data in Psychology*, edited by E. Lyons and A. Coyle, 202–221. 2nd ed. London, UK: SAGE.
- Stillman, J., and L. Anderson. 2015. "From Accommodation to Appropriation: Teaching, Identity and Authorship in a Tightly Coupled Policy Context." *Teachers & Teaching* 21 (6): 720–744. <https://doi.org/10.1080/13540602.2015.1044330>.

- Tatalovic, M. 2009. "Science Comics as Tools for Science Education and Communication: A Brief, Exploratory Study." *Journal of Science Communication* 8 (4): A02. <https://doi.org/10.22323/2.08040202>.
- Von Groddeck, V., and J. O. Schwarz. 2013. "Perceiving Megatrends as Empty Signifiers: A Discourse-Theoretical Interpretation of Trend Management." *Futures* 47:28–37. <https://doi.org/10.1016/j.futures.2013.01.004>.
- Walker, G., and E. Shove. 2007. "Ambivalence, Sustainability and the Governance of Sociotechnical Transitions." *Journal of Environmental Policy & Planning* 9 (3–4): 213–225. <https://doi.org/10.1080/15239080701622840>.
- Wortham, S. E. F. 2001. *Narratives in Action: A Strategy for Research and Analysis*. New York, USA: Teachers College Press.
- Yukawa, J. 2006. "Co-Reflection in Online Learning: Collaborative Critical Thinking as Narrative." *International Journal of Computer-Supported Collaborative Learning* 1 (2): 203–228. <https://doi.org/10.1007/s11412-006-8994-9>.

Appendix

Appendix 1. Data examples

Code	Data examples (entire original turns, English translations)
Conception of schools' current state or future direction	Elias: 'Yeah, there really isn't that kind of unnecessary consuming at school, at least in my opinion'. Sara: 'And then it came to my mind that there are all kinds of, like, learning tools that are digital. For example, some, I don't know, well, the kinds that, like... From a very young age, nowadays kids have such tools that help, and so'.
Conception of society's current state or future direction	Sofia: 'And then I thought, OK, I've been thinking about this from quite funny perspectives, but like employment, jobs. For example, if [Finnish social insurance institution] or social security services move more and more online, will that affect society for better or for worse?'
Personal experiences	Ella: 'And somehow, for me, it was quite interesting that, or like, at least for me, the phone has grown into my hand, and then somehow, I can't even be in a lecture without checking for messages. So, how hard can it be for the kids, when they don't even have the sort of, that they could themselves think a little like, OK, yeah, if I now check my phone and miss this, then I will have to study this all by myself. They don't even have this kind of, like, "Oh, damn, now I will miss this if I check my phone". And it's just somehow really hard to be, at the moment, studying somewhere else than the university because the phone has grown so badly into my hand'. (also coded: conception of schools' current state or future direction)
Evaluation/ideal/suggestion of/for the future of education in relation to the megatrend	Sara: 'No, but what you said, that kind of, like, there is a sort of, or like ... Since there is, anyway, the possibility of using it [the Internet and applications], so the thing is that we could guide the pupils in the future, for example, so that we would be able to advise how to use it. And this kind of, well, then it is just, like ...' Sara: 'But I still don't know. I can't think that far ahead about, like, how it's going to develop because it's developing so fast and so unpredictably anyway that I can't really think about what the changes are going to be, but that is exactly the good thing that it becomes, sort of, equal for all. So, that's just, like ...' (also coded: conception of schools' current state or future direction)
Conception of the relationship between phenomena	Elias: 'It feels like, with this topic, that you can come up with a zillion problems and so on, but it's a lot harder to come up with how to, somehow, influence these things and how they could be changed and so on'. Nea: 'Well, I thought about this. I think that maybe it isn't exactly the case that this only applies to school, but rather this is more broadly, like, sort of a societal background assumption, this consumer behaviour'. (also coded: conception of society's current state or future direction) Laura: 'That is a bit of a mixture between the individual and the school [as a perspective], so for the individual, it appears as a kind of group pressure, but in the school, it somehow kind of expands'. (also coded: conception of schools' current state or future direction)
Perspective of school subject(s)	Emma: 'Well, at least in history, the kind of environmental ... environmental history could be brought forth more in teaching, is at least what I thought'. (also coded: Evaluation/ideal/suggestion) Laura: 'Well, I intend to graduate as a teacher of biology and

(Continued)

Code	Data examples (entire original turns, English translations)
	geography at some point, so it's pretty obvious how it will come up there, that it will, of course, come up in that subject. But then in IT, I think it was Elias who mentioned that you could basically talk about, for example, how does information technology last or how to make information technology last longer. And, like, for example, people talk about how companies intentionally make devices that don't last, that are not, like, long-lasting, so to discuss that sort of things'. (also coded: Evaluation/ideal/suggestion)

Appendix 2. Canva credits

Comics template 'Narrative Writing Comic Strip in Colourful Bold Panel Style', made by Rachel Mainero.

Figures within the comic strips made by Pablo Stanley.

Speech bubbles and small illustrations made by Enna Marnawati, Jenzon Lopez and Sketchify.