



# Student assistants in Future Classroom Labs moving between figured worlds and becoming a resource for developing professional digital competence in teacher education

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## Abstract

This article examines student teachers employed as student assistants in initial teacher education (ITE) in Future Classroom Labs (FCL) in Norway, and aims to explore their participation in different *figured worlds* as students and student assistants respectively, but also what ITE could potentially gain from employing such student assistants. The data gathered are 15 qualitative interviews with student assistants and FCL managers in ITE. The study takes an activity-theoretical and cultural psychological approach to their situated learning, and their navigation through and between the different figured worlds in which they take part. The study shows that student assistants, understandably, enter the job with a student perspective, but that they, over the course of their employment in the FCL, develop a new perspective (a development perspective), giving them a unique, dual perspective as both student and teacher educator. The study suggests that the student assistants can contribute to both overcoming the student-educator dichotomy and bridging elements of the theory-practice gap. The study also highlights how the *third space* of digital technology and the FCL could potentially blur the same dichotomy. Meanwhile, it shows some potential conflicts related to role confusion, if the responsibilities and expectations of students and educators are not clearly mapped and communicated. Yet overall, the study suggests potential with having student assistants in FCLs in ITE.

## Keywords

initial teacher education, student assistant, future classroom lab, professional digital competence, figured world

## Introduction

We are facing a global challenge in educating future generations for workplace practices and jobs that do not yet exist (OECD, 2017). According to the OECD (2017) and the European Commission (European Commission, 2020), globalization and deindustrialization are changing the skills and competences needed for the future, which must be somehow integrated into initial education. Digital competencies are considered an important way to prepare for an increasingly digital and global job market, and to transform learning and society, not just for a selected group of people, but for all citizens, with a lifelong perspective. This is the dominant view in Norway (Ministry of Children and Education, 2018; Ministry of Education and Research, 2015) as well as in the other Nordic countries (Bocconi, Chiocciariello, & Earp, 2018). In Norway, a 2013 report showed that newly qualified teachers only developed their digital competence to a limited extent in initial teacher education (ITE)

(Guðmundsdóttir et al., 2014), and this was supported by other findings in Norway (Tømte et al., 2013) and in other countries (Danish Technological Institute, 2012; Hammond et al., 2011; Røkenes & Krumsvik, 2014; Tondeur et al., 2011).

This led the Norwegian government to put significant effort into increasing professional digital competence (PDC) with teachers in schools and particularly in Higher Education (HE) (Kelentrić et al., 2017; Ministry of Education and Research, 2018; Tømte et al., 2019). In a recent study (Daus et al., 2019), teacher educators were asked how they perceived their own PDC and how they integrated ICT in their teaching. Some improvement in PDC in Norwegian teacher education was seen, although the study also shows that there still is some work to be done before PDC is properly integrated. The role of Future Classroom Labs (FCLs) in Norwegian ITE must be understood in the context of a pressing need to develop PDC for both students and educators in ITE; FCLs are one way of addressing this.

### **Norwegian Future Classroom Labs**

Historically, the FCL was first developed by European Schoolnet in Brussels (Lewin & McNicol, 2014; Van Assche et al., 2015), to “rethink the role of pedagogy, technology and design in their [the teachers’] classrooms” (Future Classroom Labs, n.d.), to create innovative pedagogical approaches involving digital technology in creative learning spaces, and build skills and competences for the future. In FCLs, students explore problems, produce ideas and create projects while integrating technology in the process (Ayre, 2017). As the interviews with FCL project managers for this study revealed, FCLs have challenged the traditional roles of teacher and student, by giving students more independence and control in the learning process taking place in the FCLs. This seems to also be reflected in the employment of student assistants, who participate in running and developing the FCL.<sup>1</sup> Previous research into FCLs has focused on the dialectic between the physical classroom space and pedagogical practice (Baeta & Pedro, 2017; Göçen et al., 2020; Sardinha et al., 2017) and professional development aspects (Senra & Braga, 2020), but the role of student assistants has so far only been explored to a limited extent (Sourdout & Smith, 2019).

### **Student assistants working in FCLs**

The student assistants working in FCLs have the primary task of teaching students and educators how, when and why to use digital technology or, in other words, to contribute to developing the PDC of other students and educators. Different universities have different ways of organizing it, but the basic functions of the student assistants are to be present in the FCL for visiting students and educators, to do workshops, and to support visitors when they need help with using digital technology for teaching and learning. This rather active role of student assistants in running the FCLs and developing PDC in ITE was challenged by a colleague of an FCL project manager who asked, “Why are we letting student teachers teach educators and students when they are students themselves?”<sup>2</sup> The question fore-

1. The Norwegian FCLs in ITE have been built in the last seven years: The Arctic University of Norway, 2014; The University of Stavanger, 2017; The University of South-Eastern Norway, 2018; The University of Agder, University College Volda and University College Vestlandet, 2019.

2. Mentioned in a discussion at the Norwegian national FCL network meeting at University of Stavanger, September 2017.

grounds the paradox of employing student teachers in ITE to teach and develop the very teaching programs in which they are enrolled. In a traditional perspective, students are perceived to be on the receiving end of the educational relationship, being taught by someone senior (Bruner, 1996; Wake et al., 2007), but as student assistants they are supposed to help drive ITE forward and increase PDC with students and educators, and this creates a paradox. The comment cited above called attention to these conflicting perspectives, and it led to this study aiming at exploring the roles, the potential, and the challenges brought to ITE by this paradox with the following research questions:

- What characterizes the perspectives that student assistants bring to the job through their participation in different *figured worlds*?
- What are the potential benefits and challenges arising from these perspectives and the student assistants' role in the future classroom labs?

### Reader's guide

The following sections present the theoretical perspectives that are applied in the study, as well as the data used to answer the research questions. In the findings, the objects and motives of the student assistants are explored and related to their participation in different figured worlds, revealing a unique, dual perspective. The findings also address the benefits and challenges of having student assistants in ITE, such as challenging the dichotomy of educator and student and bridging the theory-practice gap in ITE.

### Theoretical perspective

Theoretically, this article draws on an activity-theoretical perspective based on the ideas of Leont'ev (1978, 1981/2009). More specifically, the study applies the concepts of *object* and *motive* in order to further understand what guides the student assistants in their activities. In an activity-theoretical perspective, an activity cannot exist without having an object which again is related to a specific need (Leont'ev, 1981/2009). The object is what constitutes the activity since there is no such thing as an objectless activity (Leont'ev, 1978). Through this lens, the object becomes what we direct ourselves towards, something we strive for and are oriented towards realizing. Again, as our activities are oriented towards fulfilling the object, we perform actions within these activities which are stimulated by our motives. As such, motives can be understood as the link between an object and our actions (Leont'ev, 1981/2009, p. 190).

This analytical framework is supplemented by a socio-cultural approach (Holland et al., 1998), which allows for viewing the experiences as situated in a larger context where individual and context are dialectically connected and dependent (Cole, 1996). This builds on an understanding of learning as culturally entangled, embedded, and situated (Rogoff, 1995, 2011) and by relating the dual objects and motives of the student assistants to Holland et al.'s (1998) concept of figured worlds, the study is given a deeper understanding of how the students' different perspectives were shaped and what implications they have. Through organized activities, the participants' social identities are shaped, as positions matter and "roles" are negotiated in these "as-if" worlds (Esbensen, 2015; Holland et al., 1998). Further, it is found that the concept of *third space* (Gutierrez et al., 1995) is useful when examining the possible benefits of the student assistants' dual perspectives. In its original conceptualization, it was used to describe the intersection between the teacher's and the student's perspec-

tives in a classroom situation. Third space helps conceptualize the type of common ground from which “the traditionally binary nature of the student and teacher script is disrupted” (Gutierrez et al., 1995, p. 453). In combination, the concepts of figured worlds and third space can guide an understanding of the complexities that the student assistants’ have to navigate and the implications this could have for ITE.

## Data and methods

### Interviews

This study consists of 15 qualitative semi-structured interviews with five student assistants employed at an FCL, two former student assistants who are now in-service teachers, and three project managers from three different FCLs in Norway. The interviews were conducted in 2019 and 2020, either in face-to-face situations, or via Skype, to minimize traveling. Seven of the interviews have previously been published as podcast episodes,<sup>3</sup> and the five remaining anonymous interviews were recorded subsequent to the podcast recordings. Some informants appear twice, as they were initially recorded for a podcast episode and then later invited to elaborate in a research interview. The interviews ranged in length from 15 to 80 minutes, depending on the setting as either podcast or research interview. In total, the material added up to 6.5 hours of recordings (26 minutes per interview/podcast recording on average), and it was transcribed by the author. The interviews were performed in Norwegian and the excerpts appearing in this article were translated by the author.

**Table 1** Type and number of informants, and the two types of interviews<sup>4</sup>

Type of informant	Total number of informants	Number of podcast interviews	Number of research interviews
Project managers	3	3	-
Current student assistants	5	3	3
Former student assistants, now teachers	2	1	2
Total	10	7	5

Since the data were intended to give access to the informants’ thoughts and experiences, a qualitative and semi-structured interview was chosen as the data gathering method. A set of about six questions for each of the three categories of informants<sup>5</sup> was developed to explore (1) what got them into the job initially, (2) what type of tasks they had been given, (3) what it was like to take on a new role, different from that of being a student, (4) what might have been difficult, (5) what thoughts they had looking back (for those now working as in-service teachers), and (6) their thoughts on the future of student assistants in ITE. The questions for the project managers were along the same lines but related to having student assistants.

The informants participating in the research interviews were promised anonymity, and the data collection was approved by the Norwegian Centre for Research Data. Since the Norwegian FCLs are relatively few and therefore easily identifiable, the informants have been

3. The author's podcast «Digitale Refleksjoner» [Digital Perspectives] [www.digitalerefleksjoner.no](http://www.digitalerefleksjoner.no)

4. Two informants did both a research interview and a podcast interview.

5. Currently student assistant (N=1), previously student assistant – now in-service teacher (N=2) and project managers (N=3).

given pseudonyms, and details such as age, subject taught, and place of employment have been excluded. Two or three student assistants from each of the three FCLs were asked to participate; only one declined. The informants were student assistants whom the author had met face to face in different settings and then invited to participate. The face-to-face encounter was considered a good starting point for making the informants feel comfortable in the interview setting.

### Research ethical considerations

At the time of the interviews, the author was employed at the Norwegian Directorate for Education and Training, and was also the initiator of a national network for FCLs in ITE. This could potentially have influenced the informants' answers and made them more inclined to answer positively and be supportive of the FCLs. Therefore, it was emphasized in the briefing before each interview that the intention was not to describe the FCL as a success or to gather positive narratives. Rather, the objective was to gain insight into informants' positive as well as negative experiences and thoughts. There were no indications in the interviews that the informants were giving particularly positive answers as they answered questions related to difficulties and challenges easily and seemingly without holding back. However, the fact that some of the interviews were done for a public podcast could potentially have made informants less inclined to be critical. This was addressed by inviting two of the students to also elaborate in an anonymous interview.

### Analytical approach

The analytical approach used in the study is inspired by Spradley's *Developmental Research Analysis* (1980), and involves moving between the empirical and the analytical fields, a process which Hasse calls "dancing between the empirical and the analytical field" (Hasse, 2011, p. 141). Hammersley and Atkinson (2019) refer to this as an iterative process because of the constant moving back and forth between the two fields. Meanwhile Strauss and Corbin (1998) describe such qualitative methods as a mix of both inductive and deductive processes, mainly because the researcher is influenced by his/her hypothesis. The initial hypothesis of this study was that ITE gained much from employing student assistants. This hypothesis was shaped through informal conversations with FCL project managers in the period of 2016 and 2019, and these conversations set the direction for the research questions.

Although having an initial hypothesis, it was considered important for the validity of the study and in line with the chosen methodology to move between the empirical and theoretical fields. This would allow the study to challenge the hypothesis, because the patterns and connections that the researcher had not noticed earlier are likely to appear through such an oscillating process (Hastrup, 1992).

The analytical work for this study was thus characterized by a search for patterns or *domains* (Spradley, 1980). A challenge in such processes is how the initial codes are often *mundane*, preliminary, and require further work to be improved (Hammersley & Atkinson, 2019). This process involves challenging the initial categories when they do not lead to a deeper understanding of the material. In the present study, the initial codes (*student*, *staff*, *tasks*, and *roles*) were tested on the material, but the nuances of the student assistants' roles and experiences did not appear in the preliminary analytical rounds. Therefore, the codes were revised for more analytical depth, and the final categories applied were:

- OBJECTIVE [What are the objectives of the student assistants for taking the job? And for staying in it?]
- CONTRIBUTION [What do the students bring to the job/the FCL?]
- PDC [How do they express their pedagogical thoughts on PDC?]
- ROLES [What roles, tasks and positions surface when talking about the work?]
- STATUS ON PDC IN ITE [What are the student assistants' experiences regarding how digital technology is used in ITE?]

## Findings

### Student objects and motives

One of the objectives, when interviewing the students, was to understand what was driving them to take the job and how that might have changed over time. When asking Axel<sup>6</sup> why he applied for the job, he answered: "I can develop myself [on the job] to become a good teacher in future classrooms." Lisa<sup>7</sup> supported Axel's perspective when she explained: "with a job like this, you learn a lot over several years that you can take with you into your teaching job after graduating." This was also reflected in interviews with other student assistants.

Through Leont'ev's concepts, we find that the object of an activity is what we direct ourselves towards, and therefore what we strive towards realizing. Connected to the object of an activity is the motive, which is what guides our actions towards realizing the object. Following this line of thought, one could understand taking the job as the motive for both Axel and Lisa to meet their object of becoming good teachers. Axel wants to become "a good teacher in future classrooms" and Lisa wants to build experience which will be relevant for her as a teacher. Lisa's statement suggests that her motive is centered on learning as much as possible, since learning and experiencing different things could improve her chances of doing a good job as a future teacher.

These orientations of object and motive reveal what is important to the student assistants and what they are oriented towards. In the case of Axel and Lisa, as well as the other student assistants in this study, it seems that becoming good teachers is the object for initially taking the job, and that the motive for doing the job is gaining valid experience and practice, which will enable them to realize the object. It seems fair to assume that the overall object of student teachers in general would be to become good teachers in the future, which would make Axel's and Lisa's perspective similar to that of ordinary student teachers. I have therefore chosen to call this a **student perspective**, as it is related to the nature of being a student and a generic student role in ITE.

### Dual perspectives

When the student assistants were asked about the work that they do, they brought up how they see themselves as being part of something bigger. For instance, Jan<sup>8</sup> said, "...I also think it is really cool to contribute to developing ITE." This represents a shift from the object of becoming a good teacher at an individual level to contributing to developing ITE at an institutional level. Susan<sup>9</sup> addresses this as well:

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6. Axel, 3<sup>rd</sup> year student, University B.

7. Lisa, student assistant, 4<sup>th</sup> year, University A.

8. Jan, former student assistant, now in-service teacher, University C.

9. Susan, student assistant, 3<sup>rd</sup> year, University B

One of our tasks is to guide and support the educators at the university. This is probably what is most important and useful to me, to help them with how they can use technology in this lab and to see how they plan their lessons.

The object here seems to be different from the more individualistic one (the student perspective connected to taking the job) to a more collectivistic one related to contributing and being part of developing and improving ITE at its core. The underlying motive also seems to be different from the student perspective where the motive was related to their own development as teachers. When the student assistants addressed doing the job, it seemed to be more about guiding, supporting and helping others develop their competences (“how they can use technology,” Susan, and “contribute to developing ITE,” Jan). This suggests a possible shift from the initial student perspective to what I choose to call *a development perspective*. In line with Leont’ev’s conceptualization, the different activities (applying for the job and later doing the job) would naturally call for different objects and motives. In this study, student assistants seem to acquire a new and additional perspective of development *through* doing the work. That they seem to have coexisting, dual perspectives oriented towards different objects and motives all related to the job as student assistants.

### Participating in figured worlds

The concept of figured worlds, will allow for an understanding of these coexisting, dual perspectives and how they were shaped. For instance, up to the point of accepting the job, the student assistants had participated in the figured world of student teachers, where their object of becoming a good teacher was likely shaped. As participants of this *figured world of students*, the student assistants would be regular students going to classes, taking part in colloquia, handing in papers, and taking exams. Yet once they joined the FCL, they would likely have entered into another figured world, this time that of the FCL. In this new figured world of educating and developing ITE, their existing positions, actions, and motives would continuously have been negotiated and renegotiated as participating in figured worlds does (Esbensen, 2015; Holland et al., 1998). In the *figured world of teacher educators* (as I have chosen to call it), the student assistants would be teaching educators, in-service teachers, and other students on how to use digital technology in order to increase their PDC.<sup>10</sup> Since the student assistants are at the same time regular students, they would be participating in both of these parallel figured worlds. This supports the idea of the student assistants having a dual perspective, because of participation in both figured worlds. An important point would be that one perspective does not replace the other, but that they rather coexist, and this coexistence is explored in the following.

Benefits and challenges of the students’ dual perspectives

### Theory-practice gap

A paradox is brought to light by Susan, when she explains how the *job* “can minimize the distance from being a student to starting your teaching job (...) it was a unique opportunity to prepare for when I graduate.” By using words like “minimizing the distance” and “to prepare,” Susan is expressing a similar object and motive for taking the job as previously addressed. But this also points to a built-in paradox of ITE, namely educating and preparing students through an academic education for a pedagogical profession requiring more than

10. “Teaching is our primary activity”, Lisa.

academic skills. This is often referred to as *the theory-practice gap*, and as an ongoing challenge for ITE (Korthagen, 2007; Wolff-Michael et al., 2014).

For Susan, the student assistant job appears to be a way of bridging this gap. Following this line of argument brings out the potential paradox of Axel, Lisa and Susan as student teachers feeling the need for more practical experience to feel prepared for their future jobs. In Susan's case, taking the job seems to be her motive for preparing herself because it *minimizes the distance*. In all fairness, neither one of them states that being an ordinary student would not have prepared them for teaching. One could also reasonably argue that it is no surprise that student teachers see the student assistant job as good preparation for their future teaching jobs, and subsequently that it does not have to reflect poorly on ITE. However, it does seem that having student assistants could potentially bridge some of the practice-theory gap because of what project manager "Y" describes as their "unique perspectives", because "they are [working] right in the middle of the same education in which they are also enrolled as students, and they go into practice in schools."<sup>11</sup> This highlights an area that could potentially be beneficial for both ITE, the FCL and the student assistants. This does, however, call for more exploration.

### **The dichotomy of student and educator**

As mentioned at the beginning of the article, a teacher educator expressed concern that University A was letting students run the lab, which could be seen as an expression of role confusion. This concern was also addressed in the interviews as when Axel explained:

It is a bit weird at times. You might find yourself teaching someone who had previously been teaching you. And there you are as a resource person to them. That can be a bit odd at first, but at the same time it is fun, because most of the educators are like, 'Oh wow, this is exciting. We want to know more!'

Jan described it this way:

It changes things when you are working alongside educators and you're not just a student. It creates a different relationship where suddenly I am more important and can take a stand and have an opinion. If I would have suggested a different way of teaching as a student, he would have grunted at me. But as a student assistant I can suggest things, and he is likely to accept it. You gain a totally different dynamic and possibilities.

What both Axel and Jan address here, relates to the cultural schemes and models of the often opposing discourses embedded in any figured world based on "stereotypical generalizations from past experiences" (Holland et al., 1998, p. 55). In this case, it is the *scheme* or *model* of educator and student as they are culturally scripted in a dichotomy where the educator is the most knowledgeable and the student is on the less knowledgeable, more passive and receiving end (Bernie & Paul, 1999). These culturally embedded traditions, schemes, and models for educators and students are challenged in situations such as this, where the roles are disturbed. Jan was familiar with the role of student, where suggesting changes to an educator's teaching practice is usually not welcomed, and when the roles were reversed in the context of the FCL, he found his suggestions and tips being welcomed.

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11. Y, project manager, University B



Both Jan and Axel both seem very aware that the reversed or changed roles happened in the context of the FCL and because of their new role. Jan explicitly mentions how he would have expected to have had a different experience had he met the educator outside the context of the FCL (“he would have grunted at me”, Jan). The context changes the options that they have (“You gain a totally different dynamic and possibilities”, Jan). Jan’s and Alex’ experiences with both figured worlds could explain how they are able to recognize what is happening and respond in a way that allows them to work together with the educators on more equal terms (“That can be a bit odd at first, but at the same time it is fun”, Alex). But also the situation and the collective focus on using digital technology seems to create a third space potentially erasing the dichotomy of educator and student. It seems plausible that the digital technology and the FCL mediates a third space, where the dichotomy of student and teacher dissolves.

### **A double-edged sword**

These examples indicate that the third space of the FCL and the digital technology, along with navigating the different figured worlds could potentially blur the dichotomy of student-teacher. At the same time, erasing this dichotomy creates some challenges as brought up by Axel:

It is problematic that the teachers expect us to do the teaching when they arrive [with a group of students]. We have probably not been clear enough about that. A lot of them think they can just come here, sit back and relax with a cup of coffee and let us do everything ..//.. We want them to hold the reins so that they can develop their [PDC] competence.

Axel’s experiences show how the student assistants’ dual perspective on and familiarity with both figured worlds are a potentially double-edged sword. This is about the student assistants being trusted and accepted in the role of educator, but to the point where they are being left to take over the lesson entirely (“and let us do everything”, Axel). In the interviews, a number of student assistants expressed how they had also experienced educators taking this passive role in the FCL. They explained it as possibly related to the educators’ unfamiliarity with the FCL and the technology being used.

Moreover, Axel expressed how it could be counterproductive to the purpose of the FCL if educators stepped back and let student assistants take over the lesson, potentially slowing the development of PDC in ITE (“We want them to hold the reins so that they can develop their [PDC] competence”, Axel). This was also a point made by Anders when he highlighted the importance of educators having actual experience with the technology themselves: “The educators must participate in the planning so that they can take over later. They must take part in it all. It is our experience that they then later try it out themselves and book the room without us.”<sup>12</sup> Anders indirectly addressed the point made above, namely that it might be counterproductive if educators do not partake in the activities. This relates to the initial problem of potential role confusion addressed at the beginning of this article. It seems that for student assistants to do a good job in the FCL, they need the legitimacy of being accepted as employees involved in developing ITE but without being left with too much responsibility. Finding a balance between the roles seems crucial.

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12. Anders, in-service teacher, former student assistant, University A

## Conclusion and further work

Through interviews with student assistants and project managers this study finds, that student assistants enter the FCL job with a *student perspective* and the object of becoming a good teacher, but that over time, they acquire a second *development perspective* of teacher educator through doing the work in the FCL, where the object seems to be that of developing PDC in ITE. Their familiarity with the figured worlds of both students and the FCL seems to give them a unique dual perspective with both a student perspective and a development perspective. These dual perspectives are oriented towards different objects and motives, which in turn allow them to navigate with ease between roles, perspectives and figured worlds.

Their dual perspectives seem to allow them to bridge the embedded student-educator dichotomy and the theory-practice gap. The study also highlights how the third space of digital technology and the FCL has the potential to further erase the same student-educator dichotomy, allowing student assistants an easier reach with both student teachers and educators. This suggests, that their dual perspective and legitimate participation in both figured worlds could potentially allow them to bridge the duality through the FCL.

The findings do, however, show some potential conflicts from role confusion when the responsibilities and expectations of everybody involved are not clearly mapped and communicated. One issue raised in this study was that educators sometimes stepped back and let student assistants take over the lesson, leaving them with too much responsibility, which could be counterproductive to the purpose of the FCL and potentially slow the development of PDC in ITE. This suggests that student assistants need the legitimacy of being accepted as employees in the FCL but balanced to the point of not being left with too much responsibility.

The study also suggests that ITE could benefit from further exploration and development of the student assistant role. It could be beneficial for ITE and relevant for further development of FCLs and the role of student assistants to study the various classroom roles and how they are shaped in Norwegian FCLs in the future. Also of benefit could be study of student assistants' professional becoming as teachers, and how their dual perspectives shape their professional identity and agency.

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