



Constructing Learning Spaces – Knowledge Development in Work-based Learning

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Abstract

This article discusses how kindergarten, as a learning arena equal to a university college, creates learning spaces that engage or intervene in the professional learning of student teachers in early childhood education. Based on narratives from students in work-based education, the article addresses the complexity of education by outlining how the concept of learning is applied in earlier research on work-based learning. This earlier understanding is complemented this with two theoretical lenses (sociocultural and sociomaterial thinking) to analyse a constructed narrative from the students. The two theoretical positions open up to examine knowledge development and potentially enriches the picture of learning spaces in experiential work-based learning, going beyond the student as an individual learner.

Keywords: work-based learning, narrative research, learning spaces, knowledge development, theoretical lenses

Introduction

Learning in western higher education is a highly contested concept. Considering learning, not so much as describing a measurable fact, but as evaluating an event (Biesta, 2013), leads to discussions about who is involved in creating spaces where learning events occur. Qualifying as a preschool teacher has traditionally consisted of theoretical education at the university level, punctuated by periods of practical training in kindergarten, where distinct routines and traditional ways of dealing with professional challenges are experienced (Fleer and Robbins, 2004). However, throughout their education, students are mainly assessed in terms of how they can interpret and discuss issues related to early childhood in an academic routine even though Norwegian policy documents emphasise the workplace as an important and equal arena for learning in all phases of education. This issue draws attention to the role performed by experiential learning in an educational system based mainly on measurable learning outcomes.

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3 Based on the students' narratives, this paper examines their experiences of how learning
4 spaces are constructed in the workplace. By investigating the interchange between academia and
5 early childhood practices regarding the nexus of relationships between theory and practice (Rust,
6 2010), this paper examines whether the workplace as a learning arena can open up new
7 possibilities for understanding and performing learning in early childhood education. Striving to
8 advance beyond the 'colonial' logic of education in which the teacher knows and students do not
9 yet know (Biesta, 2013, p. 71), this article discusses how the workplace can open up spaces to
10 emancipate student learning. The questions governing the discussion are as follows: How does
11 kindergarten emerge as a learning space where students perform through education? What kinds
12 of knowledge are at stake when diverse stakeholders act in arenas framing students' processes of
13 professional learning?
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22 This paper begins by briefly describing the main body of research in the field of work-
23 based education (WBE), focusing on how the results are interpreted. How the workplace is
24 understood and the extent to which it is considered important depend on the theoretical lenses
25 applied in understanding phenomena. To analyse students' narratives and their perceptions about
26 kindergarten as a space for professional learning, this article introduces two approaches –
27 sociocultural and sociomaterial theories. By considering both theories as lenses through which
28 the findings are examined, not as the sole ways of understanding a concept, the conceptual
29 discussions explore how these lenses can make visible or invisible different aspects of work-
30 based learning (WBL) spaces in research and knowledge development. In the final discussion,
31 the workplace is connected to materials and discourses as important actors in developing
32 learning spaces.
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42 **Norwegian work-based education**

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44 In the Norwegian WBE, policy documents emphasise the workplace as an important learning
45 space, equal to university. The Norwegian WBL programme is recognised as a teacher
46 qualification, and thus highly regulated according to the requirements of the *curriculum for* Early
47 Childhood Teacher Education (ECTE) (Ministry of Education and Research, 2012). Students
48 work part time throughout their studies, attend classes and join student groups organised by the
49 university college. Thus, they can regularly try out their acquired theories from campus through
50 experimentation and reconceptualisation of this knowledge in practice and vice versa.
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3 Earlier WBL-oriented research has primarily addressed the student as an individual learner.
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5 Recognising and promoting the academic opportunities that the process offers to the individual
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7 have also been frequently addressed. Typically, in WBL, ‘the learner negotiates their own
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9 learning built around their work roles and the needs of their organization’ (Mpofu-Currie, 2015,
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11 p. 26).

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13 Experiential learning focuses on how the diverse range of knowledge and skills brought to
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15 education by learners themselves connects to new insights (Boud, 2001). This understanding
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17 encourages critical reflection, building on learners’ expertise and experience for further
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19 development (Walsh, 2006). However, when examining the literature and the learning outcomes
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21 formulated in national programme plans, the study programme seems to acknowledge academic
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23 knowledge as an authoritative source, along with the ‘theory applied to practice’ view, which
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25 tends towards an arrangement where universities transfer knowledge to preschool practice
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27 teachers (Fleer and Robbins, 2004). Hence, these processes mainly focus on individual students;
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29 the environment’s impact on students’ learning processes is rarely followed up. This discourse
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31 can be problematic when connected to experiential learning because of its preoccupation with the
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33 individual rather than how external discourses function in the workplace to address educational
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35 problems (Lanas *et al.*, 2015). Positioning teachers to perceive their challenges as mainly their
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37 own responsibility may imply losing sight of other discourses that influence teachers’ work
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39 (Lanas *et al.*, 2015).

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41 Although the partnership between employees and the university is a central topic in some
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43 studies (e.g. Laursen, 2015), the workplace as a student learning arena receives little attention.
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45 Academic institutions define the concept of learning. Simultaneously, all stakeholders – not only
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47 academic experts but children, parents, practitioners, leaders and students – create a space in
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49 kindergarten where student teachers in early childhood education develop knowledge that differs
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51 from the measurable learning outcomes defined by higher education. In this sense, the workplace
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53 provides a distinctive framework for teaching and learning, useful for investigating how the
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55 workplace as a learning space functions.

56 57 58 59 60 **Theoretical stance**

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Grappling with the concept of learning arguably includes tackling philosophical ideas on both
theory and practice. In this small-scale qualitative research project, the two authors are involved

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3 in both data collection and analysis. As researchers, the authors are methodologically positioned
4 in two paradigms (sociocultural and sociomaterial). Discussing learning from two different
5 perspectives calls for transparency, both in how the study is carried out and in how the results are
6 interpreted. The authors have no expectation of identifying ‘the truth’ about WBL. Rather, the
7 idea is to offer several insightful interpretations based on a diffractive methodology of
8 difference. ‘Differences get made in the process of reading data into each other, and identifying
9 what diffractive patterns emerge in these readings’ (Taguchi and Palmer, 2013, p. 676). In
10 reading different understandings into each other in the discussion, this paper looks for
11 understandings that have been invisible or impossible to even think about in terms of what
12 Taguchi (2007, p. 286) calls ‘the shadows of truth-claiming’. The understandings presented in
13 the following paragraphs are alternative ways of positioning the learner and the environment for
14 the purpose of adding new perspectives and dimensions to WBL in education.

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24 Inspired by Latour’s (2008) study, the aim is not to search for matters of fact as in
25 scientific representations, indisputable without considerations of desire, context or history.
26 Rather than examining what learning ‘is’, this study is open to ‘matters of concern’, embracing
27 diverse, infinite and complex contradictions and controversies – all to construct a ‘multifarious
28 inquiry [...] to detect how many participants are gathered in a thing to make it exist and maintain
29 existence’ (Latour, 2008, p. 246). This construction aims at investigating what is at stake in
30 higher education and knowledge development if the university college can no longer exclusively
31 define the content of knowledge. Stretching the notion of teacher education by connecting to
32 students and their workplaces advances learning beyond the university.

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39 From the sociocultural perspective, learning is considered social, mediated, distributed,
40 situated and related to participation in a community of practice (Lave and Wenger, 1991).
41 Learning spaces are not necessarily physical places but constructs of a person’s experience in the
42 social environment. These situations are embedded in communities of practice that have
43 histories, norms, tools and traditions (Kolb and Kolb, 2005). Knowledge construction occurs
44 when acting in everyday life (Säljö, 2001). A sociocultural approach to learning investigates how
45 individuals and groups acquire and exploit physical and cognitive resources. Interactions
46 between the collective and the individual are in focus.

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53 In the sociomaterial realm, the actor–network theory (ANT) explores how knowledge is
54 generated and spread through assemblages and enactments (Fenwick *et al.*, 2011). Learning

spaces include materials, technologies and natural forces, all closely interwoven in learning processes, implying that learning is no longer an entirely human or mentalist phenomenon. In line with Nesper's (1994) argument, learning *to be* a preschool teacher and a pedagogical leader is of greater importance than learning *about* preschool and leadership. Disrupting established structures of disciplinary knowledge in education and recognising multiple ways of enacting realities pose challenges to learning initiated through the ANT (Fenwick *et al.*, 2011). Learning becomes the effects of a network where both humans and non-humans negotiate and translate forms of knowledge that sustain and develop the accomplishments desired by all participants (Latour, 2005). The forces activating others to act are in focus.

Methodology

Through a longitudinal study of WBE, the workplace as a *space* for learning has emerged as noteworthy. The workplace constructs a room where flows appear in ways that order whole systems of learning (Fenwick and Edwards, 2010). To gain access to *how*, *why* and *to what extent* learning might differ, the researchers needed access to how the students themselves experienced kindergarten as a learning space. Four questions regarding their experiences with workplace learning were published on the learning management system (LMS) platform, and the students were asked to write down their thoughts and reflections. The request generated responses from 35 students from different cohorts, all structured as narratives.

A culturally oriented approach questions the notion of narratives as offering a window into the experiential world. Stories should be perceived as performances, including the way that scenes are organised, how audiences are positioned and how the storyteller situates himself or herself (Riessman, 2005). This argument corresponds with Bakhtin's polyphony of voices (Bakhtin, 1986), locating the 'I' in several positions, establishing connections and challenging the notion of the person-centred story. The analysis focuses on the situation, specifically, the workplace, rather than written texts as personal narratives. All workplaces differ in terms of student writings, and the narratives thereby construct a rhizome¹ of connections. The data is regarded as a corpus produced by individuals, treated as comprising 'networks of narrative

¹ A rhizome is characterised by ceaselessly establishing connections amongst semiotic chains, organisations of power and circumstances relative to the arts, sciences and social struggles. The rhizome presents history and culture as constituting a map or a wide array of attractions and influences with no specific origin or genesis, no beginning or end; it is always in the middle, between things (Deleuze and Guattari, 1993).

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3 meaning distributed across the material world, not fixed to a single biographical subject' (Squire
4 *et al.*, 2013, p. 3). In this article, the materials from the students' writings are taken into account
5 as visibly present in the production and understanding of the narratives. Repeated conversations,
6 rather than the typical one-shot interview, are preferable when conducting narrative research. By
7 encouraging the students to write about their experiences in the workplace at a specific point in
8 time, this study does not admit Riessman's (2005) emphasis on long-lasting relationships.
9 However, by connecting traces from multiple small stories, the analysis aims at revealing what
10 forces are acting in the workplace, thereby constructing arenas for student learning. The word
11 *arena* is chosen to underline the lack of stability and refers to the ongoing battle amongst forces,
12 producing potentials that might be activated in the workplace. In this sense, narrative inquiry is a
13 way to 'see different and sometimes contradictory layers of meaning, to bring them into useful
14 dialogue with each other, and to understand more about individual and social change' (Squire *et*
15 *al.*, 2013, p. 2).

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17 In the analyses, this study emphasises that all narratives are incomplete because experience
18 cannot make its way fully into language. However, they can offer traces worth pursuing in order
19 to create insights of the phenomena thematised. The constructed narrative to be presented
20 undertakes a twofold analysis. In the sociocultural understanding of learning, this study
21 investigates the interactions amongst humans in communities of practice. Attempting to explore
22 beyond learning, this paper introduces a sociomaterial entrance inspired by the ANT,
23 investigating how the intra-actions between human and non-human participants construct
24 different stories about learning. Whilst the sociocultural approach deals with context and
25 embedded meaning, the sociomaterial approach considers the forces activating action.

26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 **Stories about learning in the workplace**

44 The analysis presupposes an onto-epistemological entrance to the world where learning cannot
45 be separated from the person or his or her situation. According to Barad (2003), all observation
46 involves a *cut*, implying that the researcher omits parts of a story or an event to investigate it
47 closer. When constructing a narrative, this paper *cuts out* some elements from several student
48 statements. In such a *cut*, this paper excludes some voices, whilst including others on the basis of
49 elements in the text emerging as significant or *glowing material*. MacLuhre (2013) explains
50 glowing material as comprising the parts that make themselves visible to the researcher. Glow
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3 reflects the understanding that the material affects the researcher, not only logically and
4 intellectually, but also emotionally by making sense. Material that glows is not self-explanatory;
5 it invites a closer examination of what is at play in a concrete situation. As researchers, this
6 paper's authors have included cuts of stories that thematise how the students are both cognitively
7 and emotionally affected by their learning spaces in their professional development. The
8 constructed narrative demonstrates how learning differs, and a rather complex and polyphonic
9 story emerges.
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17 *The kindergarten is a place that allows me to try out new knowledge and methods that I*
18 *have recently been introduced to at the university college or read about in the literature.*
19 *It is also some sort of living laboratory where I can become aware of issues I have picked*
20 *up from sitting in lessons or reading books. The kindergarten is a good place for*
21 *formation towards becoming a future preschool teacher. Learning is woven into the daily*
22 *work, and therefore, we are challenged. This challenge requires critical thinking about*
23 *the culture at stake in the kindergarten, about new forms of knowledge and my role as a*
24 *professional – demanding both courage and power – which is sometimes challenging. I*
25 *was supposed to present a paper at a meeting. We don't have these meetings very often,*
26 *so I had prepared well and was looking forward to sharing some of my insights and*
27 *thoughts from school. However, during the meeting, my leader did not manage to*
28 *structure time, and most of the meeting was spent talking about things that were not*
29 *relevant to the kindergarten – and no room for me. When I suggested that we [could]*
30 *postpone my presentation for the next meeting, my leader told me that [it] was not*
31 *possible because we would be painting a bookshelf. There are no possibilities for*
32 *development here. I think that students should have more possibilities for sharing and*
33 *developing knowledge in the kindergarten. I feel like an unskilled worker, studying*
34 *besides my work, and not at all as the resource person that I see in myself.*
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51 **Sociocultural understanding**

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53 A constructed narrative (as presented here) does not tell the 'truth' about what is happening in
54 kindergarten. However, it demonstrates how the workplace in kindergarten is a space where the
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3 job is performed and the activities actually occur (Winch, 2013). The cultural environment in the
4 narrative demonstrates how attitudes and knowledge construct learning spaces. The interchange
5 between the existing culture and creating a new one through human participation and dialogue
6 enables learning to be mediated and distributed between the participants and the culture (Säljö,
7 2001). The workplace becomes an open, constantly changing venue for educational activities,
8 which in different ways may create as well as hamper learning possibilities.
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13 Säljö (2001) describes context as a collection of material resources, human resources and
14 relations. All these resources are woven between human beings and material artefacts. However,
15 according to the students, learning conditions differ, even if they all participate in the early
16 childhood learning environment. Some students feel a strong affiliation, whilst others feel like
17 outsiders. When the cited student experiences herself as an ‘unskilled worker’, the learning space
18 emerges as limited to her, and the mediated message from the culture is to behave as an unskilled
19 employee, not as a resource. This issue underlines how kindergarten as a learning space can both
20 activate and deactivate students’ potential for learning and construction of professional
21 knowledge (Dysthe, 1999). Linking to the importance of access to and support from spaces,
22 places and people, this point thematises how the staff and the students utilise their potential for
23 professional learning (Dysthe, 1999).
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33 The narrative addresses the student have acquired new theoretical knowledge from lessons
34 at the university, which she wants to share and reflect on with colleagues. The learning outcomes
35 will relate to the ways in which she and the staff interact. Professional knowledge is distributed
36 amongst people participating in the learning environment, and in their interaction, knowledge is
37 mediated amongst the participants (Säljö, 2001). The student emphasises how WBL ‘*requires*
38 *critical thinking about the culture at stake in the kindergarten, about new forms of knowledge*
39 *and my role as a professional*’. Language and communication become central to such learning
40 perspectives.
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46 Raelin (2010) claims, ‘Work-based learning is mindful and situated learning in the sense
47 that it does not view knowledge as fixed; rather, knowledge is provisional until tried out in
48 practice’. When the kindergarten in the narrative is labelled a ‘*living laboratory*’ and ‘*a place*
49 *where learning is woven into the daily work*’, it can be assumed that the student tries out her
50 insights and knowledge in the workplace. Describing the environment in the kindergarten as a
51 ‘*living laboratory*’ can be linked to Mpofu-Currie’s (2015) emphasis on learning in a group.
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3 Support from work colleagues or university peers makes a person reflect on and review one's
4 own practice. Learning becomes both individual and collective processes through interaction. In
5 communities of practice with histories, norms, tools and traditions, employees' confidence in
6 jointly reflecting critically on existing practice, as well as trying new activities according to their
7 new insights and knowledge, seems to matter.
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13 **Turning to a sociomaterial understanding**

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15 As discussed in the sociocultural analysis, students' framing of the workplace as an arena to try
16 out new forms of knowledge and methods is an example of how 'theory has an almost self-
17 evident higher value than embodied and practical knowing' (Taguchi, 2010, p. 117). This view
18 implies the existence of a bank of theories from which students draw and decontextualise
19 knowledge to be used in kindergarten. The ANT (Latour, 2005) challenges this concept by
20 arguing that the adoption of theoretical knowledge in a practical field is about knowledge
21 translation. Translation as a process involves negotiations between human and non-human
22 participants.
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29 Following the concept of translation, the narrative invites exploring beyond interactions
30 amongst human participants in their social environment when the concept of the living
31 laboratory is introduced. The word 'laboratory' connects inventions and possible new births.
32 According to Latour (2005), *the social* involves a sort of circulation where action is always
33 dislocated, articulated, delegated and translated; it is not a special domain or realm but 'a very
34 peculiar movement of re-association and reassembling' (p. 7). When connections amongst
35 things, which are not themselves social, reassemble in an event, the theory of *the social* implies
36 that 'all those heterogeneous elements might be assembled anew in some given state' (Latour,
37 2005, p. 5). In such an understanding, professional knowledge is negotiated not only amongst
38 human participants but also between them and their environment. Furthermore, there is no
39 distinction between the individual and the environment (Law, 2004, p. 21). This blurring idea
40 where everything is contained within everything else makes research as messy as practice. To
41 analyse such a 'mess', Law (2004) encourages the researcher to probe deeper and focus on
42 specific material details. In the case of the cited student narrative, the focus is on the bookshelf.
43 The first question to be examined is how a shelf can hinder a presentation and in some sense,
44 legitimise the leader's actions.
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3 Tracing the different ‘aktants’² (Latour, 2005) in the constructed narrative can offer
4 insights into how both human and non-human participants contribute to developing knowledge.
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6 ‘[M]ost of the meeting was spent talking about things that were not relevant to the kindergarten
7 – and no room for me. When I suggested that we [could] postpone my presentation to the next
8 meeting, my leader told me that [it] was not possible because we would be painting a bookshelf’.
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10 The structure of the meeting, the presentation and the bookshelf all connect to one another. Non-
11 humans are activated as agents of knowledge production linked to the student’s concerns about
12 restrictions on the possibilities of developing knowledge in the kindergarten. Both humans and
13 non-humans can be labelled actors or aktants, as introduced by Latour.

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15 The concept of the event is now applied to opening up the question of how to think about
16 learning. Events entail ‘lightning fires’ that can create ‘a transforming moment that releases from
17 the grip of the present and opens up the future in a way that makes possible a new birth, a new
18 beginning, a new invention of ourselves, even as it awakens dangerous memories’ (Caputo, 2006
19 p. 6). Directing the focus away from what the actors do leads to the question of what provides
20 actors with their specific actions. The processes of learning can no longer be explained solely as
21 constructions within or in-between humans or as ‘natural’ processes of change. The gaze shifts
22 towards examining what holds different bodies together in order to explain what learning
23 becomes. In this sense, what provides the leader with the action of saying ‘no’ to the student and
24 ‘yes’ to the shelf? It is not possible to investigate this solely from the narrative perspective.
25 However, following the traces (as on a map) and investigating the topographies that become
26 visible can raise the question, *what if there were other understandings?* In the narrative, the shelf
27 connects to the visible, physical milieu in the kindergarten, whilst the presentation connects to
28 the rather invisible milieu of critical reflections and knowledge production in the workplace.
29 Avoiding being trapped into thinking about either visible or invisible agents requires tools and
30 strategies that are able ‘to be involved in simultaneously becoming more complex, multiple,
31 embodied and material’ (Taguchi, 2010, p. 120). These strategies are subject to learning as more
32 than achieving a goal or acquiring given forms of knowledge. Instead, they encourage serious
33 consideration of how learning shapes both the lives and the identities of the learners. In this
34 sense, a living laboratory, as stated by the student, is not only a place to try out theoretical
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54 ² Latour (2005) introduces the term *aktant*, a semiotic name to avoid the interpretation of actors as synonymous with
55 humans.
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3 knowledge in practice. Rather, it is a space that allows for ideas and practices to reconfigure and
4 move one another around where non-humans (in this case, the shelf) can also articulate
5 propositions and participate in an ongoing choreography of the world (Hultmann, 2011).
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8 What forces are awakened by theoretical and practical knowledge in the assemblage of
9 WBL and how these forces make room for students' acting are interesting questions to dwell on.
10 Relational learning differs on the basis of the human and the non-human participants that are
11 present, connecting and acting.
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15 If learning simultaneously activates the structures in higher education and in kindergarten,
16 whilst functioning as an individual project, then learning connects to differences rather than to
17 sameness. Such a statement requires the recognition of kindergarten as an agent taking direction
18 and acting in shaping the students' opportunities of becoming and learning. Kindergarten as a
19 living laboratory implies the presence of forces activated in that specific room that creates an
20 event, enabling professional knowledge development that is not possible in the university
21 college.
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27 It is difficult and not necessarily sensible to point out exactly the most important element in
28 making knowledge construction powerful. However, the learning space seems to contain diverse
29 and vital elements, acting and choreographing the students' learning processes. These elements
30 are not only activated as logical consequences, such as trying out methods or translating theory
31 into practice. When the concept of learning is introduced as '*woven into daily work*', this
32 weaving machinery is presented as challenging in the narrative. A thinking machinery is
33 connected to how Deleuzian philosophy treats thinking as rhizomatic, characterised by
34 heterogeneity, multiplicity, connections and breaks in a conglomerate of possibilities (Deleuze
35 and Guattari, 1993). These experimental approaches encourage asking about the constructions
36 and possibilities of professional knowledge. Dahlberg and Moss (2005) perceive this point as
37 vitality thinking, with the potential for creativity, shaping new ideas and constructing new things.
38 This approach provides another entrance to Raelin's (2010) claim about not viewing knowledge
39 as fixed; rather, knowledge is provisional until tried out in practice.
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50 Following Deleuze and Guattari's (1993) argument, this kind of thinking opens up for
51 almost anything. Some of the voices in the narrative describe experiences characterised by
52 vitality thinking, emphasising the need for learning spaces where knowledge is not fixed. They
53 simultaneously describe narrow rooms as prominent in the education process, creating fewer
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3 possible actions. Routines and preplanned content in kindergarten seem to regulate the size of the
4 learning space, together with the idea of who the student is. How other agents view the student
5 activates how the student can act. The preschool education teacher has the great potential to
6 release some of the latent power in the learning spaces of kindergartens to make thinking
7 creative, with the promise of shaping and making ideas part of the process of becoming an early
8 childhood teacher.
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13 In such an argument, the focus shifts from perceiving the student as responsible for trying
14 out new theoretical insights to viewing practice as a mangle. In the mangle (Pickering, 1995),
15 both theory and practice of science interacts with the student, nature, machines, technology,
16 politics, humans and non-humans (Lafton, 2015). The different elements are blurred and lose
17 their distinct frames. New knowledge is created in blurring and intertwining the mangle. The
18 stories told by students encourage further investigations into how the space where humans and
19 non-humans are entangled makes professional development possible.
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27 **Possible transformations of knowledge and learning processes**

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29 Both sociocultural and sociomaterial understandings challenge the idea of the student as an
30 individual learning subject, but the assumptions underlying the two approaches differ. The
31 sociocultural gaze underlines how a contextual learning space, through dialogue, both conserves
32 and develops existing practice. The sociomaterial gaze challenges the idea of the student as the
33 one calling the shots in practice and elaborates how humans and non-humans, in their
34 intertwining, may create learning spaces that are yet unknown. In total, these lenses challenge the
35 theoretical foundation of education, made visible through documents created by the university.
36 When facilitating experiential learning, put forth as doing and thinking in and through practice,
37 the idea of academic knowledge as *the knowledge that counts* is at stake. This paper argues in
38 favour of an entrance that can turn the ideas of professional education and development upside
39 down. The possibility of rethinking what is valid knowledge in higher education emerges.
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48 Regarding early childhood education practice, an arena framing knowledge development
49 may challenge what kinds of theories and literature become important. When faced with the
50 question of how to explore beyond what is already known to be open to the potential for vitality
51 thinking, the processes occurring in the students' workplaces matter. When the education of
52 early childhood teachers is heading towards more academic constructions of learning and
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3 knowledge, an important question is whether such education has room for processes that allow
4 the development of constructive and creative learning spaces in kindergarten. Practice as a
5 mangle does not imply that practice is everything and that grounded theory is the answer. Rather,
6 theories, doings, materials and discourses connect and activate one another in rooms of
7 difference, implying a challenge to the traditional hegemonic academic thinking.
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12 The discussion about the relation between theory and practice has long been a central topic
13 in professional education. Theory makes sense of a complex and sometimes messy world (Law,
14 2004), but the question is whether theory is always applicable to practice or whether theory
15 sometimes exists for its own sake. The tendency to make higher professional education more
16 theoretical has strengthened the focus on academic skills. Although Norwegian policy documents
17 regard kindergarten as a learning arena equal to university in terms of their curricula, this
18 position is not always operationalised in the lesson plans, assessments and constructions of the
19 subjects. Theory sometimes seems to activate acting, thinking and exploring in WBL. At other
20 times, theory prevents learning and makes the actors 'stand still'. However, is there a point in
21 striving to step beyond the existing constructions of learning as student-centred and regard
22 forces, relationships and doings as important in experiential learning?
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32 Instead of focusing on the academic content of education and which theories can be
33 transferred to students as something to bring with them, what is *already known* can become
34 actors in student learning processes. It is possible, not by delivering some predefined content, but
35 by participating in the mangle of knowledge. The workplace can choreograph magic, making
36 knowledge and learning vital, when kindergarten functions as a laboratory. Some students
37 participate in learning spaces characterised by narrow rooms with limited possibilities for
38 shaping, creating and examining professional knowledge, whilst others participate in wider
39 rooms. This opens up an investigation into new stories about power and democracy in the wide
40 or the narrow room in terms of students moving and developing their teacher identities as early
41 education practitioners. Knowledge itself changes when activated in different places. However,
42 the responsibility of educators and other significant co-workers surrounding the students in the
43 workplace changes when the workplace acts as a laboratory, constantly challenging different
44 forms of knowledge. This situation invites dialogues of equality between the university college
45 and the kindergartens. A critical aspect is that the forms of knowledge that students develop
46 through their education can no longer be taken for granted.
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3 In sum, this article has addressed the complexity of learning and education, suggesting
4 openness to several theoretical positions so as to understand and examine such complexity.
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6 Viewing the learner and the social connections amongst humans, as well as taking into account
7 the workplace as a space that stages learning processes, creates multiple forms of knowledge
8 about WBL. The student as a learner still represents an important perspective. Additionally, it is
9 vital to investigate and challenge the workplace itself. What processes does the workplace allow
10 to occur? How do human and non-human actors intertwine, and what do they construct? They all
11 function as important actors in learning spaces, in and through which students act and thereby
12 contribute to developing their professional knowledge. Perceiving the workplace in this way
13 might also challenge what kind of knowledge is needed by the students to become skilled early
14 education professionals.
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