ANTTI RAJALA, KRISTIINA KUMPULAINEN, JAAKKO HILPPÖ,
MAIJU PAANANEN AND LASSE LIPPONEN

2. CONNECTING LEARNING ACROSS SCHOOL AND OUT-OF-SCHOOL CONTEXTS

A Review of Pedagogical Approaches

INTRODUCTION

Understanding and promoting learning across school and out-of-school contexts have received increased attention in recent educational research and practice. Children and young people spend considerable time in out-of-school learning settings. Whether it be outside in the park playing with friends, fishing with an uncle, taking part in everyday family chores, or engaging in virtual communities, these everyday learning environments form a rich and complex learning ecology within which children build a variety of experiences, competencies, and interests (Barron, 2006; Erstad & Sefton-Green, 2013; Ito et al., 2013; Kumpulainen et al., 2010). But to what extent (and how) do schools recognise, value, and build on young people's out-of-school learning and interests? And if they do so, what are the reasons? These questions are of great importance to present-day research in learning and education, and serve as the core focus of this chapter.

Efforts towards recognising and connecting students' learning across formal and informal contexts reflect the changing requirements contemporary knowledge societies pose for learning and education as lifelong and life-wide processes (Ito et al., 2013; Erstad & Sefton-Green, 2013; Kumpulainen & Sefton-Green, 2012). Yet, traditional practices of schooling are often unable to deal with such endeavours. There are a number of partly conflicting demands with which schools struggle. First, the increasing linguistic and cultural diversity among students contradicts the tendency of school systems to standardise student performances. It has become increasingly evident that the underachievement of under-represented students is due to sociocultural mismatches rather than to deficiencies of these students, their families, or their cultures (Gonzales, 2005; Heath, 1983; Säljö, 2012). Second, today's children and young people appear to be less committed than previous generations to accept what schools have to offer; hence, schools are starting to lose their allure in the eyes of many students—and also among some parents (Säljö, 2004). Although students have cultural experiences and personal knowledge outside of school, they can have difficulties in connecting these to school instruction (Kumpulainen et al., 2010; Moje et al., 2004). Third, technological developments generate new forms of

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culture and literacy and make new kinds of digital tools and virtual spaces available for engagement and learning. Students often develop expertise and interests related to these new tools in out-of-school settings; therefore, how they can connect this expertise and these interests to school instruction becomes an issue (Barron, 2006). Fourth, today's working life requires new kinds of competences from workers that are seldom addressed by conventional forms of schooling (Binkley et al., 2012; Dumont, Istance, & Benevides, 2010). Many professionals no longer encounter well-defined and clear-cut tasks and activities; rather, their work is organised around complex problems that are tackled in multi-professional collaboration (Edwards, 2010). In the midst of these social, cultural, and technological demands, schools have become sites of societal and political struggle where multiple interest groups, including students, their parents, and employers, as well as transnational organisations (e.g., OECD, UNESCO), are each aspiring to redefine what schooling should entail (and look like) in this century (Biesta, 2013).

Advances in learning research also point out the educational value of connecting student learning across contexts. From a sociocultural perspective, learning is understood as a part of living in different sociocultural contexts, and not as something that takes place exclusively in the context of formal education (Akkerman & Van Eijck, 2013; Hull & Schultz, 2001; Kumpulainen et al., 2010). Many kinds of learning modalities are at play in children's and young people's lives that they acknowledge as meaningful regardless of whether schools value such learning or validate it as legitimate (Erstad & Sefton-Green, 2013). In addition to the school community, learners simultaneously participate in multiple other communities and practices as a part of their everyday life. Limiting a view of learning to a single setting thus ignores significant interdependencies between multiple settings of learning. Learning happens as people move in and through sites of learning that are seen

> less as parking lots and more as intersections. (Leander, Phillips, & Taylor, 2010, p. 336; see also Erstad, 2012)

Viewing learning as connected to diverse contexts disrupts the taken-for-granted status of school learning and poses new questions (Erstad & Sefton-Green, 2013), including the following: Who defines learning? Whose interests do different definitions of learning serve? How are struggles between competing definitions played out in everyday interactions in schools?

In recent years, pedagogical practices have been designed, enacted, and researched to overcome the gap between school learning and students' lives outside of school (Banks et al., 2007; Bronkhorst & Akkerman, submitted, 2014; Kumpulainen et al., 2010). In addition, Hull and Schultz's (2001) early review of literature on the topic underscores the need to further examine the relationships between school and non-school contexts as a new direction for theory and research. Yet, research in the field is diverse and disconnected, and the ubiquitous nature of the defining concepts being used makes this valuable field of research hard to grasp. Hence, there is a need

to build analytical clarity and a more coherent understanding of the pedagogical approaches that support student learning across contexts, as well as their underlying rationales. In this chapter, we hold that various rationales can be identified among pedagogical approaches that aspire to connect student learning across contexts. The differences between the rationales are also likely to be reflected in how learning and instruction are organised, what pedagogical tools are used, and what is eventually learnt. A consideration of pedagogical rationales is thus essential, since talking about learning without a reference to the purpose for which something is learnt is arguably meaningless (Biesta, 2009, 2013).

In this chapter, we discuss our findings, which were derived from a thematic review of research literature on pedagogical rationales and associated practices, and tools for connecting learning across school and out-of-school contexts. Our goal is to create conceptual clarity about the topic and thus contribute to building a more coherent understanding about the nature of those practices and underlying rationales that aim to create coherence and connectedness in students' learning lives. We also aim to further pedagogical development in the field by discussing key issues and critical ways of working with boundary-crossing in practice. In line with the sociocultural perspective on learning that guides our work, we define a pedagogical approach as a purposive cultural intervention in human development that is informed and shaped by the values and history of the society and the community in which it is located (Alexander, 2008). A pedagogical approach includes not only acts of teaching but also the wider pedagogical arrangements, such as study materials and other pedagogical tools, grading and testing practices, the distribution and locus of authority, the patterning of time and space, and implicit or explicit definitions of what counts as legitimate ways of knowing and communicating.

The chapter begins with a description of the methodological approach to our literature review. This is followed by a discussion of our findings, which account for three distinct pedagogical rationales for connecting students' learning across school and out-of-school contexts. In this connection, we illuminate the pedagogical practices and tools associated with these rationales and pinpoint some challenges each pedagogical rationale entails. As a synthesis and further reflection of our findings, we conclude by considering how the three pedagogical rationales identified in this study relate to the interrelated functions that educational systems perform—that is, qualification, socialisation, and subjectification, and to tensions between them (Biesta, 2009, 2013).

THE APPROACH TO THE LITERATURE REVIEW

The data source of our thematic research review comprises empirical research publications that can be located in official academic databases. We began our analysis in March 2014 by conducting a number of systematic database searches (ERIC, PsycINFO, Sociological Abstracts/CSA) with the search terms *third space*, *funds of knowledge*, *hybri**, *seamless learning*, *boundary crossing*, *informal learning*, and

connected learning in order to build a relatively comprehensive data set of articles (years 2010–2014). The keywords were selected based on our prior understanding of the topic. We complemented this search by exploring several key journals for articles published within the years 2010–2014 and for studies that had cited some classical texts on the topic. Finally, we used our knowledge of the field and recommendations from colleagues to include articles that we deemed relevant. In our search process, we attempted to identify studies that were about pedagogical approaches that explicitly sought to incorporate students' out-of-school learning into instruction. We excluded studies that dealt with home-school connections in general but that did not address learning explicitly. Moreover, we included only those studies in which learning across contexts was one of the key foci of analysis. Altogether, our analysis covered 50 publications (see the list of references). In this connection, we want to stress, however, that due to the heterogeneity of the studies in the field and their use of conceptual language to characterise their research on students' learning across contexts, our selection process of the core papers for the analysis had limitations. It is possible that we have missed articles that would have enriched our analysis and subsequent findings.

We looked at various aspects in our analysis of the selected articles, including the rationale that was given for connecting learning across school and out-of-school contexts, types of research questions and findings, the description of pedagogical practices and tools, and the theoretical orientation underpinning the work. In some cases, a pedagogical approach was interpreted to simultaneously address more than one pedagogical rationale. In the final stage of our review process, we inductively generated categories that captured the various dimensions of our analysis. These categories also helped us to form the framework via which to examine research in the field and to envision possible new directions for future work.

The research questions of our analysis can be summarised as follows:

- What pedagogical rationales can be identified in the research literature on connecting student learning across school and out-of-school contexts?
- What pedagogical practices and tools were used for addressing these rationales?

RESULTS

Educational Equity and Inclusiveness

Our analysis shows that a predominant pedagogical rationale for incorporating student out-of-school learning into instruction is the promotion of educational equity and inclusiveness (see Hull & Schultz, 2001). This rationale involved an overarching concern for social justice and cultural sensitivity. In specific, efforts were made to empower under-represented students by addressing the mismatch between their out-of-school learning and what was officially valued as valid knowledge, and ways of knowing and interacting in school. In these studies, there was a common

understanding that the teacher's profound engagement with the diverse resources and interests of these students improved the quality of instruction for them.

A well-known pedagogical approach based on inclusive educational practices, known as the "funds-of-knowledge" approach, was born from a set of pioneering studies conducted in Arizona (see Hogg, 2011; Moll, Amanti, Neff, & Gonzales, 1992; Vélez-Ibáñez & Greenberg, 1992). The funds-of-knowledge concept stems from anthropological research carried out in the Latino/a communities demonstrating that households develop a wide range of expertise, bodies of knowledge, and skills essential for household or individual functioning and well-being (Moll et al., 1992; Vélez-Ibáñez & Greenberg, 1992). In these studies, a distinction was made regarding a general notion of culture that easily evokes stereotypic views of students as representatives of taken-as-static cultural groups. Instead, the funds-of-knowledge concept focuses on expertise specific to each household that is dynamically adapted to changing situations.

The funds-of-knowledge approach used in the Arizona studies involved the teachers' intentions to genuinely learn from, and about, their students and families. In the studies mentioned, the teachers were trained in ethnographic research methods and conducted home visits with a professional ethnographer. The home visits involved making observations at homes and in the neighbourhoods of the selected students, as well as interviewing the parents about the labour history and regular household activities of the family. The open-ended ethnographic research methodology that the teachers employed helped to develop a relationship of trust and a sophisticated understanding of the students and their social world. The theoretical knowledge, such as the concept of funds of knowledge, also mediated the teachers' comprehension of the social life within the households and reduced the complexity involved without compromising the attitude of serious engagement with the diversity inherent in the students' lives. As a result, the teachers reported profound shifts in their attitudes toward, and their relations with, the students and their parents.

After conducting the home visits, the teachers capitalised on their acquired understanding of the households and other community resources to reorganise their classroom instruction. The purpose was to connect the instruction to the neighbouring communities and to improve educational quality for the under-represented children (Moll et al., 1992). For example, during a home visit, one of the teachers learned that one of her sixth-grade students was involved in international commerce through selling Mexican candy in Arizona neighbourhoods. The student's capability to participate in such a demanding activity was in sharp contrast with the evaluation of the student's school performance. As the result of this finding, the teacher designed an inquiry-based learning project that engaged students to pursue their interests on the topic of candy. A parent of one of the students also came to teach the class about Mexican candies, and the class prepared Mexican candy under her tuition, to be sold at a school event. Through this project, the students' out-of-school learning was legitimated and valued in school.

The funds-of-knowledge approach has inspired a large number of subsequent research studies and pedagogical experiments striving to create inclusive instructional practices that connect students' school learning with their informal lives. Diverging from the original funds-of-knowledge project that focused primarily on adult practices and social worlds, in many of these pedagogical approaches, students are invited to bring aspects of their lives into the class (Barton & Tan, 2009; Rosebery, Ogonowski, DiSchino, & Warren, 2010; Zipin, 2009). For example, in a design experiment conducted in a low-income, urban sixth-grade classroom in the United States by Barton and Tan (2009), students participated in planning lesson activities for an instructional unit on food and nutrition. The lesson activities included the students interviewing their parents about salad recipes and visiting local grocery stores chosen by the students. The students were active in bringing their expertise and interests to their learning of school science.

Other pedagogical approaches with an interest in connecting learning for the promotion of inclusiveness and educational equity have highlighted the role of task designs and interactional practices for inviting minority students' out-of-school learning (Fitts, 2009; Haneda & Wells, 2012; Rosebery et al., 2010; Varelas & Pappas, 2006; Warren, Ballenger, Ogonowski, Rosebery, & Hudicourt-Barnes, 2001). Noticing and building on the students' emergent understandings during classroom interactions can develop into teaching opportunities and into full curricular units (Barton & Tan, 2009; Gutiérrez, Baquedano-López, & Tejeda, 1999). In addition, the teacher's personal experience as being from the same ethnic group as some of his or her students could serve as a resource to understand and connect to these students' funds of knowledge (Antrop-González & De Jesús, 2006; Upadhay, 2009; Wiseman, 2011). For example, in one case study, a Hmong teacher in the United States used her understanding of the central significance of gardening in the Hmong culture to engage her Hmong students in a school science project that involved gardening (Upadhay, 2009).

Research has also shown that engaging with the diversity of student funds of knowledge can challenge the established instructional and disciplinary practices. Warren et al. (2001) critiqued conventional school science for treating minority students' everyday sense-making practices as deficient and as obstacles for their learning and for not recognising the inherent potential of these practices for deep thought and complex argument. Through their detailed analysis of classroom interactions, the authors described the sense-making practices of bilingual minority students who imagined themselves into the phenomena they were trying to explain or who used their different languages creatively to develop contrasts among seemingly unambiguous ideas. The authors showed that by providing a space in the classroom for these ways of using language usually not recognised as scientific by the teachers, continuities were created between the intellectual work that the students were doing and canonical science practices. In fact, the limited and idealised views of scientific practice inherent in conventional school science can misrepresent what the everyday work of doing science and the talk of scientists is like (Kamberlis & Wehunt, 2012).

Existing research in the field demonstrates that the full diversity of students' out-of-school learning can be difficult to deal with within the confines of institutional schooling and its values. An example is an action research project carried out in a high-poverty, ethnically diverse neighbourhood in South Australia (Zipin, 2009). In the project, the students were asked to bring cultural artefacts from their lives outside of school that had rich personal meanings for them. These artefacts were then discussed in class, and the teacher asked the students to name and to analyse local life-world issues. However, the teachers participating in the project were reluctant to discuss some aspects of the students' lives that the students brought into the class. Zipin referred to these aspects of the students' lives that were considered dangerous or negative in school with the notion of dark funds of knowledge. Dark funds of knowledge involved issues of violence, crime, alcohol, and drugs that the students encountered in their neighbourhoods. Yet, the lesson activities of one of the teachers, which involved making clay animations about bullying and harassment, showed that attending to these dark funds of knowledge can connect instruction to vital personal meanings in the students' lives and foster deep engagement in school learning. Conversely, the avoidance of these topics, which were of central importance in some of the students' lives, seemed to alienate these students from instruction.

Students' dark funds of knowledge are risky to deal with for the teachers in at least two ways (see Gutiérrez et al., 1999; Matusov, 2009; Zipin, 2009). First, teachers need to balance conflicting needs to protect their students' well-being and to support them in reflecting on the totality of their life situations. In the case of creating clay animations, the teachers sought to attenuate these risks by asking the students to compose clay animation stories that would propose solutions to the identified problems of bullying and harassment. Second, bringing dark funds of knowledge into the classroom may disrupt the taken-for-granted institutional arrangements and be risky for the teacher, as well as for the students. This was exemplified by a study conducted among U.S. second- and third-graders by Gutiérrez et al. (1999) about a curriculum unit concerning the human reproductive system. This unit evolved from the teacher's response to a student conflict involving name-calling and sexual harassment. The unit turned into a rich learning experience that engaged students, but it also involved risks. For example, the teacher had to refute rumours that accused her of using a banana to teach the students how to wear condoms.

Providing space and time for reflection was found to be crucial for incorporating students' diverse out-of-school learning into instruction. As illustrated above, the full diversity of students' out-of-school learning is often in tension if not in direct conflict with the official contents and practices of school instruction. Reconciling this tension is an expansive process that questions established practices and transforms what counts as knowledge (Gutiérrez et al., 1999). To devise novel classroom practices, many of the pedagogical approaches have involved regular meetings between the teachers and the researchers to discuss and analyse observations and notes from home visits (Gonzales, 2005), the artefacts that students brought from their lifeworlds (Zipin, 2009) or video-recorded classroom lessons

(Rosebery et al., 2010). In some cases, the students were involved in these meetings (Barton & Tan, 2009). This reflection was crucial for going beyond and interpreting what was observed at homes and what was said in the interviews (Moll et al., 1992). It requires more effort and interpretation to go beyond mere knowledge content to recognise ways of knowing and transacting knowledge, but the latter carry deeper resonance and familiarity for the students (Zipin, 2009). Similarly, recognising continuities between canonical science and everyday sense-making practice requires a reflective process of being open to examining and expanding one's view of what it means to learn and to do science (Rosebery et al., 2010; Warren et al., 2001).

Learning Requirements and Competences of the 21st Century

In this pedagogical rationale, the incorporation of student out-of-school learning into instruction was seen as an integral part of addressing many learning requirements and competences required from learners in the 21st century. Our analysis also showed that there was variation in the pedagogical approaches guided by this rationale with respect to whether the desired competences to be promoted in instruction stemmed from the academic, working, or civic life.

First, in the approaches that were about academic learning, students' everyday reasoning and cultural practices were seen as important aspects of robust conceptual learning and engagement in authentic disciplinary practices in studies of science (Ekanayakea & Wishart, 2014; Engle, 2006; Kamberlis & Wehunt, 2012; Rosebery et al., 2010; Scott, Mortimer, & Amettler, 2011; Warren et al., 2001), music (Green, 2005), language (Wiseman, 2011; Wong, Chin, Tan, & Liu, 2010), mathematics (Cribbs & Linder, 2013), or sports (Enright & O'Sullivan, 2012). For example, Rosebery et al. (2010) showed that designing instruction on the basis of students' everyday sense-making practices in science instruction promoted more profound learning of scientific concepts of thermodynamics than conventional school instruction, determined both in terms of the scientific quality of the students' reasoning in benchmark discussion and by administering standardised science achievement tests. In this pedagogical approach, priority was given both to inviting and to recognising students' everyday reasoning experiences and provisioning the classroom with resources that made the structure and big ideas of the scientific domain visible to the students. The lessons were videotaped, and the researchers and the teacher searched for students' emergent new understanding and ideas from the videotapes. Both everyday and scientific reasoning were made objects of inquiry, and children engaged in analytic work across the borders of diverse forms of reasoning. The authors concluded that heterogeneity is fundamental for robust conceptual learning in science.

Second, some of the pedagogical approaches in this category of our analysis aimed at fostering creativity and capacities of creative production in students. Such examples include, research studies on creative collaborative writing (Kumpulainen, Mikkola, & Jaatinen, 2014), digital storytelling (Bjørgen, 2010) in primary school,

and media studies in vocational education (de Lange, 2011). In media studies in particular, this has involved a shift in conceptualising students from consumers to producers of media (Amdam, this volume; de Lange, 2011). De Lange (2011) examined vocational media studies course in a Norwegian upper secondary school. In the course, the media teachers and their students worked together to collaboratively plan, execute, and evaluate classroom-based media projects. The aim was to permit the students to address curricular goals on the basis of their informal media experiences. The findings of the study showed that the participative procedure of the course created a transactive space for students to bring in their informally developed expertise in using digital tools and to challenge the structuring of the classroom work. However, the author cautions that the students' experience in using digital tools did not guarantee a reflective or knowledgeable perspective on their own digital practice. Rather than simply developing productive strategies of digital production, it was essential that the teachers also confronted and challenged the student perspectives.

Third, the pedagogical approaches that were about civic life argued that addressing complex problems that had wide social significance and that intersected with students' lives could develop capacities of active citizenship in students. These approaches dealt with participation in local political debates concerning cycling (Rajala, Hilppö, Lipponen, & Kumpulainen, 2013), determining the students' personal impact on climate change (Fauville, Lantz-Andersson, Dupont, Mäkitalo & Säljö, this volume), or confronting affluent students' ideas about social justice issues through engaging them in mathematical learning activities (Esmonde, 2013). In these approaches, the students' personal experiences and knowledge were confronted and expanded through engaging them in pedagogical activity.

For example, Fauville et al. (this volume) studied how a digital tool for calculating a carbon footprint was used by classes of high school students around the world. The carbon footprint calculator measures the quantity of a person's carbon dioxide emissions associated with his or her lifestyle and visualises this otherwise invisible aspect of the person's environmental impact. The students used the calculator to estimate how different activities of their everyday lives contributed to their carbon footprints and compared the results to the local and global averages. Students were also prompted to reflect on how to reduce their carbon footprints. The averages of each of the participating classes worldwide were then displayed on a digital map, and the students took part in international online discussions about the topics of climate change and its mitigation. Finally, students completed a questionnaire regarding the pedagogical activity. The study showed that involvement in the activity triggered emotionally and morally charged reactions, such as pride and guilt, among the students. The pedagogical activity also allowed the students to shift their focus between local and global perspectives in ways that challenged and expanded their views about the topic. The focus on a local perspective was important because reflections at this level enabled students to feel responsible for the environment and take action. Yet, the possibility to shift to a global perspective fostered the students'

awareness of the issues at a general level, enabling them to make sense of their local life styles in the global context.

Fourth, in a number of studies we reviewed, the capacity to connect learning across contexts was seen as a valued learning outcome in itself. This argument was most visible in the seamless-learning approach (Chen, Seow, So, Toh, & Looi, 2010; Wong, 2013), whose basic premise is that students need to 'continually enhance their knowledge and skills' (Chen et al., 2010). Through a long-term process of enculturation from facilitated to self-directed seamless learning, the students' learning was argued to move beyond the acquisition of content knowledge to developing a capacity to learn seamlessly across contexts.

Wong (2013) presented two design experiments in Singapore in which seamless learning was fostered by giving primary school students smart phones that featured a digital camera and mobile learning-environment software. The smart phones functioned as "learning hubs" that the students carried with them all the time, enabling them to manage their seamless learning across contexts and activities. The pedagogical design involved a cyclical model consisting of four types of activities: learning engagement, personalised learning, online social learning, and in-class consolidation. Some of these activities took place in formal, and some in informal, settings. The first design experiment lasted eight months and involved learning idioms in Chinese, and the second one involved a series of inquiry-based science learning projects over two years. Among other things, in both projects, the students made observations and took photos in their daily encounters outside of school and associated these photos with the knowledge learned in the class. The students' photos and other learning products that they created were then discussed in a virtual learning environment among peers and in class, which was facilitated by the teacher.

Whilst in both of the projects the seamless-learning design contributed to the conceptual learning of the students, indications of the emergence of limited but growing self-directed seamless learning were documented. In the first design experiment, the students, on their own initiative, started to take photos illustrating given idioms in their homes and in other locations of their everyday lives. Thus, the formal artefact creation activities "spilled into" the students' informal settings. In the second design experiment, the students started to sustain informal inquiries on topics of their own interest with the aid of the smart phones. The researchers interpreted these as indications of their success in "planting a seed of seamless learning in the children" (Wong, 2013, p. 334).

Overall, in comparison to the other rationales, in many of the pedagogical approaches addressing the learning requirements and competences of the 21st century, the students own interests and concerns were not always given a prominent role. For example, in a study by Rajala et al. (2013), it was the teachers who formed the leading theme of the students' inquiry project, and the students' interests were not heard at this initial stage of launching the activity. Other studies, on the other hand, have warned about the domestication of student out-of-school learning in which the official culture appropriates the unofficial one for its own ends (Hull &

Schultz, 2001; James, Purohit, & Walsh, 2006). In all, these challenges call forth the important role of pedagogical culture, including institutional and social norms, in mediating students' connected learning opportunities (Alexander, 2008; Kumpulainen & Renshaw, 2007).

Learner Agency and Identity across Contexts

This rationale broke out of a school-centric focus and depicted school as only one among many settings in students' learning ecologies (Barron, 2006). In pedagogical approaches motivated by this rationale, students were seen as capable of playing a role in their own development, and emphasis was placed on fostering their agency and ownership in learning. This rationale also involved a reconceptualization of learners as crossing boundaries across contexts (Akkerman & Bakker, 2011) and operating at the intersection between school and other contexts. Students were supported in negotiating their identities at the boundaries of the multiple, and sometimes contradictory, activities that comprised their learning ecologies, and in changing their participation in these activities.

Some of the pedagogical approaches advanced this rationale by creating online learning spaces that resembled those that students used in their leisure time (Erstad, 2014; Kumpulainen & Mikkola, 2014; Vasbø, Silseth & Erstad, 2014; Lantz-Anderson, Vigmo & Bowen, 2013; Vigmo & Lantz-Anderson, 2014). The aim was to let the students take these digital spaces as theirs and to enable them to use the advanced and creative media practices they had developed in their leisure time (Drotner, 2008; Vigmo & Lantz-Anderson, 2014). The digital spaces included commercially available digital tools, such as blogging (Vigmo & Lantz-Anderson, 2014), Facebook groups (Lantz-Anderson et al., 2013), and online learning spaces produced for the purposes of the research (Erstad, 2014; Kumpulainen & Mikkola, 2014; Vasbø et al., 2014). These digital tools created hybrid spaces for meaning-making in which the students' different identities, interests, and discourses intersected. However, in these pedagogical approaches, the students were not provided with deliberate support for negotiating and translating difference and managing tensions involved in these encounters.

For example, Lantz-Anderson et al. (2013) studied the pedagogical use of a Facebook group in English-learning classes; 60 students aged between 13 and 16 from Colombia, Finland, Sweden, and Taiwan participated in the study. The aim was to generate extended spaces for collaborative language-learning in educational contexts in which students merged the school subject of language-learning and the communicative use of language in their everyday lives. The task assigned to the students was designed to give maximum space for students' everyday ways of using language and to avoid the activity becoming just another regular school activity. To this end, the design allowed for participation in the group to be voluntary and instructional guidance to be kept to a minimum; in addition, students' contributions to the group were not assessed by the teachers.

The study showed that the conventional educational activity was resistant to being extended to incorporate non-school language use and that the conventional framing of the activity was sustained both by the teacher and the students. Students initially interpreted the task as a regular school task and their postings—framed as expository school texts—were acknowledged or commented on only minimally by the other students. However, an expansion of the activity took place through a playful interaction that challenged the formal language use in the group. A posting by one of the students that made fun of the assignment generated a lively exchange of comments that diverged from formal language use and resembled young people's everyday interactions in social media. A tension between official and unofficial language uses was evident in these exchanges, and the teacher and some of the students interpreted the divergent actions as misbehaviour. Yet, despite the seemingly unproductive nature of these exchanges, they marked a shift in the interaction pattern after which the students more frequently commented on each other's postings. The students also started to use a more casual communicative style that incorporated features from their everyday ways of interaction. The results of the study highlight that extending the official classroom space to incorporate students' everyday ways of engaging in digital media was not trivial. Instead, creating hybrid spaces of language-learning involved conflictual negotiations about what counted as a legitimate framing of the activity and correct language use.

In some of the pedagogical approaches guided by this rationale, deliberate attempts were made to support the students in negotiating the discontinuities within their learning ecologies. In a study by James et al. (2006), U.S. middle school students in New York's Chinatown were asked to document their literacy practices and events in and outside of school by keeping literacy logs. Prior to doing this, the teacher and the students discussed with the students what 'literacy' and 'literacy events' mean. A researcher then analysed the students' logs and discussed the results with the students. Based on the results, each student investigated further one student-selected literacy area, using ethnographic methods that were taught to them. Finally, the students investigated researcher-selected literacy practices in groups.

Another example of supporting students in navigating amidst different settings of their learning ecologies relied on a pedagogical culture of dialogic inquiry. Kumpulainen and Lipponen (2010, 2013; Kumpulainen, 2013) studied a third-grade classroom community in Finland that they characterised as operating according to the principles of dialogic inquiry. These principles included an emphasis on joint exploration and negotiation of meanings. Classroom members were expected to build on each other's knowledge and experiences, and in doing so, to further extend their collective thinking about the issues in question. The authors showed that the classroom interactions positioned the students with agency to initiate discussion and to negotiate, challenge, and justify ideas. The discussions provided support for the learners to revisit and reflect on their personal experiences and to weave experiences and worlds together.

DISCUSSION

Connecting learning across school and out-of-school contexts is a growing concern in educational research and practice. This concern reflects a turbulence of societal demands for schooling, stemming from constantly changing private, public, and working lives in contemporary knowledge societies (Biesta, 2013; Erstad & Sefton-Green, 2013; Kumpulainen, 2013; The New London Group, 1996). In this chapter, we have reviewed pedagogical approaches that addressed this concern by connecting school learning to students' everyday lives outside of school. In particular, we identified three pedagogical rationales that guided these approaches. We also analysed the pedagogical practices and tools that were associated with these rationales. The first rationale, educational equity and inclusiveness, had already been identified in earlier reviews of research on the topic (Hogg, 2011; Hull & Schultz, 2001). In addition to reaffirming this finding, our review extends this earlier work and brings forth the rationales of learning requirements and competences of the 21st century and learner agency and identity across contexts. Our review thus provides an extended and more recent overview of the pedagogical approaches and rationales for connecting student learning across school and out-of-school contexts.

The rationale of educational equity and inclusiveness addressed a concern that instructional and evaluative practices in schools tend to favour the knowledge and experiences of students whose backgrounds are similar to those of teachers and dominant cultural groups over the knowledge and experiences of under-represented students. This rationale therefore reconceptualises the underachievement of minority students in terms of sociocultural mismatches rather than their deficiencies. The pedagogical approaches guided by this rationale—carried out in schools of students from marginalised cultural or socio-economic groups—gave opportunities for these students to take an active part in the classroom activities and to be recognised as valued thinkers and doers. A common orientation of the teachers and researchers was to genuinely learn from, and reflect on, the diverse lives and sense-making practices of these students and to connect the students' funds of knowledge with instruction. Yet, there was variation with regard to whether students or adults determined which out-of-school learning was recognised and brought into the classroom (see also Hogg, 2011; Rios-Aguilar, Kiyama, Gravitt, & Moll, 2011). Approaches that rely on adult practices may ignore the fact that students create funds of knowledge independently of their family, including those stemming from popular culture and children's peer cultures (Barton & Tan, 2009). The pedagogical approaches guided by this rationale also varied with respect to whether they included rigorous analyses of disciplinary concepts and practices (Buxton, 2006; Rosebery et al., 2010; Warren et al., 2001) or whether they focused on the instruction in general terms and only paid close attention to students' out-of-school learning and interests (e.g., Barton & Tan, 2009; Gutiérrez et al., 1999; Moll et al., 1992; Upadhay, 2009). The promotion of inclusive instructional practice sometimes challenged the established

instructional and disciplinary practices since it involved questioning taken-for-granted values, curricular content, and instructional approaches. Its transformative nature could provoke conflicts and was thus sometimes risky for teachers and students (Gutiérrez et al., 1999; Zipin, 2009). In addition, implementing inclusive practices can occasionally reveal how the new practices themselves have been built on stereotypical cultural imagination, despite their deliberate effort to resist this. For example, Solsken, Willett, and Wilson-Keenan (2000) have demonstrated how new classroom practices that were designed to be responsive to marginalized communities unintentionally reinforced the discrete boundaries between the linguistic practices of different cultural groups. This oversight of the more complex and hybrid composition of language and cultural practices then hindered the teacher in recognizing and supporting the unique contributions of children belonging to mixed cultural families.

The second rationale, learning requirements and competences of the 21st century, involved fostering students' competences required in the academic, working, or civic lives of this century. Some of the approaches guided by this rationale questioned conventional notions of academic learning that were claimed to produce a disconnection between students' learning in and out of school. Robust engagement in authentic disciplinary practices was argued to involve teachers and children juxtaposing and merging forms of thinking, communicating, and material practices from different social and cultural contexts (Kamberlis & Wehunt, 2012). Similarly, the development of creative production competences necessitated by today's economy and working life was seen to rely on a creative process distributed in and across the different sociocultural contexts that the students inhabited. Nevertheless, the expertise that students developed outside of school, such as that in digital production, were not seen as self-sufficient but as complementary to what they developed in school (de Lange, 2011; Kumpulainen et al., 2014). In some of the pedagogical approaches that addressed this rationale, active citizenship in today's societies was seen to develop through dealing with complex problems that intersected with students' lives and had wider social significance. In these approaches, disciplinary knowledge and practices were employed to expand students' understanding of aspects of their lives (Esmonde, 2013; Fauville et al., this volume) or to take action to influence their local communities (Rajala et al., 2013). Finally, a capacity to use digital technology to sustain and bridge learning across contexts (a capacity to learn 'seamlessly') was seen as an essential competence in itself for adapting to the demands of life in this century (Wong, 2013).

The third rationale, learner identity and agency across contexts, took students' whole learning ecologies as a starting point for pedagogy. This rationale challenged the view of schools as providers of pre-defined routes towards adulthood, citizenship, and working life. In particular, granting legitimacy for a variety of literacies, practices, and forms of knowledge that the children and youth had developed and employed outside of school was considered important in this rationale (Erstad & Sefton-Green, 2013; Kumpulainen et al., 2010). Some of these approaches provisioned students

with online spaces that resembled those that the students used in their leisure time. Yet, the ways in which the virtual spaces were framed in students' peer cultures often clashed with how formal instruction framed these spaces (Lantz-Anderson et al., 2013). These approaches did not provide deliberate support for negotiating and managing difference and tensions involved in the encounters between official and unofficial identities and discourses that were enacted in these online spaces. A key challenge was that seemingly unproductive, or even detrimental, exchanges, such as playful interactions, exchange of emotional experiences, or even non-compliance, had the potential of expanding the official school framing in ways that promoted students' identities of work and creative engagement, as well as the development of a positive community of learning (Kumpulainen & Mikkola, 2013; Lantz-Andersson et al., 2013; see also Rajala & Sannino, 2015). Other approaches provided deliberate support for negotiating the tension between official and unofficial identities and knowledge (James et al., 2006; Kumpulainen & Lipponen, 2010).

The three pedagogical rationales identified in this study can be further discussed by discerning how they relate to the three interrelated functions that educational systems perform: qualification, socialisation, and subjectification (Biesta, 2009). The qualification function involves providing students with knowledge, skills, understanding, and dispositions. This function is often related to preparation for working life but is also important for other realms of life. The socialisation function serves as the sustainment of social cohesion and integration, and of the continuation of cultural forms and traditions. Socialisation can be an explicit aim of a pedagogical approach, but it often remains as an implicit pressure and guidance to conform to given social, cultural, and political orders. Thus, when promoting social cohesion and integration, it is important to pay attention to who is expected to be integrated into what and to cohere with whom, and who defines the standards (Biesta, 2013). The third function, subjectification, is potentially in conflict with the other two functions (see also Bruner, 1996) and can sometimes be very weakly emphasised in a pedagogical approach. Whereas the socialisation function emphasises adaptation and adjustment to given social and cultural practices, subjectification emphasises learners' agentive responses to the demands that are imposed on them. Thus, subjectification deals with students becoming more autonomous in their thinking and acting (Biesta, 2009).

The rationale of learning requirements and competences of the 21st century mostly revolved around the qualification function of education. The pedagogical approaches that addressed this rationale argued that the current knowledge society involved a change in what qualifications schools should provide for the students in order for them to participate in academic, working, or civic lives. In some of these approaches, the socialisation function was also emphasised: the students were, for example, guided to appropriate identities of active and concerned citizens (Esmonde, 2013; Fauville et al., this volume; Rajala et al., 2013). The emphasis on socialisation into identities that seemed somewhat defined from the outset was particularly prominent in the seamless-learning approach (Chen, 2010; Wong, 2013), which

sought to foster the student's progressive growth in a seamless-learning habit of mind. This emphasis was underscored by the aim to develop a taxonomy of seamless mobile-learning skills in order to fine-tune learning designs for nurturing students into becoming better self-directed seamless learners (Wong, 2013).

The two other rationales contrasted with the rationale of learning requirements and competences of the 21st century in that they emphasised the subjectification function more. In other words, the diversity of students' out-of-school learning and interests was seen as providing a sharper contrast and challenge to official school learning (Gutiérrez et al., 1999; Rosebery et al., 2010; Warren et al., 2001). In fact, it was precisely the differences and tensions between the official and unofficial identities, knowledge, and discourses that were seen to have the expansive potential to advance the rationales of educational equity and inclusiveness, and of learner agency and identity across contexts. The former rationale involved an attempt to challenge a process of socialisation of the under-represented students into the values and forms of thinking and communicating of the dominant cultural and socio-economical groups. In the early studies addressing this rationale, the subjectification took place at a group level, as empowerment of the families and communities of the underrepresented students (e.g., Moll et al., 1992). In the more recent work, this emphasis of adult worlds and adult practices was called into question, and the perspectives of individual children and youths were brought to the fore (Barton & Tan, 2009). In the rationale of fostering identity and agency across contexts, the subjectification of individual students was made possible. Yet, this rationale, too, involved the formation of a collective subject: that of a member of children or youth's peer culture.

Discussions around the importance of informal learning are often imbued with rather romantic notions of what out-of-school learning looks like and are also dismissive about the impact and importance of formal schooling in people's lives and the society in general (Hull & Schultz, 2001; Säljö, 2003). However, building the curriculum, largely around the practices and needs of students' everyday lives, easily dismisses the value and power that engaging with more academic practices can have in itself for the lives of students, underprivileged or not (Hull & Schultz, 2001). Critics of the funds-of-knowledge approach, for example, argue that a lack of attention to scientific concepts provided by the school may contribute to the further detriment of the under-represented students' situation, since for many students, schools are essential providers of access to scientific concepts (see Daniels, 2007; Rowlands, 2000). This criticism reflects a wider concern regarding the relationship between the local settings and of the wider society. The value of students' expertise is not only determined locally by teachers, but it is also connected to broader cultural and social systems of meaning. For example, the worth of given expertise or knowledge depends on the access such knowledge gives to particular positions in society (Biesta, 2009). It may not be enough that educational practices are informed or allowing for a wider range of

competencies to be brought into classroom practices. Rios-Aguilar et al. (2011) argue that attention should be given to the examination of processes that convert or transform various funds of knowledge into other more tangible kinds of social and cultural capital, such as better grades, higher college-enrolment rates, or higher civic participation. Yet, too much emphasis on standardisation and predefined end points of learning in schools can re-evoke the deficit perspective towards under-represented students and hinder the mobilisation of the resources they have at their disposal. Furthermore, the public sphere is increasingly becoming a space for the negotiation of differences in cultural practices and lifestyles. The private spheres are similarly going through major transitions and personal lifeworlds are becoming more diverse and overlapping, and less clearly bounded. These ongoing societal changes challenge the role of schools as providers of predefined routes towards adulthood, citizenship, and working life. Children and young people can no longer build on taken-for-granted social identities but need to engage in identity making as integral part of learning (Beach, 1999).

Overall, the findings of this study point out that the connection between school learning and other more informal learning practices is more complex than it would seem at first-hand. Our findings illuminate the multiplicity and heterogeneity of the reasons for connecting student learning across school and out-of-school contexts. The rationales we identified in this study are not necessarily mutually compatible but reflect a complex set of interests and agendas, also conflicting ones. On the one hand, the rationales provided by some of the pedagogical approaches can be traced to economic rationales according to which education systems are viewed as instruments for economic change (Ozga & Jones, 2006). Such economic rationale views learning as a demand posed on individuals—a continuing demand to adapt and adjust to the changing and inevitable economic conditions—rather than as a right that societies are responsible to guarantee for the citizens or a way to change the society for the better (Biesta, 2013). On the other hand, other pedagogical rationales stemmed from agendas for promoting personal development or democratic participation and social justice. The views of education are always based on values and beliefs about a good society and the nature of childhood. If we could not recognise the multiple rationales of education, we would negate the possibility of making political choices concerning the societies towards which we would like to proceed. Our review can be regarded as an attempt to make these educational rationales more visible for reflection and modification at this specific point in time and space.

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Antti Rajala
Department of Teacher Education
University of Helsinki

Kristiina Kumpulainen
Department of Teacher Education
University of Helsinki

Jaakko Hilppö
Department of Teacher Education
University of Helsinki

Maiju Paananen
Department of Teacher Education
University of Helsinki

Lasse Lipponen
Department of Teacher Education
University of Helsinki