NJCIE Nordic Journal of Comparative and International Education

ISSN: 2535-4051 Vol 8, No 1 (2024) https://doi.org/10.7577/njcie5535

Article

Action research and professional development in schools: Reflection as quality development and knowledge production

Kristin Støren
University of South-Eastern Norway
E-mail: Kristin.storen@usn.no

Abstract

This article examines practitioner action research in schools and how action research can enhance practice and generate knowledge through partnerships between academia and the education sector. In 2020, revisions to the Norwegian curriculum for primary and secondary education introduced guidelines for professional work. The changes in the curriculum framework entail teachers' collaboration in knowledge production - utilizing research and their own experiences in the process. This changed the formal role of teachers from transmitting established knowledge to producing knowledge in professional development and research activities. The new regulations can be related to traditions within practitioner action research.

The article explores how action research can be used as a methodological framework in the professional work of schools. The starting point for the article is a thematic analysis of reflections from an action research project named *Deeper Learning – How?*, in which six schools participate in developing a model for unit planning. Structured interviews were conducted with members of school development groups in the schools every six months over 3.5 years, totaling seven interviews per school. The participants' reflections on their professional work serve as the empirical basis for the article.

Results from the thematic analysis demonstrate that participants employed the action research process as a methodological tool to cultivate new insights and enhance practice. These reflections enrich the schools' comprehension of their educational practices and lead to measures for improvements, actions, and change. The results also highlight that proactive leadership, agreed-upon measures, teamwork, and a consistent rhythm in professional work are vital for educational practice development and knowledge production.

Keywords: Practitioner action research, Insider research, School development

Introduction

In this article, I explore the opportunities and knowledge challenges that can arise through the application of action research in schools. I also examine how action research can serve as a methodological framework for fostering professional development, enhancing school development, and generating both practical and theoretical knowledge. Action research is research where the main aim is to improve a situation and where the researcher in various ways (1) participates in the actions that are being carried out, (2) reflects on the experiences and (3) uses reflections and additional data for (a) knowledge production and for (b) planning improved actions. Action research is not a research method in a strict sense but rather a framework or approach to research that encompasses various designs of underlying qualitative and quantitative methods (Bradbury, 2015; Cochran-Smith & Lytle, 1999; 2021; Coghlan, 2019; McNiff, 2011; Reason & Bradbury, 2008; Ulvik et al., 2022). Knowledge production in this context can be understood as the process of building and rebuilding conceptual frameworks that link action and problem-solving to the immediate context and its social, cultural, and political context (Cochran-Smith & Lytle, 2021).

The starting point for the article is reflections collected in 42 structured interviews conducted at six primary and lower secondary schools over 3.5 years. The interviews were part of the professional doctorate action research project *Deeper Learning - How?* - where the schools participated in the process of testing and further developing a didactical reflection model for unit planning to enhance deep learning. Teachers engaged in reflection to evaluate the development of their teaching practice, using these reflections to generate new academic knowledge and enhance their teaching practice. The didactical reflections in the project involved contemplating inquiry-based and deep learning on two levels: for the students and the teachers. Deep learning is defined as:

> …to gradually develop knowledge and lasting understanding of concepts, methods, and relationships within subjects and across subject areas. This entails reflecting on our learning and using what we have learned in various ways in familiar and unfamiliar situations, alone or with others (Utdanningsdirektoratet, 2021 - author's translation).

The didactical reflection model comprises four primary steps of reflection in unit planning, with an additional preparation step: (0) establishing an overview of the student's academic and social achievements and progress, (1) assessing prior knowledge and generating interest in the upcoming topics, (2) identifying learning objectives and aspirations, (3) pinpointing evidence of learning, and (4) planning the period's progression, including learning activities and content. Each step in the model includes underlying reflection questions (Støren, 2023).

In Norwegian schools, it is common to create school development groups to facilitate school improvement. These groups typically include school leaders and teachers in leadership roles. In the project, these pre-existing groups were leveraged as co-researchers - implementing changes and actively contributing to the

research process by sharing their experiences and reflections. The didactical reflection model was implemented at the same time as a revised national curriculum plan - offering the participating schools support in the implementation processes. Established organizational structures contributed to coherence between research activity, developmental tasks, and day-to-day operational responsibilities.

The article is guided by the following research question:

> How can teacher reflection within practitioner-driven action research contribute to practical and theoretical knowledge production?

Studies of action research

Various researchers, including Cochran-Smith, Lytle, Coghlan, Hiim, Postholm, Smith, Reason, and Bradbury, have enriched the field of educational action research through theoretical contributions, reviews, and typologies. Cochran-Smith and Lytle (2009) present the concept of *inquiry as stance*, emphasizing three dimensions for understanding teacher learning and professional development. Coghlan (2019) offers insights into conducting organizational action research based on key theories and methods. Hiim (2020) conducts a comparative analysis of action research forms, exploring purposes, development methods, researcher roles, and epistemological foundations. Postholm and Smith (2017) delve into practice-oriented action research in education, emphasizing interaction, developing relevant scientific knowledge, and using formative interventions. In addition, Reason and Bradbury (2008) distinguish action research as practitioner, professional, and network development. However, establishing a review of practitioner research in education is challenging due to varied methodologies and terminology (Mills et al., 2021; Rutten, 2021; Ulvik et al., 2022). Nonetheless, scholars highlight the need to further study the link between practitioner research and school development (Cochran-Smith et al., 2021; Lillejord et al., 2021; Rutten, 2021). In my study, I aim to contribute to the research field by exploring how professional communities can enhance quality and knowledge production in their local curriculum work, following the structure of a practitioner action research project.

In comparing my findings with other studies involving practitioner-driven action research, I have delved into an empirical study in participatory action research from Eritrea and a theoretical study on professional teacher development from Australia. In the Eritrean study, Idris and Asfaha (2019) explored the application of participatory action research to school development. They emphasized the importance of allocating time for reflection and creating space for innovative practice development. In the study by Sachs (2016) professional development is linked to the contemporary era. Sachs argues that the time for an industrial approach to the teaching profession has passed and that systems, schools, and teachers should become more research-active, advocating for validation and support for teachers' practices through research. When comparing these findings with my analyses, professional learning, various forms of knowledge production

in school-based research, and the teacher's role as a researcher is significant. In this comparison, I will employ Stenhouse's (1981) distinctions between knowledge for *the village* and *the world* as a starting point, linking back to the assumption that action research can be conducted for both academia and the development of practice.

I base my approach on experience and reflection as the foundations for knowledge production. This perspective builds upon the ideas of Bruner (1991), Dewey (1916/2001), Gibbons (1999), Gibbons and colleagues (1994), and Kvernbekk (2005; 2011). It is echoed in various approaches to action research within an educational context, as discussed by Coghlan (2019) and Hiim (2020). In the following sections, I will elucidate the intricate relationship between experience, reflection, and knowledge production in practitioner research. Following this, I will delve into different approaches within action research in educational settings and use these perspectives to situate the action research project *Deeper Learning - How?* as the foundation of this article.

Experience, reflection, and knowledge production

The research project *Deeper Learning – How?* is grounded in a reflective understanding of organizational growth where reflections and decision-making in professional learning communities are seen as essential to building capacity (cf. Nonaka & Takeuchi, 1995). Many educators view reflection on personal and others' experiences as crucial for learning and development. Researchers, including Kvernbekk (2005; 2011) and Gibbons et al. (1994), explore the interplay between practical and theoretical knowledge in education. Kvernbekk (2005) examines the tension between pedagogy as an intentional discipline and a science. Pedagogy, viewed as an intentional discipline, is goal-oriented and practice-oriented, generating knowledge for practice. Gibbons et al. (1994) distinguish between experimental/theoretical and practical knowledge production. Practical knowledge production occurs within real-world contexts, involving problem-solving, diverse organizational structures, and social responsibility, and relies on a comprehensive quality control system (Gibbons, 1999, p. 33).

A reflective understanding of professional learning can be rooted in reflective research traditions like hermeneutics and pragmatism. Gadamer (2012) showed how constructing meaning involves interpreting new experiences considering existing knowledge and considering pre-understandings as conditions for new insights. Furthermore, Gadamer (2012) distinguished between experiences validating and challenging pre-existing understanding, emphasizing that disruptions lay the foundation for new insights. In the ongoing process of acquiring knowledge, pre-understanding, openness, and engagement are crucial (Gadamer, 2012). Educational psychologist Jerome Bruner (1991) explored the idea of narrative experiences as objects of construction and meaning-making. His perspectives can be linked to practitioner action research where experience and reflection are the foundations for knowledge production. Bruner differentiated logical and

narrative ways of experiencing and constructing reality, tying them to different domains. Logical-scientific thinking develops verifiable and general knowledge, while narrative experiences relate to humanistic, cultural, and social domains. Bruner stressed that, in constructing narratives, validity is not crucial. Quality is tied to credibility, authenticity, and reliability and not to generalizability and accurate measurement of a phenomenon (Bruner, 1991). Dewey (1916/2001) demonstrated that experiences facilitate learning through reflection and highlighted the role of activity within them. He emphasized connecting the active and passive aspects of an experience through reflection for knowledge production, stating: "We do something to the thing and then the thing does something to us again. The connection between these two phases of experience measures how fruitful or valuable the experience is" (Dewey, 1916/2001, p. 53). The active side involves action and effort, while the passive side pertains to what the experience exposes and its consequences. Thus, meaningful experiences result from reflecting on and understanding connections within them, critiquing dualistic separations common in scientific and educational thinking (Dewey, 1916/2001), which links back to the main aim of action research as discussed in the introduction.

Methodology in *Deeper Learning – How?*

The action research project *Deeper Learning – How?* is grounded in an epistemological perspective that emphasizes the significance of reflecting on one's own experiences and those of others as crucial sources of learning and development. The project was conducted with six participating primary and lower secondary schools from February 2020 to September 2023 in a municipality in the Eastern part of Norway. The schools were involved in implementing and further developing a didactic reflection model for local curriculum and quality development work. The project engaged the entire professional community within the schools. Participants planned learning periods based on a semester structure. Planning group members at the schools took on roles as co-researchers and participated in evaluating and further developing the model. Semi-annual evaluation points were conducted as structured interviews throughout the project period, totaling seven evaluation points per school.

During these evaluations, data on students' learning and social development were collected, reflections on the work with didactic reflection in local curriculum development were gathered, and ideas for further model development were recorded. Data recording was conducted using a survey tool. The answers were written down in the interview setting and were approved by the school development groups before being saved. The participants reflected on the development of practice and the development of theory (the didactical reflection model) using observation notes, local curriculum documents, data about students' learning progress, theoretical knowledge, and self-reflection (Støren, 2023). In the following sections, I will elucidate how knowledge is constructed through experiences, reflection, and meaning-making, and how practitioner research serves as a framework for my project.

Practitioner research

Several researchers have structured typologies that compare approaches and discuss the roles of practitioner researchers and university researchers (e.g., Carr & Kemmis, 1986; Chilisa, 2012; Coghlan, 2019; Hiim, 2020; Kemmis, 2007; Kemmis & McTaggart, 2005; McNiff, 2011; Noffke & Somekh, 2009; Stringer, 2014). To position the project discussed in this article, I use McNiff's (2011) distinction between action research and research in action and Hiims (2020) and Coghlan's (2019) typologies.

McNiff (2011) distinguishes between action research and research in action, highlighting that in traditional research and interpretive action research, a distinction is drawn between those who act (*doers*) and those who generate new knowledge from those actions (*thinkers*). Other traditions acknowledge and include the participants' reflections as part of the knowledge base. The nature of knowledge in these two traditions differs. Traditional research externalizes knowledge about others' actions, while participatory and practitioner action research internalizes knowledge about our actions. *Deeper Learning - How* is a practitioner action research project where the participants' reflections contribute to the knowledge-base. This makes the participants both *thinkers* and *doers*.

Hiim (2020) distinguishes and compares five key action research approaches framed by context, purpose, research role, methods, documentation, and scientific foundation: (1) Dialogue-based action research aims for democratic decision-making and development strategy integration. The researcher facilitates dialogue conferences, generating organization rapport and field reports; (2) Critical-utopian action research uses utopian workshops as platforms for idea exchange and new solutions. The researcher facilitates workshops and documents project developments; (3) Cooperative Action Research focuses on democratic, involving, and relevant education. It involves cyclic planning, action, reflection, assessment, and revisions, with systematic documentation through reports and data. Researchers lead the process, while teachers contribute experiences; (4) Practitioner research emerges from cooperative AR to address the researcher-practitioner duality and teacher empowerment. Teachers take on researcher roles, identify developmental areas, and conduct research, with academia offering research training and facilitation; and (5) Participative action research is politically oriented, aiming for empowerment and democratization through collective processes and knowledge production. Researchers lead and document the process for the participating practitioners. In *Deeper Learning – How?*, the main objective is to develop practical and theoretical knowledge about deep learning and local curriculum work. The practical knowledge relates to teachers' experiences using a didactic reflection model in planning, implementing, and evaluating deep learning processes. The theoretical knowledge production is linked to further developing the model. This integrates the project with the internalization of knowledge about our actions to improve practice (cf. Hiim, 2010; McNiff, 2011), aligning it with the practitioner research approach outlined in Hiim's (2020) key approaches.

Coghlan's (2019) position of action research within organizations in four distinct quadrants captures the level of self-reflection and system reflection: Quadrant one represents descriptive or ethnographic research designs where neither the researcher's development nor system change is the focus. Quadrant two encompasses pragmatic and problem-solving research designs, such as coaching, action learning, and leader-initiated organizational development projects. Quadrant three spotlights research designs that concentrate on the researcher and self-reflection, valuing the exploration. Research within this quadrant is usually process-oriented, self-realizing, and self-reflective. Quadrant four refers to research designs that emphasize both the researcher and the system, with a shared goal of problem-solving, development, or change. Research within this quadrant will typically be problem-solving and system-changing in nature *Deeper Learning – How?* involves a problem-solving and system-changing approach, positioning the project within the fourth quadrant of Coghlan's (2019) model.

Analysis

To gain insights into how teacher reflection within practitioner research in schools can enhance quality and knowledge production, I conducted a thematic analysis. Thematic analysis enabled me to identify, analyze, and report patterns or themes within a dataset (Braun & Clarke, 2006; 2019). The thematic focus in my work is centered on meaningful knowledge production through reflective processes (Braun & Clarke, 2019).

The thematic analysis was conducted using Braun and Clarke's (2006) six-step model, which includes the following stages: (1) conducting an overview of the data, entailing providing a comprehensive description of the dataset or a detailed account of a specific aspect, (2) coding the dataset, (3) examining the themes within the dataset, (4) organizing themes and patterns in the dataset, (5) defining coherence and patterns within the dataset, and (6) summarizing the findings in this article. This approach represents a deliberate effort to elucidate shared patterns of meaning in the qualitative data (cf. Braun & Clarke, 2019; Støren, 2022).

In the thematic analysis, data from the interviews were initially coded based on the predefined research question. This semantic approach involved identifying and analyzing themes that were readily apparent in the texts. To achieve this, a comprehensive review of the entire content was conducted, with thematic patterns within the text color-coded, and margin notes added. This approach primarily focused on what was explicitly stated in the interviews, emphasizing the most visible themes. This process led to the creation of an initial list of thematic patterns, encompassing the following key themes: (a) the practitioner's research position, (b) the development of the school organization and the practitioner, and (c) the production of practical and theoretical knowledge. This initial phase of the analysis was theoretical and deductive, as it was guided by defined theoretical frameworks and provided detailed insights into certain aspects of the dataset.

Subsequently, the semantic approach was followed by a latent approach, in which a rubric containing the initial themes was used to code and explore the underlying or hidden patterns of shared meaning within the data. This included implied and inferred patterns of meaning within the described categories. The thematic patterns were examined to uncover nuanced qualities before the findings were compiled and described. This latent phase of the analysis involved an inductive approach, involving interpreting the data beyond its explicit meaning.

Results

The analysis uncovered patterns of shared meaning-making in the interview reflections across the participating schools. The schools involved in the project collaborated and exchanged experiences throughout the project period both independently and during organized semi-annual reflection seminars. These reflections served as a source of inspiration for making changes in their practices and for the continued development of the didactical reflection model for unit planning. Below I present the key findings before delving into the opportunities and issues related to knowledge production. The key findings are illustrated with a few short quotes from the participants, which will serve as examples. The quotes are translated by the author from Norwegian to English.

Conditioning practitioner's research position

The reflections within the school development groups demonstrated engagement in the action research project, but establishing a research practice required time, effort, structure, and leadership. Some practitioner researchers found it challenging to create settings for using the didactical reflection model, allocate sufficient time to thoroughly test out the stages, and guide the knowledge work. Schools that faced the most difficulties also described a weak culture of shared planning, teamwork, and cooperation. The participants associated the challenges with the large number of operational tasks imposed on the school. They explained that they had to designate the reflection meetings as "sacred" on the calendar to ensure everyone's commitment to the meetings. Some participants even color-coded the calendar to emphasize the significance of the meetings:

> We need a significant amount of time for planning units to facilitate effective processes. We are collectively committed to working in a more exploratory and problem-solving manner, both for the teachers and the students… …We need to keep the structured planning with red and blue Wednesdays. This must be a priority both within the team and throughout the school as a whole…

The interview reflections revealed stages in the development of the school as a learning organization and the practitioner research role. Involving the establishment of spaces and the definition of time for shared reflections and collaborative efforts around practice, the initial step was initiated. Proactive leadership, measures, teamwork, and a rhythm in professional work were emphasized as crucial to success by the

participants. Creating a shared and explicit understanding of practice, drawing upon experiences and theoretical knowledge, constituted the subsequent step. A culture for sharing and a methodological framework for sharing were highlighted as important features at this stage. The third step involved knowledge production, utilizing existing knowledge to improve practice, and leveraging experiences to generate new knowledge. Professional courage, methodological competence, and theoretical competence were highlighted as essentials at this stage. The practitioner research role is described as contingent upon the professional learning community's ability to prioritize time, share reflections and knowledge, and generate new practical and theoretical knowledge:

> When the new curriculum was introduced, we spent a lot of time unpacking the concepts and developing a common understanding of them. Nevertheless, we must continually keep this knowledge current... …We are action-oriented in our unit planning. We are pleased to have productive sessions where we can engage in extended planning. The reflections are valuable, and when we evaluate as a large team, we provide depth to our reflections that is useful. This leads to meaningful sequences where we gain a meta-perspective.

Development of the teacher and the school organization

The thematic analysis demonstrated that teachers and school leaders in the project considered reflection on theory and their own, as well as others' experiences, as important sources of learning, contributing to the development of both individual teachers and the school organization. They differentiated between tacit and explicit knowledge, emphasizing collaborative reflection's significance in fostering shared and explicit understanding of crucial aspects of the curriculum plan and student learning. The participants underscored the importance of sharing examples and reflecting on phenomena within the professional learning communities. The participants hold these reflections in higher regard than external lectures and courses. This allows for converting tacit knowledge into explicit knowledge and transforming individual knowledge into organizational knowledge:

> We have established effective routines for collaborating, sharing ideas, and exchanging experiences… …We use results and assessments… We see that we achieve positive outcomes when we do this systematically...

Examples of the development of teachers' reflections and school practice can be observed in the context of concept learning. The national curriculum plans in Norway are competence-based in the sense that competence goals function as standards for expected learning outcomes and form the basis for subject assessment. A revision of the curriculum plans in 2020 led to a more complex competence concept. *Competence* is understood as being able to use defined knowledge and skills independently in familiar and unfamiliar settings, and with the revision, competence includes deep understanding and the ability to reflect critically upon phenomena (Ministry of Education, 2017). The teachers used time to comprehend a shared and explicit understanding of the competence concept, and they had to get back to these reflections numerous times. The reflections were both practical (related to planning progress in the units) and theoretical (associated with creating a shared understanding of the concept). Explicit and shared

understandings of vital aspects of the curriculum plan were deemed essential for designing units and assessing students' progress on the one hand, and for evolving as a learning organization and participating in knowledge production on the other hand:

> We are more conscious of what competence entails… …We continually discover new facets of the competence concept - we delve into it in our discussions and reflections….

In the context of student assessment and through the implementation of open, creative, and rich tasks, examples of teachers' reflections and the development of school practices can be observed. In the early stages of the project, most students underwent assessment via diagnostic tests, subject tests, and written assignments. Occasionally, students were assigned more open, authentic, and rich tasks. However, these were rarely used as assessment tasks, seldom approached systematically, and rarely utilized as transdisciplinary (across subject disciplines) tasks (cf. Støren, 2023). The reflections within the school development groups reveal that innovative practice, a collaborative environment, and the contemplation of practice examples were vital for developing new methods. Additionally, it was emphasized that school leadership fostering professional dialogues, collaboration, and novel ideas was pivotal within these processes:

> We are now discussing students' learning development more extensively… …We can talk more specifically about students' learning outcomes… …We work more competence-based than we did before… … … We are more conscious of planning both skill-based and competence-based learning activities.

Conditioning knowledge production

The teachers and school leaders described the impact of reflections on various types of student data on the planning process. It was pointed out that student data encompassed more than just test results, survey responses, and grades. Rich data were gathered by analyzing students' work, conducting student interviews, and making observations. Reflections on rich data, teaching experiences, and scholarly literature have been highlighted as valuable sources of new knowledge generation. However, the participants found it challenging to systemize the knowledge work. They explained a desire to establish a more rigorous system to ensure a systematic approach:

> Good routines and high quality have been established for the long learning pathways, but we are working on achieving a more comprehensive structure.

The thematic analysis reveals critical reflections regarding the use of student data in the planning process. In the project's early stages, not all the teachers consistently assessed students' progress and performance in the learning environment and incorporated these reflections into the planning of new units. Often, the knowledge remained tacit and implicit, and it was not systematically reflected upon. The thematic analysis showed that explicit reflection on practice and theory was regarded as crucial to student progress by the

participants and led to the incorporation of an additional stage in the didactical reflection model, known as stage 0. Stage 0 serves as a systematic reflection to assess students' progress and establish explicit, rich, and shared knowledge about the student's progress and learning outcomes among the teachers (Støren, 2023):

> We use Step 0 when planning for learning periods. Students' learning outcomes and well-being are considered when planning units. For instance, we utilize this information in organizing learning activities... …We create programs that help students progress, such as reading courses or social skills courses.

Another example involves reflections on qualities and taxonomies in learning. At the project's outset, reflections about rich learning environments (cf. Robinson, 2011; Shirley & Hargreaves, 2021) revealed that instructions and learning activities primarily concentrated on acquiring skills and knowledge. Students were rarely prompted to independently apply skills, knowledge, values, and attitudes in more open and creative tasks. In the participants' reflections, this was associated with low student engagement, low student achievement, and limited student agency. The participants utilized a combination of reflection on theory and practice to revise the didactical reflection model, systematically distinguishing between competence development, skill enhancement, knowledge growth, and the development of attitudes and values. They also emphasized enhancing student engagement and agency in the planning process. The practitioners describe the planning process as orchestrating a symphony of learning experiences, each possessing distinct complexities:

> The organization of extended learning paths and increased awareness of the competence concept are causing us to change our practices… …Previous practices involving knowledge tests have largely been replaced by more comprehensive assessment methods… …We communicate with the students [in the planning]. When students become engaged along the way, they become more involved.

The reflection stages in the model offer a framework for knowledge work and foster a shared rhythm in practice development and knowledge generation. In a workshop with school leaders participating in the project, some attendees characterized this rhythm as the school's heartbeat. The rhythm needs to strike a dynamic balance to keep the school vital, evolving, and functional, yet deliberate to ensure richness, depth, and comprehensiveness. It was a matter of finding the right pulse. These considerations were revisited in the school development group interviews' reflections, and rhythm emerged as a prominent theme in the knowledge work and self-reflection within the participating schools.

Opportunities and knowledge issues in educational action research

To gain insights into how teacher reflection within practitioner research can enhance quality and knowledge production, I will discuss the key findings. Analysis of reflections in the school development groups reveals that the participants in the project integrated an intentional and scientific approach to local curriculum work (cf. Gibbons et al., 1994; Kvernbekk, 2011). The intentional approach was linked to

changes in practice and the scientific approach was related to changes in the didactical reflection model. Teachers and school leaders engaged in developing the model and alternated between testing the model, evaluating it, and further developing it. This transition between executive practice (using the model and reflection in practice) and an evaluative meta-perspective (reflection over practice) can be linked to the "interview to the double technique" and “zooming in – zooming out” (Fenwick & Nerland, 2014; Nicolini, 2009) and to Deweys (1916/2001) connection of active and passive aspects of experiences. The analysis reveals how shifts in perspective and transition between action and research, have yielded both theoretical knowledge (alterations in the model) and practical knowledge (changes in practice). However, the analysis also indicates that it takes time and effort to cultivate a professional learning community that integrates both the action process and the research process.

The schools involved initiated transforming themselves into learning organizations by creating time and spaces for shared reflection and collaboration. Daily issues diverted time and attention from the reflection meetings, necessitating the formal structuring of the meetings for participants to prioritize and focus. The participants explained that the research project compelled the professional learning communities to adopt a meta-perspective and prioritize proactive endeavors. Shifting effort and energy from problem-solving to proactive initiatives raised ethical dilemmas. Teachers must strike a balance between proactive efforts and problem-solving. The participants elaborated on both challenges and developments in the project, highlighting the dilemmas that emerged in the tension between daily tasks on the one hand and long-term development on the other. Striking this balance was challenging and required adept leadership, support, and teamwork. Within the research project, the structure of the reflection model contributed to sustaining focus on developmental tasks. Following the establishment of a reflection space, participants began to develop a collective and explicit understanding of practice – drawing upon both experiences and established theoretical knowledge (cf. Nonaka & Takeuchi, 1995). Participants described this as establishing a functional rhythm in the school’s knowledge work.

The project's knowledge production was both normative and reciprocal (cf. Kvernbekk, 2011). From a normative starting point, theories predict how one should execute the practice. From a reciprocal starting point, theory and practice will mutually influence each other. The way influence occurs depends on the theories' position and strength within the relationship. The model is founded upon both a normative and a reciprocal relationship between theory and practice. The initial outline of the model was rooted in reflective practice theory and pragmatic theory (cf. Bruner, 1991; Dewey, 1916/2001; Gadamer, 2012) and was formulated within the framework of Norway’s core curriculum for public education (Ministry of Education, 2017). The curriculum plan holds the status of a legal regulation and is inherently normative. The model takes a normative approach in guiding reflections in the professional learning communities, directing them toward influencing educational practice to enhance the implementation of deep learning.

Nonetheless, the utilization and further development of the model can also be linked to a reciprocal relationship between theory and practice. During the semi-annual evaluation phases, participants described their practice using concepts and interpretative patterns, assessed the model, and evaluated their practice by the curriculum's definition of deep learning and informed by research on deep learning. This encompasses both a normative aspect (evaluating one's practice against definitions of deep learning) and a reciprocal aspect (describing the practice, assessing the model, and proposing enhancements). This manifests the teacher-researcher role in both normative and reciprocal knowledge generation.

The professional learning communities in the project contributed to new knowledge production by utilizing existing knowledge to enhance practice and leveraging these experiences to create new theoretical insight. Kvernbekk (2011) employs the terms "weak" and "strong" theories to delineate the role and position of theories. This duality can also be connected to what Gibbons et al. (1999) refer to as practical and theoretical knowledge production. "Weak theories " or “practical knowledge” describe practice through concepts and interpretive patterns. In the project, this can be associated with participants' reflections on the competence concept, deep learning, unit design, formative assessment, and rich and open tasks. Participants developed weak and practical theories by reflecting on what was effective in practice and how to enhance it. They also developed robust theories by using learning theory to analyze practice and by generating novel ideas. These theories had a distance to practice and could hold a meta-perspective and a critical perspective owing to their independence (cf. Nicolini, 2009). The didactical reflection model was cultivated through such dynamic perspectives, driven by the aspiration to establish a theoretical framework for educational planning and development.

Action research, involvement, and school development

In recent decades, action research has gained popularity in the education sector. This can be related to how action research aligns with guidelines and regulations for school-based research and development outlined in governance documents, strategies, and funding arrangements. With the revision of the Norwegian curriculum framework 2020, teacher collaboration and research-based quality development were enshrined in law and regulations (Ministry of Education, 2017; Retningslinjer for tilskuddsordning for lokal kompetanseutvikling i barnehage og grunnopplæring, 2021). With this new legislation, professional and competence development in education transitioned, from 2017 onward, from being state-level initiated to locally founded and decentralized arrangements. Additionally, research funding arrangements were established, including the Research Council's schemes for innovation projects in the public sector and doctoral positions in close collaboration with the universities and the labor market, including the public sector (Mausethagen et al., 2021; Norwegian Research Council, 2023a; 2023b). Research funds previously reserved for researchers from universities and colleges were now allocated to programs where academia and the practice field cooperate as partners in research and development projects. The combination of

initiatives described above aligns well with the framework of action research.

In the project *Deeper Learning - How?*, internalized knowledge production and gradual practice change were fostered through an alternating process between experimentation and reflection on the one hand and knowledge development on the other (cf. Bruner, 1991; Dewey, 1916/2001; Gadamer, 2012; Støren, 2023). However, the two processes were not isolated. Reflections occurred in the project schools both within and over practice, both individually and collaborative with colleagues and students. This happened in structured interview conversations and between them. Practical knowledge development was related to the development of practice. It involved the creation of learning periods with a well-thought-out connection within and across subjects (cf. the phases of the planning model described earlier in the text). This encompassed changes in practice related to interdisciplinary themes in education, cross-disciplinary learning evidence, narrative contexts, and systematic student involvement. Theoretical knowledge development was linked to the evolution of the didactic planning model. While developing the model, participants utilized both academic literature, research literature, and their own practical experiences.

The analysis of reflections within the school development groups reveals a strong relationship between the development of action and the development of knowledge. Both practical and theoretical knowledge production stem from reflection processes within the professional learning communities. This encompasses defined arenas for shared reflection, transforming tacit knowledge into explicit and shared knowledge, and utilizing established knowledge and reflections on practice to generate new theoretical and practical knowledge. When practical and theoretical knowledge develops in tandem, knowledge production can enhance vitality in both ongoing actions and research, as well as what the participants aptly describe as the heartbeats of the learning organization. Tacit knowledge influences explicit knowledge, and vice versa, in a spiral-shaped cycle of action and knowledge production (cf. Nonaka & Takeuchi, 1995). If we revisit the discussion from the 1980s about teacher researchers (cf. Stenhouse, 1981), the question may not be whether teachers can be researchers, but how teachers can contribute to knowledge production in the role of researchers. The results from the thematic analysis indicate rich opportunities for including teachers in research.

International and comparative perspectives on the findings

When comparing the findings from my analysis with those derived from the studies conducted by Idris and Asfaha (2019) and Sachs (2016), recurrent patterns emerge. These patterns suggest that the results from my study might bear relevance beyond the Norwegian context. These recurring aspects pertain to the dynamics involving the teacher, development-related actions, and diverse forms of knowledge production. Idris and Asfaha (2019) demonstrate the importance of allocating time for reflection and creating space for innovative practice development in school development. Sachs (2016) argues for systems, schools, and

teachers to become more research-active, with a viewpoint from Australia. In both studies, an active teacher is assumed and emphasized in the action research processes to enhance school development. This aligns well with the findings of my study.

However, when examining the findings in relation to McNiff's (2011) distinction between those who act (*doers*) and those who generate new knowledge from those actions (*thinkers*), and Kvernbekk (2005; 2011) and Gibbon's (1994) distinctions between practical/weak knowledge and theoretical/strong knowledge, some differences in findings also become apparent. In my analysis, I found that teachers highlighted the value of being able to switch between the development of practice and knowledge production. The role of practitioners as participants in action research is emphasized in both studies by Idris and Asfaha (2019) and Sachs (2016), but the practitioner's research role varies. These studies emphasize either teachers as co-researchers under the leadership of researchers from academia (Idris & Asfaha, 2019) or teachers as researchers for *the village* (Sachs, 2016). Sachs (2016) presents different aspects of continuing professional development in a quadrant model where the axes show the degree of (1) democratic professionalism and (2) attitudinal development. A high degree of democratic professionalism and attitudinal development indicates developmental practices where the teachers explore their practice, transform it and develop new knowledge. However, the descriptions of the knowledge seem to fall within what Kvernbekk (2005; 2011) refers to as *weak knowledge*, what Gibbons et al. (1994) refer to as practical knowledge production, and what Stenhouse (1981) refers to as *knowledge for the village*. It refers to knowledge created by the practitioner for practice development.

In my findings, both the lead researcher (me) and the teacher researchers come from the practice field, and the distinction between teacher researchers and university researchers is less apparent – since we all participate in both practical and theoretical knowledge production. The distinction between *the village* and *the world* is also less evident due to the relationship between the schools participating in the project, the lead researcher (a school leader and researcher), and academia. These findings indicate that directing attention toward developing knowledge for both the practice and research field can impact teachers' engagement in knowledge production and facilitate contributions to bridging the gap between the research field and academia. This prompts a discussion about the dualistic separation between knowledge for the practice field and academia and between teacher researchers and university researchers. All things considered, the world encompasses the village, and the village is part of the world.

Conclusions

The results of a thematic analysis of reflections within six school development groups indicate that experiences within the framework of practitioner action research can enhance research capacity within schools and contribute to fostering partnerships between the education sector and academia. The

participants in the project *Deeper learning - How?* integrated an intentional and scientific approach to local curriculum work, enhancing their practice and developing theoretical frames for unit planning. The findings suggest that practitioner research can effectively shape professional learning and school development. While teachers often grapple with dilemmas related to balancing proactive knowledge work and their ongoing tasks, well-structured systems can facilitate the combination and execution of these various responsibilities.

The findings underscore the importance of structure, proactive leadership, mutually agreed-upon measures, and teamwork as key drivers of progress in these processes. Schools participating in the project *Deeper Learning - How?* began transforming themselves into learning organizations by establishing time and spaces for shared reflections, cooperation, and knowledge production. A thoughtful balance between practical and theoretical knowledge production, coupled with a consistent rhythm in professional work, was considered important by the participants for developing well-functioning professional learning communities.

The findings propose that leveraging established hierarchical structures in schools, which encompass school leaders, school development groups, and professional learning communities, can facilitate integrating the research process into daily school life. Nevertheless, even with these established platforms, it still demands considerable time, effort, and strong leadership. The findings indicate a relation between the development of action and the development of knowledge in the research processes. Both practical and theoretical knowledge production stem from reflections within the professional learning communities. The findings emphasize the necessity for a sustained effort to transform schools into learning organizations and advocate three essential steps: (1) creating dedicated spaces and allocating time for collaborative reflection and cooperation on practice, (2) cultivating a shared and explicit understanding of practice by drawing from both experiences and established theoretical knowledge and (3) utilizing existing knowledge to enhance practice and capitalizing on these experiences to generate new practical and theoretical knowledge. The findings also suggest that practitioner research conducted through collaborative partnerships between the practical field and academia can facilitate knowledge production relevant to practice development and the research domain. Findings indicate that in such partnerships, the gap between the practical field and academia diminishes, and the relationship between university researchers and practitioner researchers becomes mutually enriching – providing knowledge for both the village and the world.

References

Bradbury, H. (2015). The SAGE Handbook of Action Research. In *The SAGE Handbook of Action Research* (3rd ed.). SAGE Publications. https://doi.org/10.4135/9781473921290

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589-597. https://doi.org/10.1080/2159676X.2019.1628806

Bruner, J. (1991). The Narrative Construction of Reality. *Critical Inquiry, 18*(1), 1–21.

Carr, W., & Kemmis, S. (1986). *Becoming critical Education, knowledge, and action research.* London Falmer.

Chilisa, B. (2012). *Indigenous research methodologies.* Sage

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of Knowledge and Practice: Teacher Learning in Communities. *Review of Research in Education*, *24*(1), 249–305. https://doi.org/10.3102/0091732X024001249

Cochran-Smith, M., & Lytle, S. L. (2009). *Inquiry as stance*. Teachers College Press.

Cochran-Smith, M., & Lytle, S. L. (2021). Inquiry in the age of data: a commentary. *Teaching Education*, *32*(1), 99–107. https://doi.org/10.1080/10476210.2020.1868142

Coghlan, D. (2019) *Doing Action Research In Your Organization* (5th ed.). Sage.

Dewey, J. (1916/2001). Erfaring og tenkning. I: L. E. Dale (red.), *Om utdanning. Klassiske tekster* (s. 53-66). Gyldendal.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, *5*(1), 80–92.

Fenwick, T., & Nerland, M. (2014). *Reconceptualizing Professional Learning. Sociomaterial knowledge, practices, and responsibilities.* Routledge

Gadamer, H.-G. (2012). *Sannhet og metode.* Pax Forlag

Gibbons, M. (1999). Changing Research Practices. In J. Brennan, J. Fedrowitz, M. Huber, & T. Shah (Eds.), *What Kind of University? International Perspectives on Knowledge, Participation and Governance* (pp. 23–35).Open University Press.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., & Scott, P. (1994). *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. Sage.

.

Hiim, H. (2010). Pedagogisk aksjonsforskning. Eksempler, prinsipper og kunnskapsfilosofisk grunnlag. Gyldendal akademisk.

Hiim, H. (2020). Likheter og forskjeller mellom tilnærminger til aksjonsforskning. I: S. Gjøtterud, H. Hiim, D. Husebø, & L. H. Jensen (red.), *Aksjonsforskning i Norge: Grunnlagstenkning, forskerroller og bidrag til endring i ulike kontekster (volum 2)* (s. 39-62). Cappelen Damm Akademisk/NOASP

Idris, K. M., & Asfaha, Y. M. (2019). Improving School Work in Challenging Context: Practitioners' Views following a Participatory Action Research Project from Eritrea. *Nordic Journal of Comparative and International Education*, *3*(2), 72–89. https://doi.org/10.7577/njcie.3039

Kemmis, S. (2007). Participatory action research in the public sphere. In P. Ponte & B. Smith (Eds.), *The quality of practitioner research* (pp. 9–27). Sense Publishers.

Kemmis, S., & McTaggart, R. (2005). Participatory action research: Communicative action and the public sphere. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed.) (pp. 559-603). Sage.

Kvernbekk, T. (2005). *Pedagogisk teoridannelse.* Fagbokforlaget.

Kvernbekk, T. (2011). Filosofisk om teori og praksis. *Bedre Skole, (2),* 20–25.

Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues, 2*(4), 34–46. https://doi.org/10.1111/j.1540-4560.1946.tb02295.x

Lillejord, S., Bolstad, A. K., Fjeld, S.-E., Isaksen, L. S., Lund, T., Myhr, L. A., & Ohm, H. M. (2021). *En skole for vår tid: Sluttrapport fra ekspertgruppen for skolebidrag.* https://www.regjeringen.no/contentassets/0f38964bb67f4259b74967911799bdac/en-skole-for-var-tid_v5.pdf

Nicolini, D. (2009). *Zooming In and Out: Studying Practices by Switching Theoretical Lenses and Trailing Connections.* SAGE.

McNiff, J. (2011). What is Action Research? In J. Whitehead (Ed.), *All you need to know about action research* (2nd ed.) (pp. 7–17). Sage.

Mausethagen, S., Prøitz, T. S., Fekjær, S. B., Stenersen, C. R., & Finnanger, T. S. (2021). «*En fot i begge leire hadde vært ypperlig.» En studie av offentlig ph.d. i utdanningsfeltet.* Oslo Met/USN. https://www.utdanningsforbundet.no/globalassets/var-politikk/publikasjoner/eksterne-rapporter/en_fot_i_begge_leire-offentlig_phd_oslomet_usn_2021.pdf

Mills, M., Mockler, N., Stacey, M., & Taylor, B. (2021). 'The village and the world': research with, for and by teachers in an age of data. *Teaching Education, 32*(1), 1–6. https://doi.org/10.1080/10476210.2020.1868141

Ministry of Education (2017). *Core curriculum – values and principles for primary and secondary education*. https://www.regjeringen.no/en/dokumenter/verdier-og-prinsipper-for-grunnopplaringen---overordnet-del-av-lareplanverket/id2570003/

Noffke, S. E., & Somekh, B. (2009). *Action research: Methodology, context, and practice* (2nd ed.). Sage.

Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company. How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press.

Norwegian Research Council (2023a). *Ofentlig sekttor-ph.d.* https://www.forskningsradet.no/sok-om-finansiering/midler-fra-forskningsradet/offentlig-sektor-phd/

Norwegian Research Council (2023b). *Innovasjonsprosjekt i offentlig sektor. https://www.forskningsradet.no/sok-om-finansiering/hvem-kan-soke-om-finansiering/offentlig-sektor/innovasjonsprosjekter-i-offentlig-sektor/*

Postholm, M. B., & Smith, K. (2017). Praksisrettet forskning og formative intervensjonsforskning: forskning for utvikling av praksisfeltet og vitenskapelig kunnskap. I: S. Gjøtterud, H. Hiim, D. Husebø, L. H. Jensen, T. H. Steen-Olsen, & E. Stjernestrøm (red.), *Aksjonsforskning i Norge: teoretisk og empirisk mangfold. Cappelen Damm Akademisk* (s. 71-94). https://doi.org/10.23865/noasp.17

Reason, P., & Bradbury. H. (2008). *The SAGE Handbook of Action Research, ParticipativeInquiry and Practice* (2nd ed.) SAGE.

Retningslinjer for tilskuddsordning for lokal kompetanseutvikling i barnehage og grunnopplæring (2021). *Retningslinjer for tilskuddsordning for lokal kompetanseutvikling i barnehage og grunnopplæring* (FOR-2020-12-22-3201). Lovdata. https://lovdata.no/dokument/LTI/forskrift/2020-12-22-3201

Robinson, V. (2011). *Student-Centered Leadership.* (1. Aufl., Vol. 15). Jossey-Bass.

Rutten, L. (2021). Toward a theory of action for practitioner inquiry as professional development in preservice teacher education. *Teaching and Teacher Education, 97*. https://doi.org/10.1016/j.tate.2020.103194

Sachs, J. (2016). Teacher professionalism: why are we still talking about it? *Teachers and Teaching, Theory and Practice, 22*(4), 413–425. https://doi.org/10.1080/13540602.2015.1082732

Shirley, D., & Hargreaves, A. (2021). *Five paths of student engagement: blazing the trail to learning and success*. Solution Tree Press.

Stenhouse, L. (1981). What counts as research? *British Journal of Educational Studies*, *29*(2), 103–114. https://doi.org/10.1080/00071005.1981.9973589

Stringer, E. T. (2014). *Action research* (4th ed.). Sage.

Støren, K. (2022). Lokalt læreplanarbeid med fagfornyelsen. *Nordisk tidsskrift for utdanning og praksis*, *16*(1), 40–58. https://doi.org/10.23865/up.v16.3070

Støren, K. (2023). En didaktisk refleksjonsmodell for lokalt læreplanarbeid. Erfaringer og virkninger. *Norsk pedagogisk tidsskrift, 107*(4), 334-346. https://doi.org/10.18261/npt.107.4.5

Ulvik, M., Riese, H., & Roness, D., (2022). *Å forske på egen praksis. Aksjonsforskning og andre tilnærminger til profesjonell utvikling i utdanningsfeltet.* Fagbokforlaget.

Utdanningsdirektoratet (2021). *Dybdelæring.* https://www.udir.no/laring-og-trivsel/dybdelaring/