EIJA KIMONEN, RAIMO NEVALAINEN, & LA TEFY SCHOEN

9. ACTIVE LEARNING FOR EDUCATIONAL CHANGE

Finnish Students and Teachers as Active Learners

FOUNDATIONS OF ACTIVE LEARNING

Core Assumptions

Active learning refers to an approach to education built on a pragmatic philosophy of the nature of the learning process. The active learning approach is comprised of a set of loosely connected guiding concepts about teaching and learning. The central unifying notion is based on the idea that thought processes are developed and concepts are constructed as a result of human activity and interaction. Thus, the aim of active learning is to provide students with a series of experiences that facilitate cognitive growth. The genesis of active learning can be traced to a fusion of a branch of applied psychology known as social cognitive constructivism with concepts espoused by the twentieth century educational philosopher John Dewey.

Implementation of the active learning approach calls for a creative synthesis of constructivist and pragmatic principles, resulting in learning processes that are substantively different than classrooms organized around the more traditional behaviorist principles. The underlying philosophical assumptions upon which a classroom, school, program, or system is built define the desired outcomes of education, as well as multiple aspects of operations and processes. Table 1 contrasts some of the core assumptions about learning of constructivism and behaviorism, two competing paradigms in education and learning theory.

Origins of Active Learning

Active learning assumptions are derived from a variety of sources in cognitive psychology, learning theory, and educational philosophy. The loosely linked set of beliefs is closely associated with social cognitive constructivism, but it also carries

E. Kimonen & R. Nevalainen (Eds.), Reforming Teaching and Teacher Education: Bright Prospects for Active Schools, 225–252.

Table 1. Core Assumptions about Learning in Constructivism and Behaviorism

Aspect	Constructivist Assumption	Behaviorist Assumption
Nature of the learning process	Learning occurs when new concepts are explored and related to prior knowledge. Discussion, manipulation, and trial and error are integral to learning.	Learning occurs when knowledge and processes are shared with an individual and the individual studies and practices the material until achieving the ability to execute it correctly independently.
Goal for learning activities	Building progressively complex thinking and problem-solving ability	Mastery of prescribed content
Role of the learner	Active engagement in interactions with others and the environment in order to build concepts and skills	Passive and compliant recipient of information to be learned through practice and study
Role of the teacher	Planning activities that will help students better understand and apply new concepts and skills	Sharing and explaining of information, assigning independent practice, and assessing mastery
Role of the parents and community	Integrated into student learning activities to a large extent	Separated from in-school activities, with parents and the community being periodically informed of accomplishments

strong remnants of pragmatic approaches advocated by American philosopher John Dewey (1859–1952) and later by proponents of authentic learning and reflective practice.

John Dewey

Dewey was an American social philosopher whose writings on education were very influential in the early part of the twentieth century. He focused on the pragmatic or practical aspects of schooling, which he viewed as essential to developing a better society. In 1899 he released *School and Society,* which expressed his views on curricula, teaching, and schools as organizations. Subsequent books on education included *Schools of To-Morrow* (1915) and *Democracy and Education* (1916). These are not Dewey's only writings on education, but they collectively express the central elements of his philosophy of education, which were reiterated in such works as, "My Pedagogic Creed" (1897), *The Child and the Curriculum* (1902), and *Moral Principles in Education* (1909) (Maxcy, 2002, pp. xxi–xxii). Dewey's ideas about education were widely and hotly debated because they expressed a sharp departure from the scientific rationalism (e.g., behaviorism) that dominated traditional approaches to education at the time.

Dewey espoused a child-centered, rather than a curriculum-centered (or teacher-centered) approach to education. A laboratory school was established at the University of Chicago, and it was tasked with implementing some of these core concepts. This ushered in the progressive school movement in America. This movement had as its primary aim to produce democratic citizens that were socially minded and better prepared to function in an industrial age culture. Progressive schools sprung up everywhere in the United States in the early 1900s. However, even Dewey himself criticized much of what he saw going on in the name of progressive education. Dewey, a true pragmatist, expressed in *Experience and Education* (1938) that many had taken his ideas out of context or implemented some in the extreme to the exclusion of other important factors (Maxcy, 2002, p. xxii). The popularity of progressive education diminished surprisingly rapidly soon after the end of the Second World War.

Remnants of Dewey's influence on active learning can be found in the following beliefs: Firstly, students need to do something with knowledge in order to truly learn it. Secondly, the content of the curriculum should incorporate aspects that empower students to function as productive members of society. Thirdly, learning should be child centered rather than curriculum centered, and it should not focus on cognition to the exclusion of physical and affective domains (Garrison, 1998, p. 43). Dewey felt that schools should be democratic to the extent that students should have some say in what they were supposed to learn and how they were supposed to learn it to insure that content would be relevant to the lives of the learners (Schoen, 2008, pp. 33–34).

Authentic Learning

Authentic learning is a concept that has evolved around Dewey's principle of relevance of content (Schoen, 2008, p. 35). Current ideas of active learning also include notions that the content of the curriculum, learning processes, and products of learning should have value and merit beyond the walls of the classroom. Authentic instruction and evaluation methods are believed to have a positive impact on student motivation and engagement. Thus achievement is higher because students view their school work as more meaningful. Newmann and associates conducted a five-year study funded by the U.S. Department of Education in which they concluded that reform efforts fail when inadequate attention is paid to the intellectual quality of teacher and student activities in the school (Newmann et al., 1996, pp. 286–301). They defined intellectually challenging activities as "authentic learning activities" performed by students and have merit in the real world, mirroring similar activities to those performed by adult professionals in that field.

Reflective Professional Practice

The foundations for the conditions necessary to sustain a professionally stimulating work environment characterized by continuous intellectual growth and refined practice were outlined in Schön's book, *The Reflective Practitioner: How Professionals Think in Action* (1986). This framework is not specific to the field of education. Nevertheless the fundamental principle of routinely reflecting on the effectiveness of professional practices and continuously evolving the manner in which we deliver services, based on collaboration, professional knowledge, and observation of results, has firmly taken hold in education. Professional reflection is widely supported by proponents of active learning because this approach is conducive to establishing and maintaining a learning environment that is specific to the learners' needs. A child-centered active learning program requires a large amount of professional judgement and flexibility, since the notion that "one size fits all" is widely rejected by proponents of active learning. Maintaining a school culture that values continual learning and encourages teachers to practice professional reflection can be an integral part of an effective active learning program.

Social Cognitive Constructivism

Cognitive constructivism is a branch of psychology concerned with the development of thought processes in humans. Numerous influences have contributed to the development of cognitive constructivism, prominent among the cognitive constructivists having been the work of Piaget on developmental stages and learning through action (Piaget, 1952; Piaget & Garcia, 1986; Wadsworth, 1996). Piaget's work was pivotal because it focused on the thought processes required of learners when engaged in various activities and thus tied learning to doing (Berk, 1997, p. 244; Schoen, 2008, p. 28).

Other important research contributing to the cognitive constructivist theory includes the work of Bloom on the complexity of thought processes, the work of Bruner on the role of schemas in learning, and Perry's insights on the importance of fluid grouping with post adolescent learners. All of these early cognitive constructivists helped shift the focus of educators onto the process of thinking. This emphasis on the importance of the manner in which the individual interacts with the environment in the development of thinking skills contrasts sharply with the assumptions and focus of educators holding a behaviorist orientation with its related assumptions (ibid., pp. 26–32).

However, the most influential voice amongst the cognitive constructivists in the development of current active learning approaches was Soviet psychologist, Lev Vygotsky (1896–1934). Vygotsky demonstrated that children can achieve a great deal more when their initial independent efforts are followed by opportunities to receive feedback from or to work alongside a more experienced learner. This learner can scaffold and model effective strategies, which the less mature learner then

internalizes and is able to utilize in subsequent independent activities of the same sort. In his work concerning the zone of proximal development, Vygotsky asserted that higher mental functioning first emerges in collaboration with others, before it exists in the individual.

Vygotsky (1978) stated that "human learning presupposes a specific social nature by which children grow into the intellectual life of those around them" (p. 88). Vygotsky's writings have important implications for instructional planning, social interaction in the classroom, monitoring of learning processes, and overall evaluation.

Components of an Active Learning Environment

Since active learning is based on a different set of core assumptions about learning, it follows that active learning environments operate differently than traditional schools built on behaviorist assumptions. This section will outline some of the areas in which active learning programs may exhibit a departure from more traditional approaches to education. Some of these distinguishing features are easily observed, such as the activities of the teacher and the students in the classroom. Others may escape the attention of the casual outside observer, but are extremely important from an operational standpoint. These include adjustments to instructional planning processes, the way in-school time is used, and adaption of the curriculum. It is important that educational entities wishing to adopt active learning take these considerations into account because they are needed to maintain fidelity to the approach.

A Philosophical Approach versus a Packaged Curriculum

Active learning refers to a flexible way of delivering schooling that adheres to core constructivist and pragmatic principles. The specific curriculum, methods, materials, processes, and procedures will vary across contexts. There may or may not be a pre-planned text to follow or fully developed materials for all aspects of the curriculum. This means that there will necessarily be a great deal of variation in the implementation of active learning approaches across school sites. However, it is important to note that while active learning classrooms may look and function differently from one another, there are common threads that are similar in active learning environments across settings.

Student In-Class Activities

One of the hallmarks of active learning, and the one from which the name is derived, is that students primarily learn by being actively engaged in interactions with their environment. By engaging in semi-structured activities, students construct new and more complex ways of thinking. This constructivist approach to learning contrasts with more traditional behaviorist approaches where students are passive recipients

of information. Consequently, active learning classes may appear louder and have a greater degree of student movement. This does not mean the classroom is more chaotic. It is a reflection of beliefs about how students learn.

Constructivists believe that interaction and manipulation are integral to thought development. Therefore, it is common in active learning environments to see students out of their seats moving around and talking. Interactive activities are intentionally designed to help students explore and utilize concepts. This method of learning can be traced back to Dewey, who encouraged "learning by doing" as a means of engaging the affective and physical domains, as well as the cognitive. He believed that education should "involve the body, its actions and passions" (Garrison, 1998, p. 60). Such a child-centered approach would motivate students to learn. Many of Dewey's writings on education were in opposition to the behaviorism-based schooling of his day, which he accused of delivering a curriculum that was "cold" and "dead." Active learning proponents of today similarly believe that engagement of the learner is central to higher levels of achievement.

Instructional Planning

While exploration and investigation may be natural ways of learning, there is no certainty that students will stumble into discovering the foundational information that they need to know if they are to pursue subjects in greater depth. The learning activities must be structured in a manner that allows students the freedom to interact and investigate, but guides them in definite directions, particularly as concerns younger students. Consequently, the role of the teacher in active learning approaches is also transformed.

Careful planning is required to deliberately involve students in interactive activities such as experimenting, discussing, interviewing, and evaluating. These activities will facilitate cognitive growth in targeted knowledge and skills. Typically, whole-class activities as well as small-group or individual activities are planned, depending on the subject area, educational objectives, and student abilities and needs. Instructional differentiation is frequent in active learning classes, because as pragmatists, contemporary teachers concur with Dewey's teachings according to which the more relevant the learning activities are to the life of the student, the more students will be motivated to learn. This is known as the principle of relevance.

Likewise, there is increased demand on the classroom teacher to actively monitor student activity, provide feedback, and redirect students as needed to both keep students focused and further learning. Effective instructional planning is needed to find ways to meet the needs of students who may be functioning on a variety of levels. This is frequently done through use of peer-coaching, inclusion of resources outside the school, or suggestions for extension or modification of assignments to fit students' interests and ability levels.

Time Adjustments for Planning and Instruction

Instructional planning for active learning classes may require greater time due to the complexity of the plans. This is especially true when teachers differentiate instruction based on student needs, because that integrates an analysis of on-going informal and formal assessments into the instructional planning process. Sometimes preparation can take longer due to the gathering of instructional materials. Allowing for adequate time for instructional planning and preparation is important to any active learning program. Many active learning schools allocate time for teachers to cooperate for the purpose of instructional planning.

Curricular Considerations

From an instructional perspective, teachers and administrators should also take into account that active learning is often more time-consuming than methods that require less student movement and interaction. This means teachers must be very intentional and selective in long-term planning in order to ensure that all the skills and concepts in the curriculum are covered. Constructivists, in general, tend to stress thought processing ability over concept mastery, especially in the information age when information can be quickly accessed. Therefore, from a curricular standpoint, depth of coverage may be valued over breadth. Many constructivists believe that students learn and retain more through participation in complex projects than they do when exposed to numerous discrete micro-lessons. Project-based learning is thus common in active learning classrooms. Curricula used with active learning approaches tend to rely on transference or generalization of mental processes, such as problem-solving skills and concepts, from one context to another. To some extent this can free teachers from cumbersome skills checklists and the instructional fragmentation that can result.

Preparation of Materials for Active Learning Methods

The active learning classroom itself and the materials needed to teach must be adapted to the type of activities planned. The teacher's instructional methods in class shift from traditional actions such as lecturing and assigning follow-up pencil and paper exercises, to moving about and informally observing small groups, and assisting as needed. Room arrangement and furnishings may be adapted to accommodate the greater activity level of students in active learning situations. Additional preparation time may be needed to collect or create the materials for students to use in their learning activities. This could include provision of supplies to facilitate student inquiries or the development of tools, such as rubrics for students to record data used to make decisions, judgements, or evaluations. Additional time may also be needed for routine class procedures such as students accessing or putting away materials.

Teacher In-Class Activities

In active learning programs more of the teacher's in-class time is devoted to facilitating learning. This is necessary when students are engaged in diverse hands-on activities. Students may be at different stages requiring various levels of support; typically less mature learners require greater structuring of learning activities, such as questionnaires, outlines, and guides. A key to successful active learning classes is providing students with consistent individualized feedback to promote their continued learning. Hence, monitoring of classroom activities can be more demanding for teachers than it would be in a traditionally organized class with the students sitting quietly working in unison on the same activity. Many active learning schools take this into consideration and either provide additional supervision or reduced student teacher ratios.

Assessment

Student evaluation in active learning classes is frequently formative and used as a means to guide teacher planning of subsequent learning activities. Students in active learning classes may be actively involved in peer and self-assessment, as part of their growth process, as this promotes self-regulation. It is becoming more common for student learning to be assessed using authentic assessment methods. Authentic assessments are those that judge intellectual accomplishments on the basis of the extent to which they are worthwhile, significant, and meaningful. These include those undertaken by successful adults in the field or subject area (Newmann et al., 1996, p. 23). Thus, student work might be judged against set criteria, or rubrics to rate the quality of project outcomes. Student-led demonstrations, exhibitions, performances, and the like are often seen at the culmination of units of study in active learning classes. Unlike traditional approaches to education, a test score in an active learning program is simply viewed as one of many performance indicators.

Basic Guiding Principles Common to Most Active Learning Approaches

Although considerable variation can be observed in active learning approaches, they also share many features. Active learning environments are typically organized around a number of principles that determines the shape that classroom instruction assumes. These principles can be grouped into major categories that include beliefs about the nature of learning, and the role and work of teachers. Most of the differences between traditional schooling and active learning approaches stem from whether or not the school and the classroom teacher consistently strive to adhere to these guiding principles or to the similar ones derived from pragmatic philosophy and a social cognitive constructivist view of education. The following list exemplifies some of the principles of active learning:

- People learn best when they have a personal connection to the content.
- People understand information best when they can actively manipulate, use, or do something with it.
- Higher levels of learning occur when people use knowledge to discover new information or accomplish something new or novel.
- Learning and motivation are so integrally linked as to be inseparable.
- Learning occurs at the individual level, and many variables impact a student's progress including prior knowledge, motivation, aptitude, and scaffolding.
- Learning processes are inherently social. People learn best when they interact with others during the learning process.
- People learn and retain more when they are involved in hands-on activities during the process of learning information.
- Learning activities that have value beyond school are inherently more motivational than those that do not exist in the world beyond the classroom.
- Mature learners regularly self-monitor progress, reflect on their experiences, and adjust based on outcomes of their learning processes.

The following is a detailed list of the functions inherent in the role of teacher and in the art of teaching from the perspective of active learning:

- The role of the teacher is to facilitate learning; the primary agent in the learning process is the student.
- Evaluation should be thought of as progress along a continuum. The role of the teacher is to routinely provide students with feedback regarding their progress and to recommend strategies to further their learning.
- Development of self-regulation behavior helps students improve their repertoire of meta-cognitive learning skills, so that they can guide their own learning more effectively.
- Effective teachers constantly monitor and guide the student learning process by providing timely structure, scaffolding, and feedback as needed to help students.
- Self-evaluation and teacher-student conferences are frequently implemented to assist learners in self-regulating their learning.
- Learning environments should be stimulating and allow for active manipulation and experimentation.
- The rate of learning will not be the same across learners, despite participation in similar activities. Therefore, the pacing of learning activities should be thought of as flexible rather than fixed across students.
- Authentic learning activities that have meaning in the broader community beyond the classroom are inherently more motivational to students. Planning authentic activities allows students to see and understand the value and significance of the things learned at school.
- Sustained focus on a topic yields the deepest learning. However, the ability to self-discipline and sustain focus is developmental. For this reason teachers should structure learning activities that gradually allow students to increasingly sustain focus on complex problems and projects.

- Reflection plays a crucial role in facilitating sustained focus and refining learning processes to promote continuous learning. Students should be taught to reflect upon the strategies that they employed over the course of their learning and to make note of how they might be improved in the future.
- Since active learning requires a great deal of teacher professional judgement, and trial and error, professional reflection is required for effective teaching, regardless of the formal educational attainment, experience, or age of the teacher.
- Cooperation with like-minded teachers can help stimulate ideas and increase teacher effectiveness.

When most choices about how to implement schooling include beliefs and assumptions similar to these, the school is said to be implementing active learning. While not every approach to active learning involves all of these principles, collectively these principles underlie most of the methods employed in active learning. Some schools or programs emphasize particular principles more than others. The strength of the commitment to active learning among teachers and administrators can be a determining factor in the degree of success which a school or program experiences with the approach. Evidence suggests that when the majority of the faculty does not genuinely buyin to a philosophy, implementation tends to be weak and superficial, with the approach thus possibly not yielding its intended results (Schoen, 2010, p. 264). This highlights the importance of faculties being well trained in core constructivist ideas and active learning philosophy prior to implementation.

The context in which an active learning program is situated can also make a difference because expectations of the parents and community influence decisions educators make on a day-to-day basis. Administrators are well positioned to both support teachers attempting to implement active learning, as well as to educate the parents and school community as to why this approach to education will benefit both students and the community.

Challenges Faced by Active Learning Educators and the Support Needed

The assumptions of active learning are more widely accepted today than ever before. Nevertheless, this approach is still rarely seen in operation with fidelity to its core concepts. Why? The active learning approach places numerous and different demands upon the professional life of the teacher and administrators than more traditional approaches that fall under the general heading of behaviorism. Behaviorist approaches tend to favor standardized curricula and normative instruction. In short, active learning requires a great deal more teacher training, professional judgement, continuous learning, cooperation, reflection, and flexibility. This is not only difficult to achieve collectively at a school site, but remains difficult to maintain over time.

Brooks and Brooks (1999, pp. 18–24) identified numerous challenges teachers face when schools turn from traditional approaches, such as limited professional development opportunities, limited budgets, a culture of traditionalism, and a lack of administrative understanding and/or support for the unique needs of teachers implementing active learning. Murphy and Alexander (2007, pp. 16–18) also pointed out that teachers typically receive little training in the research on psychological dimensions of learners and learning processes. They assert that increased teacher knowledge of learner-centered principles would have important and substantial implications for improved educational practice. Hence, schools implementing active learning face tremendous challenges. Needless to say, these challenges are greatly intensified when an individual teacher decides to independently implement active learning strategies with less than full administrative assistance and support.

Many contemporary voices agree that strong social and administrative support is necessary to establish an effective and lasting culture of active learning at schools (Newmann, Wehlage, & Secada, 1995; Deal & Peterson, 1999; Fullan, 2005; Leithwood, Aitken, & Jantzi, 2006). There are increased demands on school officials to provide teachers with a school culture in which they can reasonably and consistently experience success. Informed and meaningful teacher commitment to the active learning approach is crucial to the change process since without it teachers will face philosophical dualism from within themselves and from their colleagues that will undermine a unified approach. Philosophical dualism can place faculty into competition instead of building a climate of collegial social support. A unified school culture in which the faculty and administration deeply understands and embraces a common core philosophy is much more desirable at any school.

Another pivotal need for sustaining active learning at the school level is the provision of on-going focused teacher and administrator professional development. Current views on this topic emphasize the need for meaningful professional growth, which is facilitated when teachers work in small groups to explore new methods or to reflect and refine processes based on the actual needs of their students. Consequently, prioritizing and facilitating teacher peer-learning and cooperation during school hours by administrative means is recommended as a way to sustain active learning environments at schools and in school systems. A school's expectations concerning discipline should promote focused interaction between students on expectations, as well as disciplinary policies and practices in an active learning program. Such an agenda should emphasize student self-regulation.

Finally, teacher supervision and evaluation methods must be built on core active learning assumptions, rather than on traditional behaviorist approaches. Administrators of active learning programs should be knowledgeable of the approach and encourage teacher activities known to support planning and execution of active learning classrooms. Effective administration and facilitation of active learning might include looking at the relevance of teacher professional learning to instructional processes, considering processes for teacher planning of student learning, and reflecting in real time on the relationship between instructional activities and student

outcomes. With adequate teacher support, active learning holds much promise for reaching more students and helping them to achieve their potential.

This chapter will next examine how students and teachers are involved in active learning at a small rural school. The aim is to provide an overall outline of the models of action and practices observed for students and teachers during an educational change.

BASIC FEATURES OF ACTIVE LEARNING IN THE FINNISH CASE-STUDY SCHOOL

The central features of current curriculum reforms in many countries intend to emphasize a school culture with personal control of the learning process and a general flexibility and capability of acting on each other in the functioning of the school. How can these principles be transformed into models of action and teaching practices? Does school culture really change? In future years the schools will probably acquire increasing diversity. Curriculum development will constantly require new knowledge regarding successful models of action and practices in the schools. The successful development of schools will require qualitative and contextual information, this to be collated using means such as school-based case studies (see, e.g., Ginsburg, 2009; Kimonen & Nevalainen, 2005; Korpinen, 2010b).

The following case study will examine active learning in the context of curriculum change at Suvila School, a small rural school in Central Finland with twenty-five students in grades one through six. Data were collected in the form of tape-recorded interviews, observation, and document analysis during six day-long visits to the school and the village community. Interviews were carried out with the two classroom teachers in the school, the five students, the four parents, and the chairperson of the school board. The research data were analyzed using qualitative methods introduced by Glaser and Strauss (for a grounded theory, see Glaser & Strauss,1967; Strauss, 1987).

The Organization of Goals and Activities

All systematic teaching and study is founded on a conception of the nature of both learning and the learning situation. This conception is constructed from components including an interpretation of human knowledge and mental processes, societal traditions and norms, and the expectations set by society for teaching (von Wright, 1993, p. 1). Paradigmatic changes in the conception of learning can shape national educational policy and in this way may also be reflected in the practices used in individual schools. A transformation of national educational policy can facilitate the autonomous developmental work of schools.

Suvila School began the process of change from a traditional school culture to one more progressive in the late 1980s. This reform of the instructional goals and practices of the school was promoted by new, constructivist conceptions of

knowledge and learning that gained currency in Finland at about the same time. According to these conceptions, knowledge is constantly changing, with personal experience and structuring being required to comprehend it. Halinen (2008) wrote that this new approach to the curriculum also gave more freedom to the school. The basis of this thinking was that the national curricular goals could be realized in school-based goals within the curricula of individual schools. Teachers were given the responsibility to decide how they would attain these goals (pp. 224–225). As a teacher at Suvila explained:

> We've been making this change, bit by bit, the whole time. We've not made any sudden changes. One of the most important changes was that I broke the 45-minute teaching system and built larger systems... First came the construction of project units. At first, the units were shorter, a week or two... Then I extended the periods to make activity-oriented learning possible, and so that we could deal with things in more detail ... students were given time for their own project work. The final product is the matter I've tried to deepen all the time. This activity-oriented learning revealed that the Finnish school practice does not make this system possible. That's when we gave up this school day that is tied to a strict number of hours.

The transformation of the instructional goals and practices at Suvila School was promoted at an individual level by the in-service training acquired by the head teacher of the school. This particular teacher then became interested in educational ideas, especially those presented by John Dewey. On the micro-level, the change was accelerated by educational discussions with a peripatetic special teacher at the school, the wife of the head teacher, and the other teacher of the school. Korpinen (2010d) reported that many professional teachers have experienced that they need the support of parents and the school's other interest groups in their work. This is of particular importance when teachers are setting new educational goals (pp. 187, 197). Of the meso and exo-level factors supporting the thinking of the teachers at Suvila, the most significant was the renovation of the school, which took place instead of its threatened closure. In the planning of the renovation, the teachers were able to reflect on new educational ideas. In addition, the majority of the parents and members of the community had a positive attitude toward the pedagogical changes in the school.

The head teacher's educational goals and action principles, which emphasize students' freedom of choice during the learning process, were clearly reflected in the practices of Suvila School. During our fieldwork the students were being introduced to the topic of communication. The aim was to cooperatively compile a video commercial and a bulletin. The students were allowed to set their own objectives for activities and to observe their achievements in the cooperation phase of the learning process that arose from the project work described here. While working, the students had an active role characterized by goal-oriented, self-assessment activity that was directed by metacognition in the individual (for elements in constructivist classrooms, see Gagnon & Collay, 2001, p. 102). The teacher decided what the students had to study during the week, but the student groups themselves had the main responsibility for the manner in which they achieved the specific goal.

The work of a teacher in a small school is inherently broadly based. For the head teacher at Suvila, the challenges and problems arising from the miscellaneous activities of the school's everyday life, as well as his own interest in education, formed the basis for his continued motivation to learn. Furthermore, acting as an adult educator was central in the development of his own approach to learning and in the transformation of the instructional practices of the school. Correspondingly, the teacher's commitment to the development of the school and his success in practical educational situations motivated him to shift the emphasis of his own work to student activeness. During our fieldwork the teacher's activeness was evident mainly in the orientation and evaluation phases of the learning process that arose from the project work. In the course of the cooperative work phase he guided and encouraged the students (for professional development, see, e.g., Keiny, 1994).

Cooperation between the members of the school community and the representatives of the school's interest groups was evident in the activities of the school. The students practiced cooperative learning in small groups composed of learners of different ages. The strength of these small groups consisted in their naturalness. During the cooperation phase special emphasis was placed on independent initiative, sense of responsibility, and cooperativeness (for cooperative learning effects, see Arends & Kilcher, 2010, p. 310). The most problematic elements resulting from the activity of the heterogeneous small groups were the poverty of cooperative skills and information processing skills. The level of concentration exhibited by the students also varied according to age (for problems in active learning, see, e.g., Simons, 1997). Cooperation between the teachers was flexible as well as open. The teachers had planned the school activities together at the beginning of the term. The school board and the parents also participated in the planning of school work.

The Processes of Work and Learning

The process of change at Suvila School proceeded inductively in phases by means of the experiences that the teachers gained in practice, and through discussions that they had concerning their work. During the first phase of the change, the teachers adopted topic units lasting from one to two weeks. During the second phase the teachers increasingly stressed activity-oriented learning in their teaching. During the third phase the teachers extended the duration of the school day. The teachers at Suvila intended to continue developing their teaching practices. The teachers also wanted to develop themselves, their teaching, and their teaching materials.

During our fieldwork the learning process resulting from the project work consisted of orientation, cooperation, and evaluation phases. The teacher's role in the learning process was developmental, as he was seeking to develop his students as learners. The teacher's essential responsibilities in the orientation phase included providing students with motivation and instruction. During the cooperation phase he actively gave advice and patiently guided the activity of the small groups. During the

evaluation phase the teacher examined the outcomes with the students, and later he also wrote feedback concerning their outcomes and cooperative skills.

The project work carried out in small groups offered the students the opportunity to actively interact with each other and to solve the problems that had emerged from working together. The most problematic aspects of the group work were the lack of negotiation and conciliation skills, and the passivity of the youngest group members, especially in the planning of the work. Problems were also common in the processing of information. The students selected, grouped, classified, and interpreted information inadequately (for problems in active learning, see Simons, 1997). They were also satisfied with fairly routine solutions. It seems that the simultaneous mastery of the social and cognitive goals set for small group work is a demanding challenge for students in the active learning process of project work.

If teachers are to acquire new information for the construction of models of thinking and action, they need new knowledge (see, e.g., Hargreaves & Fullan, 2012, p. 89). The head teacher at Suvila School participated in courses organized by the university Continuing Education Center and by the National Board of Education and has acted as an educator in teacher in-service training. He found inspiration for his school work in educational books, journals, and other literature. He also accessed information through discussions with other teachers, students' parents, and members of the school board. In his own words:

> I've recently found many relevant points in literature, for example, in Steinbeck's *Cannery Row*. It had a fitting description of a person who has gone through our present school system... The National Board of Education functions so far away, after all. It's very hard to make generalizations and give directions from there that would have an effect on everyday school life. I can't get much from those materials. I read the *Finnish Journal of Education*. The *Teacher Journal* I read whenever there happens to be something worth reading.

The teacher has naturally gained a considerable amount of experience-based knowledge through his long professional experience. In his own teaching the teacher usually utilizes the opportunities provided by the immediate environment of the school (for learning environments, see Kilpeläinen, 2010, pp. 57–58). He also continuously seeks to direct his students in accessing information from various sources both indoors and outdoors.

Utilizing and Assessing the Processes and Outcomes of Work and Learning

In Finland schools have developed as an institution that, in many respects, is separated from other spheres of social life. Consequently the utilization of the school outcomes for purposes other than learning has generally been uncommon. However, the small rural school has traditionally been involved in the life of the village community (see, e.g., Korpinen, 2010c; Nevalainen & Kimonen, 2013). The products of the

students at Suvila are utilized to some extent in the activities of the school and the surrounding community. The teacher has also acted as an agent of change mainly by offering presentations to other teachers from the municipality and from elsewhere in the province. As an implementer of a school-based curriculum, he has provided them with an account of his own experiences and observations. Furthermore, the school has been open to such teachers and university students who have desired to become acquainted with cooperative project work in combined grades.

The evaluation practices of Suvila School mainly follow the evaluation principles outlined in the new Finnish curriculum (for evaluation procedures, see Niemi, 2012, pp. 27–28). The assessment of the learning process and outcomes is continuous within the school. During the evaluation phase of the learning process, special attention was paid to areas in which students were successful. Nevertheless, the achievement of social objectives was not discussed, instead, the teacher gave a written assessment of the cooperation skills displayed by each student in their personal study-books. The students also evaluated their own learning activities and results in their study-books, but they were not instructed to carry out their own assessment of the group work. Nor did they consciously assess one another's products or cooperation processes.

The teachers at Suvila evaluated the functioning of the school annually, together with parents and the members of the school board. According to the teacher, the new work and learning methods that activate students have given rise to many positive characteristics in students' work including increased initiative and a growing sense of responsibility. The students have learned to appreciate project work as an important part of their education. The theoretical basis of the teacher's work, which emphasizes a global and historical mode of thinking while also acknowledges student abilities and interests, reflects an internalized overall view of holistic education and constructivist learning. According to the teacher, the school as a functional system is in a state of constant development. As a result of this transformation, the teacher faces continuous demands for critical reflection and the renewal of his own principles and practices of action. As he expressed it:

> My own philosophy of education was formed a long time ago. I've lacked the means and the resources to put it into practice... This system is never ready, and will never be ready, thus we must think about it all the time... we could utilize the environment even more in learning. Learning should be natural, we should examine the environment and issues, we should ask other people who are knowledgeable, and not always just the teacher. We should learn to benefit from different channels of learning. One channel could be the utilization of computer technology. Information technology will continue to be an important developmental target.

Active Learning and the Process of Change in the School

The teacher's learning process and the development of the school are closely related. Transformation of the traditional school context requires teachers to reflect critically

on their own principles and practices of action and to transform them, in other words, to create a new school context. From a teacher's point of view, innovations in working and the management of change involve a comprehensive learning process, where the prevailing school culture is initially internalized, and then through externalization, transformed.

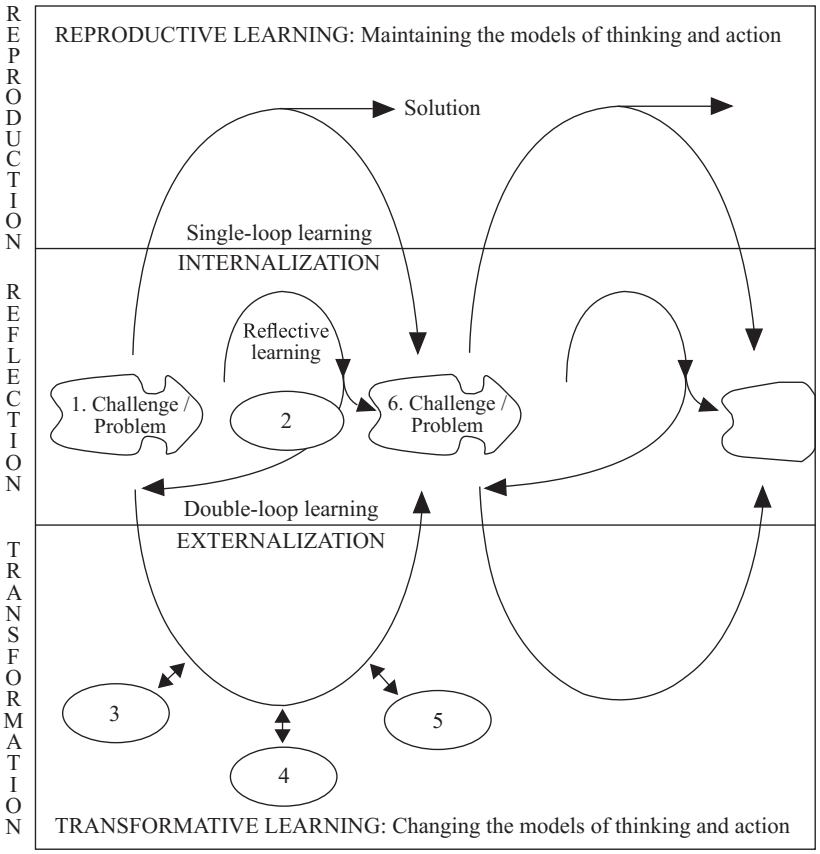
For the teachers at the Suvila School, the learning process was typical of the traditional school culture of the 1980s and was essentially reproductive. Thus, the teachers reacted to changes in the internal and external setting of action mainly by identifying defects and correcting them. In this way the teachers preserved the models of thinking and action sustained by the school, these having been based on a behaviorist conception of learning and emphasizing its external control. Accordingly, such single-loop learning aims at the preservation of prevailing school practices and routines (see Argyris, 1995, p. 8; Argyris & Schön, 1996, p. 20).

By contrast, a modern school culture based on progressive pedagogics following the constructivist conception of learning, requires transformative learning. If the context of the school is to be changed, teachers need new models of thinking and action. Consequently, a change in the basis of action becomes a double-loop learning process for them. One aspect of transformative learning is reflective learning based on deliberation and discussion (see ibid., p. 21; Argyris, 1995, pp. 8–9).

The following section will examine in more detail the transformative learning process of the teacher in the changing school culture. It attempts to outline comprehensively the interrelationship between reproductive, reflective, and transformative learning, and the way they proceed in phases during the active learning process of the teacher. Special attention is directed toward the internalization and externalization of school culture. Figure 1 depicts the active learning process of the teacher during the process of school change.

Facing Challenges Through Problem-Based Work and Learning

Learning and knowledge are always linked to a context in which knowledge is first learned and then used. The context of a school, its practices of action, and the school culture largely determine what is perceived as a problem, what is seen as a method, and what is understood as an acceptable solution (von Wright, 1993, p. 18). The process of change at Suvila School proceeded inductively in phases making use of the teacher's practical experiences and the discussions arising from them. The aspiration to discard the fragmented teaching practices that encouraged passive learning, replacing them with a holistic and activity-oriented school culture, created the basis for both the teacher's problem-oriented work as well as a learning process that has lasted for several years (see Figure 1). The contradictions between the prevailing practices and new challenges motivated the teacher to plan the comprehensive process of change at the school. Gradually, new models of thinking were also reflected in the practices introduced at Suvila. These practices were based primarily on the pragmatist conception of people, according to which the learner



1. Facing challenges: Problem-based work and learning
2. Analyzing practices
3. Defining new practices
4. Constructing new models for thinking and action
5. Producing new practices
6. Facing new challenges: Problem-based work and learning

Figure 1. The Teacher's Active Learning during the Process of School Change

is regarded as an active-minded and inquiring individual engaged in a continuous process of problem solving.

Analyzing Current Practices

People become competent in various lines of work and in different fields by gradually internalizing already existing knowledge and procedures. A developmental

cycle of expert activity begins with an almost exclusive emphasis on internalization (Engeström, 1992, pp. 15–17). The teachers at Suvila School had internalized the behaviorist models of thinking and action that were prevalent in the traditional school culture during the course of their teacher training. This internalization process was further enhanced by experiences gained during their teaching careers. Critical reflection and analysis of problems that arose from the practices of action nevertheless directed the teachers toward the innovative development of school work and a search for new solutions (see Figure 1).

Defining New Practices

Creative externalization occurs first in the form of discrete individual deviations and innovations. As the disruption and contradictions of an activity become more demanding, internalization increasingly assumes the form of critical self-reflection, and then the process of externalization, a search for novel solutions, increases (Engeström, 1992, pp. 15–17). According to expansive learning theory, the direction of the transformation of learning and practices of action is built around the zone of proximal development. This zone is the area between the established, contradictory mode of action and a qualitatively novel mode of action that offers solutions to the contradictions (Engeström, 1987, pp. 174–175).

The zone of proximal development at Suvila School can be examined on two levels. The lower level of change in instructional practices is determined by the teacher's independent resources in developing the school. The higher level of change is brought about by the amount of positive support encouraging the teacher. Such support is offered by persons closely connected with the functioning of the school, including students, other teachers, parents, and administrators. The zone area that lies between these levels represents the development possibilities of the school. The zone of proximal development for Suvila was expanded by many external factors. The change process was accelerated by the renovation of the school building, in the planning of which the new instructional practices of the school culture were also outlined. The teachers wanted to develop their teaching in a more comprehensive and action-oriented direction. These new models of action, in turn, required the implementation of many changes in the curriculum, in the structure of work and learning, in learning and teaching processes, and in assessment. The new national educational policy provided favorable starting points for these activities (see Figure 1).

Constructing New Models for Thinking and Action

Externalization reaches its peak when a new model for the activity is conceived, designed, and implemented (Engeström, 1992, pp. 15–17). The adoption of new models for thinking and action was essential in the shift away from the traditional learning context at Suvila School. The transformation of the prevailing school culture by means of externalization demanded a process of double-loop learning from the

teacher. This double-loop learning emphasizes the identification and solution of those problems connected with school culture that require transformation of action principles (see Argyris & Schön, 1996, pp. 20–21; Kauppi, 1993, p. 87). The teacher at Suvila sought to acquire new models of thinking and action by studying and also by acting as an educator himself in teacher in-service training (see Figure 1).

Producing New Practices

The first result of the transformative learning process was the adoption by teachers of topic units. This presupposed a transformation of the teaching culture by opting for an activity-oriented approach. The teacher's holistic approach and the emphasis placed on activity-orientation arose from the fact that these aspects were in a dialectical relationship in the teacher's work. The teacher had to understand the large variety of connections between activity-orientation and a comprehensive approach to knowledge in practice, and then include this experiential knowledge in his own model of thinking and action. The combination of holistic education with activity-oriented learning produced new challenges in the school culture. The internalization and externalization of these challenges initiated a new learning process in the continuing shift of the school toward active learning (see Figure 1).

Facing New Challenges

As the new model becomes consolidated, internalization of the way it operates becomes the dominant form of learning and development. In this framework, learning involves designing, implementing, and mastering the next developmental stage of the activity system itself (Engeström, 1992, pp. 15–17). The process of change at a school is a continuum, where answers are sought to questions perceived as significant. At its best, the active learning of the teacher consists of independent solving of the problems arising from the everyday life at the school, and of the active accessing of knowledge and skills for the construction of new models for thinking and action (see Figure 1).

In the future, Suvila School aims to increase the interaction between the school and the environment. This trend creates new challenges for the teachers and students in developing their active learning in the direction of authentic learning. Von Wright (1993) cautioned that activeness does not have an inherent pedagogical value. The essential issue is what is done, and what part this plays in the overall learning process (pp. 12–13).

TOWARD AN ACTIVE SCHOOL

Creating Active Schools

It is quite difficult to change the culture of a school. Sahlberg (1997) stated that it can remain unchanged for decades, despite all attempts at reform. The opposition to reform might be a result of a conflict between the teacher's own beliefs and the new ideas. Reforms limited to curricula or equipment do not necessarily change the teachers' ways of teaching, because such changes require teachers to modify their beliefs, values, expectations, habits, roles, and power structures (pp. 180–181, 184).

Changes in school organization can be categorized as first and second-order changes. First-order or incremental changes are deliberated efforts to enhance the existing school system by overcoming deficiencies in policies and practices. The aim is to improve the efficiency and effectiveness of what is currently being done without disturbing the basic organizational features. Such changes are aimed essentially at improving the core features of the organization. Second-order or fundamental changes seek to alter the essential composition of an organization. They involve the identification of new goals, structures, and roles (Cuban, 1992, pp. 218–219). Changes at schools have hitherto been first-order changes. Second-order changes have, in most cases, failed. The challenge of the twenty-first century is to find second-order changes that will have a fundamental effect on school culture and structures.

Small rural schools have, according to previous research, a unique school culture that differs from that encountered in larger urban schools. The ethos of small schools acts as an insulation against government directives, for which reason the teachers in small schools are more easily able to retain their old value systems than are their colleagues in larger schools. In this way the teaching remains unchanged, despite any national curriculum reform that might be in progress (Vulliamy, Kimonen, Nevalainen, & Webb, 1997, pp. 111–112). The work that the teachers performed on the curriculum at Suvila School encouraged them to think in greater depth about the fundamental ideas underlying the school's functioning. However, the teachers did not have the same need as the teachers in larger schools to plan, manage, and formally assess the way their school functioned. This was the result of collegial decision-making. The Suvila school culture was characterized by a family-like atmosphere, informal relationships between the staff and the students, as well as an absence of rituals (for more on Finnish rural schools, see Korpinen, 2010a). The teachers found being flexible in the school organization and bringing about rapid changes to be easy.

The implementation of the new ideas requires a change in a teacher's ways of thinking and working. These changes need to be reflected in the teaching practices employed (see Hargreaves & Fullan, 2012, pp. 154–163). Carlgren (1999) considered that the gap between the reality of teaching and the expectations directed at the teacher can be seen from a wider perspective as a difference between theory and practice. This might be formulated even more precisely as the difference between a teacher's thinking and his or her actions (p. 49). For example at Suvila School the curriculum work influenced the teachers' views of knowledge, learning, and education in a more

progressive direction. It may well be observed that a teacher's internalized educational theory and its practical applications were not inconsistent with each other. The complex process of change was also confronted with obstacles. As far as the parents were concerned, the process of change at Suvila was accompanied by some parents' doubts regarding progressive educational ideas. These parents were even willing to return to the traditional school culture (for obstacles, see, e.g., Niemi, 2002, p. 774).

Major differences characterize the process of change at different schools. A process of change proceeding linearly in rational and systematic fashion represents the fidelity perspective. Sometimes the process of change may be described as eclectic. This is when the teachers choose the parts of the reform that they wish to implement, being guided by their own practical ethics. In such cases the teachers do not actually change the bases of the subjective theory that guides them. During the process of curricular reform at Suvila School, there had been changes of a radical kind in the models of thinking and action followed by the teachers. These changes may be classified as representing change in accordance with the enactment perspective (for these perspectives, see Snyder, Bolin, & Zumwalt, 1992, p. 402). The main features of the history of innovative attempts at Suvila are as follows:

- The process of change from a traditional school culture to a more progressive one started at the end of the 1980s.
- The process of change at the school proceeded inductively, in phases, by means of the experiences that the teachers gained in their working practice and through discussions about them.
- During the first phase of the change, the teachers introduced study units.
- During the second phase, the teachers wanted to develop a more activity-oriented form of teaching.
- During the third phase, the teachers extended the school day.

The process of change in the culture of Suvila is aptly described by the concepts "reculture," "retime," and "restructure" as presented by Fullan (1998, p. 226). He argued that we need to change schools, since at present they are not organizations for learning:

> We need especially to 'reculture', and 'retime' as well as 'restructure' schools. Restructuring is commonplace and all it does is alter the timetable or formal roles. Reculturing as I have argued in several recent writings transforms the habits, skills and practices of educators and others towards a greater professional community which focuses on what students are learning and what actions should be taken to improve the situation. Retiming tackles the question of how time can be used more resourcefully for both teachers and students. Reculturing and retiming should drive restructuring because we already know that they make a huge difference on learning, although they are very difficult to change.

Educational reform, with its complexity, dynamism, and conflicts, is an unending process of change (Fullan, 1993). Nias, Southworth, and Campbell (1992, pp. 236–237) identified the following four sets of conditions that facilitated whole-school educational change:

1. appropriate institutional values, specifically learning, interdependence, and teamwork, the open expression of professional differences, mutual consideration and support, as well as a willingness to compromise;
2. presence of organizational structures, especially for professional interaction, communication, joint decision, and policy making;
3. resources, especially teacher commitment, time, people, and materials; and
4. leadership, both formal and informal.

The curriculum work is a team effort of the teachers. The transformation of the instructional goals and practices at Suvila School was promoted on the individual level by the in-service training acquired by the head teacher. In setting new educational goals, teachers were supported by the school's interest groups. Among the school-level factors facilitating the head teacher's thinking, most significant was the fact that the school had been renovated rather than closed. In addition, the majority of the parents and members of the community had a positive attitude regarding the pedagogical changes at the school. The following four main factors promoting educational change at Suvila are:

1. Teacher (teacher's in-service training and personal interest in professional development; the challenges and problems arising from the everyday activity of the school; acting as an adult educator);
2. School (the school's tendency for rich innovation; management, teachers' cooperation skills, collegiality, trust, interaction, and open communication; the renovation of the school instead of its closure);
3. Community (support from the students' parents); and
4. Society (a reform of national educational policy; a transformation of the concepts of knowledge and learning).

If more fundamental changes are to occur in practice teachers must first undergo professional development to cultivate new attitudes congruent with changes advocated. Such a perspective views educational change as a process of growth for teachers and students – a change in thinking and practice. The nature of teacher professionalism in Finland is predicated on teacher autonomy, a commitment to enabling students to become active independent learners, engagement in lifelong learning, and cooperation with the various educational stakeholders. These attributes have been advocated as the most fitting for professionals in the post-modern era. The intention is to empower teachers and enable them to influence the direction and development of educational reform (Webb et al., 2004, pp. 87, 101).

The implementation of changes in the school system involves the teacher in an active learning process. The teachers at Suvila School have obtained ideas from in-service training, teachers at other schools, parents, the students themselves, and from professional publications. In particular, the significance of in-service training has been crucial because it has motivated the teachers' planning work (for professional development, see Hopkins, 2007, p. 87). The in-service training sessions have offered the teachers the possibility to sketch new ways of thinking for their own teaching. Moreover, sharing experiences with other teachers has been

important. However, in-service training for teachers in small schools has been inadequate because the training topics have been planned primarily to meet the needs of large schools. The features of teacher professional development at Suvila are listed here:

- The teachers have actively participated in in-service training.
- The teachers have participated in courses organized by the Continuing Education Center and the National Board of Education.
- The head teacher has found inspiration for his school work in educational books, journals, and other literature, as well as through discussions with other teachers, students' parents, and members of the school board.
- The head teacher has also been an agent of change by acting as an educator in teacher in-service training.

If the process of educational change is to succeed the teacher must have many pedagogical and professional competences. The teacher's professional development amounts to encountering change, living with it, and influencing it. Changes require the teacher to be sensitive and ready to anticipate the future. An important teacher quality is being able to perceive societal changes together with their colleagues and to determine which changes could be relevant to their professional development (MoE, 2001, p. 2).

Toward Active Learning

The central point of departure of the volume *Education and Society in Comparative Context* (2015) is that education is closely related to the totality of culture and human activity. It suggests changing traditional, reproductive learning into actively problem-oriented, holistic, and life-centered learning (Kimonen, 2015, 261). This section will briefly examine the process of active learning. The interpretative process here utilizes the socialization process of outdoor-oriented education presented by Kimonen (2015, pp. 252, 254–255).

The philosophical basis of active learning is the idea that reality is built on the interaction between humans and the environment. Knowledge evolves through experience generated by active effort. Knowledge is constantly being revised by new theory that better explains the experience and thus serves as a means for reorganizing experience and evaluating activity (Dewey, 1916/1950, pp. 89–90, 188–189). Therefore, thinking is a way of analyzing and articulating the experience arising from activity, which, in turn, contributes to the process of adapting to the surrounding world (see Figure 2).

According to this view, reality is best articulated through doing and first-hand experiences, in which case intentional activity can also generate material results when it is combined with the performance of work. In teaching situations based on active learning, the individual's relationship with reality consists of three categories. The first category involves feelings related to an authentic human experience and its properties while participating in doing and working within different learning

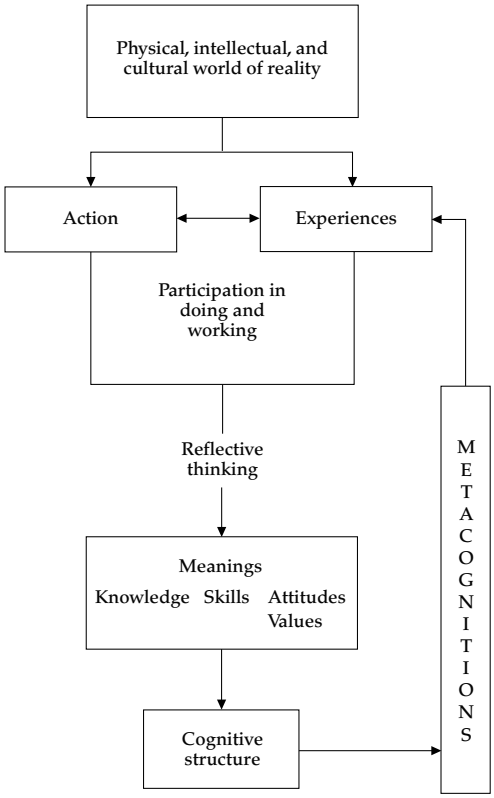


Figure 2. Action, Thinking, and Knowledge as Constituents Contributing to the Process of Active Learning, as Adapted from Kimonen's (2015, p. 254) Interpretation of the Socialization Process of Outdoor-Oriented Education

environments. The second category is connected with the first one, and consists mainly of conscious observation as the individual participates in doing and working within and outside the school. The third category combines doing and working with thinking, with the experiences thus obtained in different learning environments gaining a conceptual meaning.

The central purpose of the ideal active learning process is to articulate the essence of reality, specifically its physical, intellectual, and cultural worlds. Figure 2 summarizes the essential constituents of active learning process – action, thinking, and knowledge – and their interrelationships. The experience of articulating reality is connected with goal-oriented doing and working, which, through problem-solving situations, creates knowledge, skills, attitudes, and values. Such reflective thinking is then used to interpret and evaluate the meanings of the concepts that are linked to human cognitive structure. The process in question concurrently facilitates the

development of metacognition in the individual, thus contributing to the further organization of reality during a new experience.

Functional human beings and their social world are constructed in dialectic interaction, the components of which are internalization, externalization, and the objectivated social world. Society is a human product because of externalization. Objectivation facilitates the process by which society becomes human objective reality. Through internalization, the human being also becomes a social product (Berger, 1967, pp. 3–4; Berger & Luckmann, 1967, p. 61). In this process education and society are intimately linked since the basic functions of active learning are to articulate and internalize the essence of reality as well as to affect and transform it.

REFERENCES

Arends, R. I., & Kilcher, A. (2010). *Teaching for Student Learning: Becoming an accomplished teacher*. New York, NY: Routledge.

Argyris, C. (1995). *On Organizational Learning*. Cambridge, MA: Blackwell.

Argyris, C., & Schön, D. A. (1996). *Organizational Learning II: Theory, method, and practice*. Reading, MA: Addison-Wesley.

Berger, P. L. (1967). *The Sacred Canopy: Elements of a sociological theory of religion.* Garden City, NY: Doubleday.

Berger, P. L., & Luckmann, T. (1967). *The Social Construction of Reality: A treatise in the sociology of knowledge.* Garden City, NY: Doubleday.

Berk, L. E. (1997). *Child Development* (2nd ed.). Boston, MA: Allyn and Bacon.

Brooks, M. G., & Brooks, J. G. (1999). The courage to be constructivist. *Educational Leadership*, *57*(3), 18–24.

Carlgren, I. (1999). Professionalism and teachers as designers. *Journal of Curriculum Studies*, *31*(1), 43–56.

Cuban, L. (1992). Curriculum stability and change. In P. W. Jackson (Ed.), *Handbook of Research on Curriculum*. New York, NY: Macmillan, 216–247.

Deal, T., & Peterson, K. (1999). *Shaping School Culture: The heart of leadership*. San Francisco, CA: Jossey-Bass.

Dewey, J. (1950). *Democracy and Education: An introduction to the philosophy of education*. New York, NY: Macmillan. (First published 1916)

Engeström, Y. (1987). *Learning by Expanding*. Helsinki, Finland: Orienta.

Engeström, Y. (1992). *Interactive Expertise: Studies in distributed working intelligence* (Research Bulletin, No. 83). Helsinki, Finland: Department of Education, University of Helsinki.

Fullan, M. (1993). *Change Forces: Probing the depths of educational reform*. London, UK: Falmer Press.

Fullan, M. (1998). The meaning of educational change: A quarter of a century of learning. In A. Hargreaves, A. Liberman, M. Fullan, & D. Hopkins (Eds.), *International Handbook of Educational Change* (Pt. 1, pp. 214–228). Dordrecht, The Netherlands: Kluwer.

Fullan, M. (2005). *Leadership and Sustainability:Systems thinkers in action*. Thousand Oaks, CA: Corwin Press.

Gagnon, G. W., & Collay, M. (2001). *Designing for Learning: Six elements in constructivist classrooms*. Thousand Oaks, CA: Corwin Press.

Garrison, J. (1998). Toward a pragmatic social constructivism. In M. Larochelle, N. Bednarz, & J. Garrison (Eds.), *Constructivism and Education* (pp. 43–62). Cambridge, UK: Cambridge University Press.

Ginsburg, M. (2009). *Active-Learning Pedagogies as a Reform Initiative: Synthesis of case studies*. [Washington, DC]: USAID & American Institutes for Research.

Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for qualitative research*. London, UK: Weidenfeld and Nicolson.

Halinen, I. (2008). Basic education curriculum system in Finland. In J. Hautamäki, E. Harjunen, A. Hautamäki, T. Karjalainen, S. Kupiainen, S. Laaksonen, ... R. Jakku-Sihvonen, *PISA06 Finland: Analyses, reflections and explanations* (pp. 223–226). Helsinki, Finland: Ministry of Education.

Hargreaves, A., & Fullan, M. (2012). *Professional Capital: Transforming teaching in every school*. New York, NY: Teachers College Press, & Toronto, Canada: Ontario Principals' Council.

Hopkins, D. (2007). *Every School a Great School: Realizing the potential of system leadership*. Maidenhead, UK: Open University Press.

Kauppi, A. (1993). Mistä nousee oppimisen mieli? Kontekstuaalisen oppimiskäsityksen perusteita [Foundations of the contextual learning concept]. In A. Kajanto (Ed.), *Aikuisten oppimisen uudet muodot: Kohti aktiivista oppimista* (pp. 51–109). Helsinki, Finland: Kirjastopalvelu. (In Finnish)

Keiny, S. (1994). Constructivism and teachers' professional development. *Teaching and Teacher Education*, *10*(2), 157–167.

Kilpeläinen, R. (2010). *Kyläkoulut Suomessa: Maaseudun pienet koulut opettajien kuvaamina oppimis- ja kasvuympäristöinä* [Village schools in Finland. Small rural schools as learning and growing environments as described by teachers]. Oulu, Finland: Oulun yliopisto. (In Finnish)

Kimonen, E. (2015). *Education and Society: The essence of outdoor-oriented education in the United States and India*. Rotterdam, The Netherlands: Sense.

Kimonen, E., & Nevalainen, R. (2005). Active learning in the process of educational change. *Teaching and Teacher Education*, *21*(6), 623–635.

Korpinen, E. (2010a). Kauan eläköön kyläkoulu! [Long live the village school]. In E. Korpinen (Ed.), *Eläköön kyläkoulu!* (pp. 278–282). Jyväskylä, Finland: PS-kustannus. (In Finnish)

Korpinen, E. (2010b). Koulu palvelukeskuksena – neljä tarinaa kylistä ja niiden kouluista [The school as a service center]. In E. Korpinen (Ed.), *Eläköön kyläkoulu!* (pp. 233–270). Jyväskylä, Finland: PS-kustannus. (In Finnish)

Korpinen, E. (2010c). Kyläkoulu yhteiskunnan rakennemuutoksessa [The village school in the midst of structural change in society]. In E. Korpinen (Ed.), *Eläköön kyläkoulu!* (pp. 14–28). Jyväskylä, Finland: PS-kustannus. (In Finnish)

Korpinen, E. (2010d). Vanhemmat kyläkoulun voimavarana [Parents as a source of strength for village schools]. In E. Korpinen (Ed.), *Eläköön kyläkoulu!* (pp. 182–200). Jyväskylä, Finland: PS-kustannus. (In Finnish)

Leithwood, K., Aitken, R., & Jantzi, D. (2006). *Making Schools Smarter: Leading with evidence* (3rd ed.). Thousand Oaks, CA: Corwin Press.

Maxcy, S. J. (2002). *John Dewey and American Education*. Bristol, UK: Thoemmes Press.

MoE. (2001). *Teacher Education Development Programme*. Helsinki, Finland: Ministry of Education.

Murphy, K., & Alexander, P. A. (2007). Contextualizing learner-centered principles for teachers and teaching. In W. Hawley & D. Rollie (Eds.), *The Keys to Effective Schools: Educational reform as continuous improvement* (pp. 13–32). Thousand Oaks, CA: Corwin Press & The National Education Association.

Nevalainen, R., & Kimonen, E. (2013). Professional orientations and competences of teachers in a school and community context: Social participation in the process of community education. In E. Kimonen & R. Nevalainen (Eds.), *Transforming Teachers' Work Globally: In search of a better way for schools and their communities* (pp. 81–108). Rotterdam, The Netherlands: Sense.

Newmann, F. M., Doane, K. B., Gamoran, A., King, M. B., Kruse, S. D., Seashore-Louis, K., ... Weinstein, M. G. (1996). *Authentic Achievement: Restructuring schools for intellectual quality*. San Francisco, CA: Jossey-Bass.

Newmann, F., Wehlage, G., & Secada, W. (1995). *A Guide to Authentic Instruction and Assessment: Vision, standards and scoring*. Madison, WI: Center for Education Research.

Nias, J., Southworth, G., & Campbell, P. (1992). *Whole School Curriculum Development in the Primary School*. London, UK: Falmer Press.

Niemi, H. (2002). Active learning – A cultural change needed in teacher education and schools. *Teaching and Teacher Education*, *18*(7), 763–780.

Niemi, H. (2012). The societal factors contributing to education and schooling in Finland. In H. Niemi, A. Toom, & A. Kallioniemi (Eds.), *Miracle of Education: The principles and practices of teaching and learning in Finnish schools* (pp. 19–38). Rotterdam, The Netherlands: Sense.

Piaget, J. (1952). *The Origin of Intelligence in Children*. New York, NY: Basic.

Piaget, J., & Garcia, R. (1986). *Toward a Logic of Meanings*. Geneva, Switzerland: Editions Murionde.

Sahlberg, P. (1997). *Opettajana koulun muutoksessa* [Being a teacher in a changing school]. Porvoo, Finland: WSOY. (In Finnish)

Schoen, L. (2008). Constructing high quality learning environments for twenty-first century learners: A sociocultural constructionist perspective. In D. M. McInerney & A. D. Liem (Eds.), *Teaching and Learning: International best practice* (pp. 25–50) (Research on Sociocultural Influences on Motivation and Learning, Vol. 8). Charlotte, NC: Information Age.

Schoen, L. (2010). *Conceptualizing, Describing and Contrasting School Cultures: A comparative case study of school improvement processes*. Saarbrücken, Germany: VDM.

Simons, P. R. J. (1997). Definitions and theories of active learning. In D. Stern & G. L. Huber (Eds.), *Active Learning for Students and Teachers: Reports from eight countries* (pp. 19–39). Frankfurt am Main, Germany: Peter Lang.

Snyder, J., Bolin, F., & Zumwalt, K. (1992). Curriculum implementation. In P. W. Jackson (Ed.), *Handbook of Research on Curriculum* (pp. 402–435). New York, NY: Macmillan.

Strauss, A. L. (1987). *Qualitative Analysis for Social Scientists*. Cambridge, UK: Cambridge University Press.

Vulliamy, G., Kimonen, E., Nevalainen, R., & Webb, R. (1997). Teacher identity and curriculum change: A comparative case-study analysis of small schools in England and Finland. *Comparative Education*, *33*(1), 97–115.

Vygotsky, L. S. (1978). *Mind in Society: The development of higher psychological processes*. M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.). (A. R. Luria, M. Lopez-Morillas, & M. Cole [with J. V. Wertsch], Trans.). Cambridge, MA: Harvard University Press. (Original work in Russia 1930–1934)

Wadsworth, B. (1996). *Piaget's Theory of Cognitive and Affective Development* (2nd ed.). New York, NY: Longman.

Webb, R., Vulliamy, G., Hämäläinen, S., Sarja, A., Kimonen, E., & Nevalainen, R. (2004). A comparative analysis of primary teacher professionalism in England and Finland. *Comparative Education*, *40*(1), 83–107.

von Wright, J. (1993). *Oppimiskäsitysten historiaa ja pedagogisia seurauksia* [Conceptions of learning. Historical backgroud and instructional implications]. Helsinki, Finland: Opetushallitus. (In Finnish)