

Activity Theory and the Transformation of Pedagogic Practice

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Today, work and other societal practices are experiencing accelerating paradigm shifts from mass-production-based systems toward new systems based on networking between organizations, collaboration, and partnerships. This shift requires new paradigms in the fields of education, learning, and development. As human activity quickly changes to networking and partnering among diverse cultural organizations, we need to ask ourselves whether schools and other actors are equipped to prepare people for such practices. We also need to think about what kind of learning can generate critical and creative agency among learners. Such agency will help people shape their own lives and future. In this paper, I discuss the potential offered by cultural-historical activity theory for analyzing and redesigning new, expanded pedagogic practices in schools. Putting the third generation of activity theory to pedagogic practice, I propose that new forms of expansive learning that are transforming pedagogic activity structures in schools can occur in advanced networks of learning that transcend institutional boundaries of schools, turning them into societal agents of change. To concretize the notion of expansive learning as one new form of pedagogy in which boundary-crossing networks of learning and the changing agent role of schools emerge, I will illustrate and analyze a children's after-school activity project called New School: a multi-activity collaboration in which a university, an elementary school, families, and expert groups and community organizations outside the school cooperate to create advanced learning networks. Based on the New School project, a new landscape of expansive learning in the field of pedagogic practices that attempts to create a hybrid activity system will be discussed, along with its sustainability. I will argue that through such a collaborative endeavor, participants can be motivated to engage in shaping and sustaining collaborative learning and their own development.

1 Introduction

With human activity quickly changing to networking and partnering among diverse cultural organizations, a new generation of learning theory in educational settings needs to focus on net-

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worked learning that goes beyond such ‘encapsulated’ learning as traditional learning in schools that exists within institutional boundaries, creating a new object-oriented interagency of social networks. The central question in this paper is, first, how can networked learning between schools and the outside world advance beyond ‘encapsulated’ learning? Secondly, what kind of learning can generate critical and creative agency among learners? Such agency will help people shape their own lives and future.

Cultural-historical activity theory is a theoretical framework intended to analyze and redesign human activity based on inquiries into new concepts and models for human activity. It is a methodology for intervention to facilitate and support innovative collaborative learning by practitioners (see Daniels, 2001; Engeström, 1987, 2005; Engeström, Lompscher & Rückriem, 2005; Yamazumi, 2006a; Yamazumi, Engeström & Daniels, 2005). Together with recent work on situated learning (Lave & Wenger, 1991), cultural psychology (Cole, 1996), communities of practice (Wenger, McDermott & Snyder, 2002), learning communities (Sato, 2005), and knowledge-building communities (Oshima, 2005), it is a new paradigm that analyzes and redesigns how human learning occurs in the interactions between individuals and collaborations within communities. In particular, activity theory focuses on the learning and development that emerge in the institutionalized contexts of practical activities culturally and historically mediated within a society. These new paradigms in the fields of learning and development have become increasingly influential in educational studies in Japan over the past two decades.

In this paper, I will discuss the creation of new forms of pedagogic practices in schools based on *expansive learning* (Engeström, 1987, 2005; Yamazumi, 2005) as collaborative self-organization ‘from below’ that breaks away from ‘encapsulated’ school learning to embrace advanced networks of learning. I will also address the ‘change agent’ role of the school (cf. Engeström, 1996b) and the transformation of traditional pedagogic practices in schools.

In the following sections, I will start by discussing a perspective of activity theory in educational research, concentrating on the new generation that analyzes and redesigns new forms of human activity, learning, and development. This will lead to proposals of advanced forms of networked learning in and for relationships of interaction between multiple activity systems. Second, I will discuss an emergent, pedagogic theory of expansive learning that transforms traditional pedagogic practices in schools by examining two fundamentally and logically contrasting models of pedagogy: ‘competence’ and ‘performance’ (Bernstein, 1996; Daniels, 2001, 2004). This argument’s most crucial part is that expansive learning in schools must be recognized as a new form of pedagogy that transforms the modality of pedagogic practices from discrete compartmentalized school subjects and the transmission and acquisition of predefined, specialized knowledge and skills into complex, real life situations that cross the boundaries of practice. Third, to concretize the notion of expansive learning as new forms of pedagogy in which boundary-crossing networks of learning and the ‘change agent’ role of the school emerge, I will describe and analyze a children’s after-school activity project called the *New School at the Center for Human Activity Theory, Kansai University*¹ in Osaka, Japan. *New School* is an inter-institutional, collaborative project in which a university, an elementary school, families, and expert groups and community organizations outside the school cooperate to create advanced learning networks. Finally, based on the *New School* project, a new landscape of expansive learning in the field of pedagogic practice that attempts to create a hybrid activity system will be discussed, as well as its sustainability. I will argue that through such a collaborative endeavor, participants were motivated to engage in shaping and sustaining collaborative learning and their own development.

2 Activity Theory as a New Paradigm for Educational Research

Activity Theory as a Theoretical Tool for Making Changes in Pedagogic Practice

Activity theory is one of the newest paradigms that analyzes and redesigns culturally mediated and object-oriented collaborative activities of social practices and their networks. The central thesis of activity theory, initiated by Vygotsky (1978) and the Russian cultural-historical school (Leont'ev, 1978; Luria, 1979), is that “the structure and development of human psychological processes emerge through culturally mediated, historically developing, practical activity” (Cole, 1996: 108). Cole (1996) points out that this cultural-historical analysis of culture in mind must include the social-institutional context of activity.

Engeström (1987), a leading activity theorist, creates a model *activity system* as an entire unit of analysis, while including the individual's *object-oriented mediated action with cultural artifacts*, which also includes social-institutional infrastructures and contexts as interrelationships between components of a collective activity such as *rules, community, and division of labor*. This principle, “the entire activity system is the unit of analysis”, is intended to investigate the system as an “objectively given context” of which individual actions, practices, and experiences are a part so that a larger unanalyzed, dichotomized independent variable (the institutional logic of the activity of formal schooling, for example) neither remains to be treated as an immutable given nor barely described at all (Engeström, 1993: 66).

As are other such systemic approaches, activity theory is also strongly characterized as a historical and developmental theory. It must be involved in making changes in human practices, not just observing and analyzing. In this sense, activity theory should be engaged in the contexts of the local and global history of given social practices. Activity theory, in short, is concerned with the cultural-historical development of activity systems and their social networks.

Activity theory, which is emerging as a new field in research targeting human action, practice, learning, and development, can thus be considered a new theory related to pedagogic practice. The theory dynamically analyzes the historical changes and development of activity systems through the mediation of culture and takes an innovative approach to the creation of new cultures for human activity. It also provides a methodology for specific intervention and support of the changes and development of current given practices – that is, a methodology for endeavors in pedagogic practice. In other words, activity theory can be considered a theoretical tool for making changes and providing real support for human development through formative experiments and social designs for new activity systems.

Toward a Third Generation of Activity Theory

Activity theory provides a powerful framework for analyzing and understanding the social, cultural, and historical formation of human actions and practices. Above all, it deals with actions oriented toward objects and mediated by cultural artifacts such as tools and signs, symbols, ideas, concepts, and technology. An *activity* in activity theory is a form of human life that is linked to and associated with various actions oriented toward an *object* (purpose and motive) in an environment and structured socially, culturally, and historically. In other words, an activity is an integral unit of humans' social lives, and is regarded as a unit of the everyday social actions of humans motivated by an object. This can be referred to as *object-oriented activity* (Leont'ev, 1978).

Engeström (1995, 1996a) discusses the historical development of activity theory based on

the idea of *three generations*.

The first generation is represented by Vygotsky (1978), who showed that the development of this behavior is above all mediated by the creation and use of cultural artifacts. This leads to a way of thinking where human behavior is understood as culturally mediated, historically developing, practical activity.

The second generation started with Leont'ev (1978). The novelty of his 'activity' concept was that it associated activity with a new component of division of labor and cooperation of humans, and showed that activities motivated by purposes and objects are established not in the individual dimension but in a collective dimension. Engeström goes on to develop a systemic model of the understanding of human activity opened up by these two earlier generations, i.e., the understanding of *collective activity* oriented toward objects mediated by cultural artifacts. This is the collective activity system model shown in Figure 1. This is a model of a system of *object-oriented collective activity mediated by artifacts, community, rules, and division of labor*.

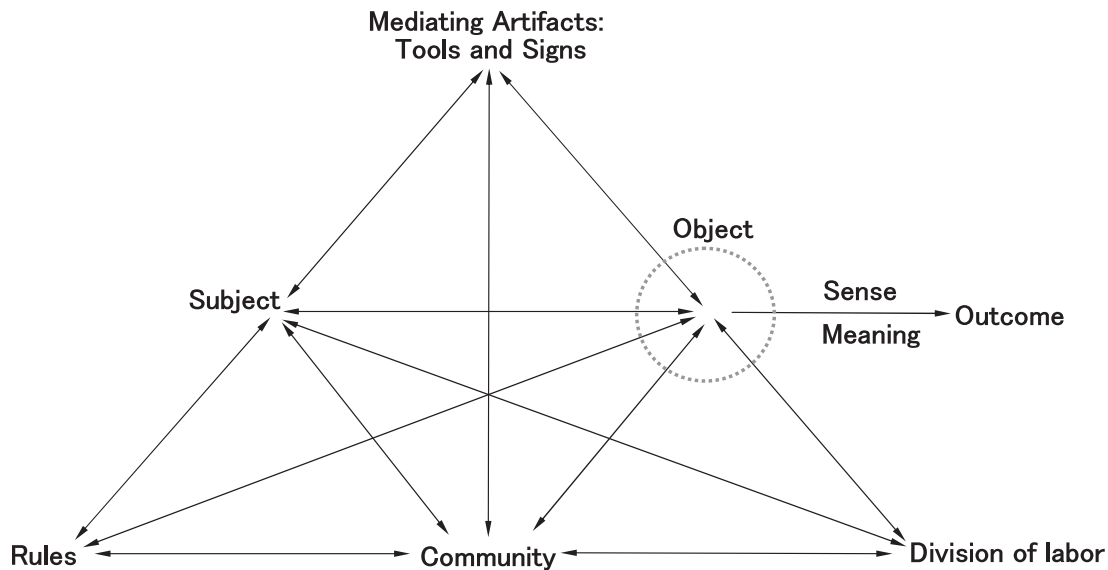


Figure 1: Model of a collective activity system (Engeström, 1987: 78)

This model of a collective activity system clearly shows that human cognition, learning, emotion, and volition are socio-historical processes that occur in the context of a culturally mediated activity system, and that the human mind and consciousness are situated, distributed, and shared in an activity system. That is, human learning occurs through collective activity, and learning involves not only learning within the activity system, but also learning about the activity system.

A current third generation of activity theory aims to exploit and challenge new potentialities of activity theory by expanding on the two previous generations mentioned above. It therefore goes beyond the limits of a single activity system and takes as its unit of analysis multiple different activity systems that mutually interact, promoting empirical intervention research to design networks, dialogues, and collaboration between these systems. Engeström (1996a, 2001) models this new third generation perspective as *interacting activity systems with a partially shared object* as shown in Figure 2.

Two activity systems expand from object 1 to object 2 by means of a 'dialogue'. This ex-

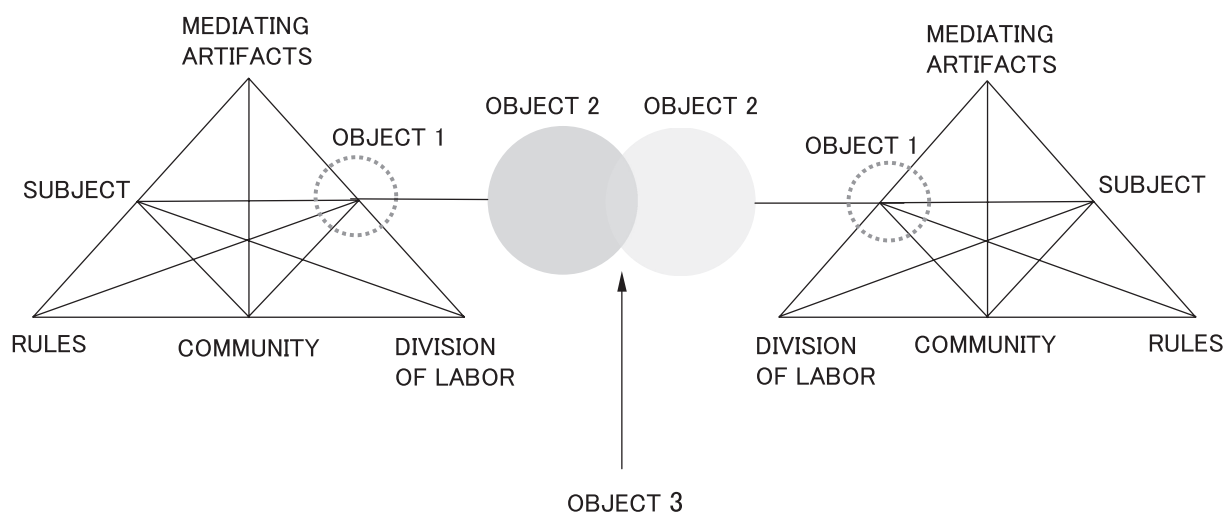


Figure 2: Two interacting activity systems with a partially shared object as minimal model for third generation of activity theory (Engeström, 2001: 136)

pansion approaches both objects and outcome in a partial overlap. In this cross-border object ‘exchange’, a new object 3 appears. This ‘third object’ gives rise to a ‘seed of transformation’. In other words, the newly-appeared ‘third object’ gives rise to a driving force for the transformation of the original activity system by means of feedback to the respective activity systems.

3 Expansive Learning and New Emerging Forms of Pedagogy

What does the Transformation of Pedagogy Mean?

In Japan, as well as in other advanced capitalist countries with neoliberalist educational policies, bureaucratic and managerial processes that change pedagogic practices in schools ‘from above’ have dominated the last decade. The work of teachers has been defined by subject by subject curriculum packages and guidelines, stage-by-stage teaching models, and such technical controls of learning outcomes as standardized tests. The object and motive of school activities has been reduced and reverted to traditional teaching and learning methods. As Hargreaves (1994) states, teachers have been subjected to and subjugated by unskilled labor processes, and current school reform policies threaten the very desire to teach itself.

In their work on the professional development of teachers, Lieberman and Miller clarify that “as a profession, we must refashion the old realities of teaching into new ones if we are to meet demands of the new century” (Lieberman & Miller, 2004: 10-11). They formulate the following three transformative shifts: “*From individualism to professional community*”, “*From teaching at the center to learning at the center*”, and “*From technical and managed work to inquiry and leadership*”. In such a transformation, they explain the second as follows:

When teachers shift their attention from the act of teaching to the process of learning, they corroborate for each other that “one size fits few” (Ohanian, 1999). By looking collaboratively at student work and designing curriculum, assessments, and instructional strategies together, they gain the collective knowledge, confidence, and power to co-construct alternatives to standardized approaches and measures. (Li-

eberman & Miller, 2004, 11)

Pedagogy or *pedagogic practice* is a term with many shades of meaning. Bernstein's sociological definition may suggest the best way to solve the interpretational problem. His definition strengthens the claim that pedagogy is powerfully concerned with social, cultural, historical, and institutional factors that fundamentally drive educational processes. "...[The] notion of pedagogic practice which I shall be using will regard pedagogic practice as a fundamental social context through which cultural reproduction-production takes place" (Bernstein, 1996: 17).

Expanding these ideas, Daniels tries to clarify the central conception of pedagogy, which should be "construed as referring to forms of social practice which shape and form the cognitive, affective and moral development of individuals" (Daniels, 2001: 1). Pedagogic practices are understood here as those that influence the formation of identity as well as learning outcomes as defined in test scores, for example.

In connection with pedagogy's central conception, let us now consider the meaning of transforming fundamental social contexts and/or forms of social practice in schooling. Bernstein astutely points out that it is possible to distinguish two fundamentally and logically contrasting models of pedagogy: a 'competence model' and a 'performance model':

Competence models

Pedagogic discourse issues in the form of projects, themes, ranges of experience, a group base, in which the acquirers apparently have a great measure of control over selection, sequence and pace. Recognition and realization rules for legitimate texts are implicit. The emphasis is upon the realization of competences that acquirers already possesses, or are thought to possess. Differences between acquirers displaces their stratification: classification is weak.

Performance models

Pedagogic discourse here issues in the form of the specialization of subjects, skills, and procedures which are clearly marked with respect to form and function. Recognition and realization rules for legitimate texts are explicit. Acquirers have relatively less control over selection, sequence and pace. Acquirers' texts (performances) are graded, and stratification displaces differences between acquirers. Classifications are strong. (Bernstein, 1996: 58-59)

Using two contrasting models of pedagogy, Daniels analyzes different modalities of schooling:

...[Where] the theory of instruction gives rise to strong classification and strong framing of the pedagogic practice it is expected that there will be a separation of discourses (school subjects), an emphasis upon acquisition of specialized skills, the teacher will be dominant in the formulation of intended learning and the pupils are constrained by the teacher's practice. ...Where the theory of instruction gives rise to weak classification and weak framing of the practice then children will be encouraged to be active in the classroom, to undertake enquiries and perhaps to work in groups at their own pace. (Daniels, 2004: 128-129)

Obviously, the latter modality of pedagogic practice, that is, the competence model, means an integrated, inclusive, and collaborative approach to schooling. A transformation to these forms

of practice could take place by and through changing “*from teaching at the center to learning at the center*”, as Lieberman and Miller (2004) formulate above.

Expansive Learning Transcending the Institutional Boundaries of Schools

Since the 1990s, as the historically transitional age continues to move toward globalization in every field of human activity – even if the activity is physically limited to local areas – *expansive learning* theory has clearly become increasingly valuable for creating new systems of human societal practical activities. Expansive learning theory, which has been debated since Engeström’s (1987) conceptualization, is strongly rooted in Vygotsky’s (1978) *zone of proximal development* (ZPD) and Bateson’s (1972) *three levels of learning* as well as activity theory.

Expansive learning based on an activity-theoretical framework is one of the most influential concepts regarding human collaborative learning activity. Its creativity goes beyond traditional learning theory rooted in individualistic behaviorism. It is learning that creates culturally new patterns of activity that don’t exist yet; it is learning for practitioners to master and then break through the inner contradictions in and between their activity systems; therefore, it is learning used to master their own lives and future. It is also realized in learners’ engagement of something new in a social life-world. Engeström characterizes the object and motive of such expanded learning activities as follows:

The object of learning activity is the societal productive practice, or the social life-world, in its full diversity and complexity. The productive practice...exists in its present dominant form as well as in its historically more advanced and earlier, already surpassed forms. Learning activity makes the interaction of these forms, i.e., the historical development of activity systems, its object. (Engeström, 1987: 125)

Traditional teaching and learning is still keeping “a series of more or less disconnected though systematically repeated learning actions” (Engeström, 1987: 104). At the same time, the culture of teachers’ work in the traditional school retains the strengths of static elements that stress the transmission of predefined content. In the light of much criticism of the traditional culture of school, it is clear that the contributions of such an expansive learning model are extremely important for the transformation of existing pedagogic practices.

The essence of learning activity is production of objectivity, societally new activity structures (including new objects, instruments, etc.), out of actions manifesting the inner contradictions of the preceding from the activity in question. Learning activity is *mastery of expansion from actions to a new activity*. ...[Learning] activity is an *activity-producing activity*. (Engeström, 1987: 124-125)

This object appears to the subject first in the form of discrete tasks, problems and actions. ...Learning activity (a) *analyzes and connects* these discrete elements with their systemic activity contexts, (b) *transforms* them into contradictions demanding creative solution, and (c) *expands and generalizes* them into a qualitatively new activity structure within societal productive practice. (Engeström, 1987: 125)

Thus, expansive learning focuses on the new, expanded object of learning where the problem or the task itself must be created from problematic situations such as the puzzling, troubling, and uncertain, moving beyond information given ‘from above’ and expanding the discrete, inter-

nally contradictory learning actions.

Expansive learning occurs in schools when learning for teachers and children goes beyond a given context of pedagogic structure. In his critical argument of the encapsulation of traditional school learning, Engeström (1996b) advocates a ‘collective of learners’ and ‘advanced networks of learning’. From this point of view, the object of expansive learning in schools is the “expanded structure of learning activity itself” (Engeström, 1996b: 167). Thus, expansive learning can take place in “the creation of networks of learning that transcend the institutional boundaries of the school and turn the school into a collective instrument” (Engeström, 1996b: 168-169).

4 New School Project as an After-school Activity for Children: Creating a New Hybrid Activity System²

In this section I will turn to illustrating and analyzing a children’s after-school activity project called *New School (NS) at the Center for Human Activity Theory, Kansai University* in Osaka, Japan (Yamazumi, 2006b). NS is an inter-institutional, collaborative project among the following partners: a university, a local elementary school, families, and expert groups and community organizations outside the school. These multiple parties cooperate to create productive learning activities and advanced networks of learning. The NS project aims to develop the concept of expansive learning for children whereby actual real life activities are synergistically networked together by modeling productive collaboration among these parties, based on the practice of after-school educational activities. Based on the NS project, this section focuses on new forms of learning that attempt to transform the pedagogic activity of the traditional school. These new forms of learning are conceptualized with the help of the framework of third-generation activity theory and the notion of expansive learning as mentioned above.

Creating a Hybrid Activity System

In the NS project, based on the pilot development of after-school educational activities between a university, a local elementary school, and families in 2005, new activities where elementary school children engaged in a fun, creative learning process on the theme of food (cooking, eating, and agriculture, for example) were carried out at the Center for Human Activity Theory, Kansai University every Wednesday after school in 2006. By exposing children to the community activities and productive practices of producers and distributors such as farmers and fishermen, nutritional science experts, and food-related social organizations like *Slow Food Kobe*, NS activities aims to bridge the gap between the activities of the elementary school and productive practice of everyday life outside the school.

These parties are involved in designing learning activities which are grade-mixed, group- and project-based. The themes of the NS activities are inspired by practices of everyday life. The main themes include cooking and eating, well-being, ecological thinking, and responsibility for the environment and a sustainable future. NS activities aim at developing agentive, critical, and creative learning abilities in the children and university students involved.

By means of inter-institutional collaboration and networking between different activity systems, the NS project attempts to transform the pedagogic activity of traditional school learning and to put project-based learning into practice with four key groups of actors: the elementary school

children, the university students who will become teachers, the research coordinator for the NS practice, and researchers. By invoking a conceptual framework of third-generation activity theory as discussed in the previous sections – i.e., a model with at least two interacting activity systems as shown in Figure 2 – I will try to employ a representation of NS as a new *hybrid activity system* as shown in Figure 3.

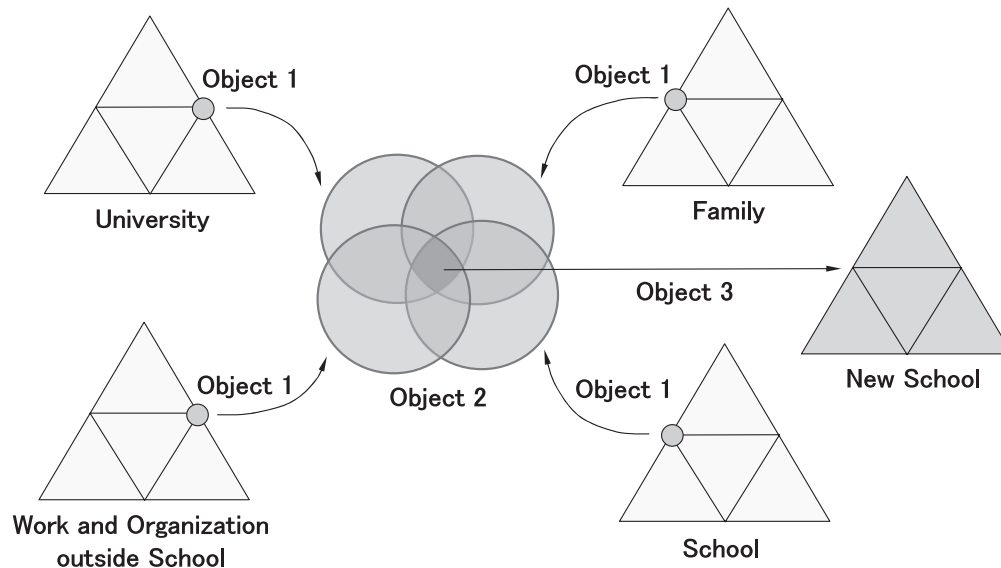


Figure 3: New School as a new hybrid activity system

In NS, the following different actors participate voluntarily:

- **Elementary school students:** Learning collaboratively by means of play and cultural exchanges
- **University students:** Learning and practicing teaching work and education/care programs of children
- **University researchers and research coordinator:** Researching and developing the learning and education/care practice of children
- **School teachers:** Transforming their traditional pedagogic practices into new forms of learning and work
- **Expert groups and community organizations:** Raising awareness of community activities and productive practice, engaging in dialogue and interaction with consumers, and contributing to children's educational activities
- **Families:** Education and care of children inside and outside the school

However, these multiple different actors do not participate as separate individuals. For example, in the concept of fun, creative learning activities in NS, the food-related social organization *Slow Food Kobe* and nutritional science experts contribute to and connect with children's learning activities as part of community activities. Also, the agricultural producers involved have gained experience in farming and organic cultivation and are aiming to advance into new farming practices from concepts such as welfare farming, cultural exchanges between cities and farms, branding of farm products, and promoting the consumption of local produce. In other words, these new

forms of farm produce are aimed at rediscovering and expanding use values in farm produce on the basis of participation by consumers through dialogue and interaction with consumers, and in this respect they lead to and contribute toward children's learning activities.

Thus, in NS, new *mixed activities* are created through broad-ranging overlapping and inter-connection between the after-school *play* activities of elementary school students, the *learning* activities of university students, and the *work* of researchers and practitioners. As Gutiérrez, Baquedano-López, and Tejada (1999) point out, hybridity and diversity here should be understood to include not only racial, ethnic, socioeconomic, and linguistic hybridity and diversity, but also hybridity and diversity in the mediating artifacts (tools and signs), roles, and the activity systems themselves. "Hybridity and diversity, then, are not problematic but rather are viewed as important cultural resources in children's development" (Gutiérrez, Baquedano-López & Tejada, 1999: 287).

In this sense, NS creates a hybrid activity system in which multiple and different activity systems interact and engage together, expanding their own objects and partially sharing a new object. Such a hybrid mixed activity system highlights the important and significant role that schools play as *societal change agents*. This is the idea that the school is involved in some collaborative change efforts, for example community revitalization, cultural production, economic innovation, citizenship activation, etc.

Project-based Learning Activities in a Networked Organization for School Innovation

The development of the NS after-school educational activities enables the creation of new forms of pedagogic practice by means of *boundary zone activity* (see Tuomi-Gröhn, 2005) where the activities of the university, the elementary school, and productive practices of everyday life outside the school can interact and form networks. In other words, it allows the discovery of new forms of school activity in the sense of a networked organization that facilitates the cyclical production of new knowledge and new practices.

NS aims to design children's and university students' *grade-mixed, group- and project-based learning activities* on the curriculum integration and cross-curricular themes such as new kinds of awareness and activity that relate to the creation of cooking and eating, well-being, ecological thinking, and responsibility for the environment and a sustainable future while developing agentive, critical, and creative learning abilities.

The design of children's learning activities by project-based learning has fundamentally different characteristics to those of learning based on systematic teaching. Katz and Chard (2000) have proposed a form of project-based learning activity which they call the 'project approach'. They define the project approach as "the extended in-depth study of a topic" (Katz & Chard, 2000: 175), and state that school curriculum and teaching methods can be broadly classified into two types: 'systematic teaching' and 'project work'.

However, 'systematic teaching' and 'project work' do not feature in the overall composition or coordination of school curriculum. In other words, 'project work' cannot be thought of as covering the entire curriculum. Instead, it is closely interrelated with the systematic subject learning of language (including foreign languages), math, science, and art where literacy can be put into practice (acquiring written culture and a symbolic representation system). Project-based learning is a lateral approach to the curriculum that supports and complements subject learning.

Project-based learning could thus be described as a new form of school learning activity

where groups take part in long-term in-depth investigation projects on topics that are networked with the creation of the real life-world and community activities. This is aimed at the compilation of school curriculum that develop children's creative potential, and is a new design for a learning activity system that aims to encourage the creative use of knowledge and skills. At the same time, project-based learning is intended to allow children to learn in a context with real sense making. Project-based learning should create local communities in the classroom where learning topics are shared and investigated. However, it is important to note that this in no way diminishes the standard of the school curriculum. In other words, project-based learning will thereby make high-level complex science and art content the standard of school curriculum.

NS is aimed at the development and practical application of a new form of learning activity system. In doing so, it raises the important research question of how to create project-based learning and learning activity within the school curriculum. NS is a hybrid *networked organization* (Engeström, 2006) that creates boundary zone activities as shown in Figure 3, and the basic concept of development in NS is from *closed autonomy* to *networked hybridity*. This being the case, the project-based learning and learning activity in NS may be thought of as activities in which new knowledge and new practices are produced while being circulated, mixed, and integrated together in a networked organization.

The introduction of information and communication technologies such as the Internet is resulting in an ever-expanding range of learning for students, teachers, and staff in all kinds of school systems. Learning is no longer something that takes place within the confines of textbooks, and has come to draw on a wide range of different sources of knowledge. At most schools, current social problems and future possibilities form an essential part of the curriculum. Consequently, it is becoming increasingly important for schools to build partnerships with community organizations, businesses, experts groups, and other relevant actors outside the school, and to allow them to contribute to the curriculum and lessons. In these partnerships, the teachers and students get involved with themes and problems they are interested in by investigating and intervening in them outside of the classroom. Conversely, the outside partners might come to the school and engage in discussions with the students and teachers. In this way, the partnerships between the school and the outside community build reciprocal relationships where knowledge and practices that are learnt together are created and shared.

For the cyclical production of knowledge and practices in a networked organization, which is a goal pursued by NS, the acquisition of knowledge by children can be implemented according to a strategy whereby their academic life is enriched by their social life built and acquired through their participation in productive collaboration with relevant actors outside classrooms. Daniels (2001: 118-119) cites the opinion of Moll and Greenberg (1990) with regard to this strategy, which is that schools should draw on the social and cognitive contributions that parents and other community members can make to children's development.

5 Concluding Remarks

When NS develops new forms of learning activity and puts them into practice, this constitutes the creation of learning activities by the cyclical production of knowledge and practices in a networked organization. It goes without saying that such an activity system could be called a sustainable context that facilitates and supports collaborative learning between participants. NS also

aims to shape and sustain a context that can create potentialities for children to become actively engaged in their own development. This is because learning plays a leading role in the formation of one's own life and future.

The NS project is an empirical intervention research to create emerging multiple and distributed learning among diverse participants including teachers as key agents and even children and their parents for school innovation. To exploit intervention as a collective endeavor is to shape creative and critical design agency among all the parties involved for school change. The multiple and different actors involved in and affected by NS are engaged in shaping and sustaining expansive learning to redesign and implement new forms of learning activity whereby real life activities are synergistically networked through collaboration among parties. By crossing the boundaries of each activity system involved in NS, such expansive learning led to a collaborative self-organization in which participants learn school innovation together and become collaborative change agents of their own lives and futures in the school.

As a long-term trend, teaching and learning in traditional schools are divided into two segregative structures, in activity-theoretical terms, two discrete, compartmentalized activity systems – the teacher's activity of transmitting predefined, specialized knowledge and skills and the student's activity of enduring "a series of more or less disconnected though systematically repeated learning actions" (Engeström, 1987: 104) as daily assignments. To break through such segregation, teachers and their students must collaboratively construct an expanded, shared object of a joint learning activity. Learning activity in the activity-theoretical perspective on tool-mediated and object-oriented collective activity produces students who are subjects not of separate learning actions but of a whole system of learning activity.

The analysis of the NS project leads to the preliminary finding that the collaborative change effort was characterized by three sets of intensive contradictions between the activity systems involved: 1) contradictions between the institutional logics of school activities and the NS activities; 2) contradictions between the activities of teachers, student teachers, and the children; 3) contradictions between the activities of the elementary school and productive practice of everyday life outside the school.

The NS project contributes to empirical intervention research aimed at creating distributed learning among diverse participants. This project also tests the activity-theoretical concept of expansive learning as a particularly promising conceptual tool for analyzing new practices of collaboration between school and the outside community. With the help of this concept, it is possible to identify crucial tensions and contradictions that obstruct but also energize collaborative efforts to transform school learning.

As an after-school activity, how can NS be engaged in school innovation itself? This will be the future direction of this study. Of course, future stories that network between NS, the school, and the teachers must be told as well. They surely would depart from the point at which participants in such boundary zone activities could learn to network by themselves. In any event, it is reasonable to recognize NS as a collaborative challenge in which boundary zone activities expansively transform the activity of school learning and participants are invited and motivated to embrace the challenges of their own activities.

Notes

- 1 *The Center for Human Activity Theory (CHAT)* was established at Kansai University in Osaka, Japan in April 2005 to focus on educational research and development based on cultural-historical activity theory and its interventionist approach to human education, learning, and development. From 2005-2009, CHAT will be involved in a joint research

project entitled “International Joint Research in Innovative Learning and Education System Development: The Creation of Human Activity Theory”, which was awarded by the Ministry of Education, Culture, Sports, Science and Technology as an “Academic Frontier” Project.

See *Center for Human Activity Theory* website: <http://www.chat.kansai-u.ac.jp>

- 2 This section is an expanded and revised version of an earlier form that appeared in Yamazumi (2006b).

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