Education as a Collaborative Intervention : Engaging Learners and Building a Community of Agency in Disaster Prevention Learning

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Abstract: The Great Hanshin-Awaji Earthquake (also known as the Kobe Earthquake), with a magnitude of 7.3, struck on January 17, 1995, killing 6,434 people. This article aims to analyze and characterize an intervention in a hybrid earthquake-related disaster prevention education program in Kobe City, Japan, within the framework of cultural-historical activity theory and its methodology for formative interventions. From the viewpoint of the methodology for formative interventions to foster participants' expansive learning and agency, educational activities should be reconceptualized as dialogically negotiated activities in which various agents could produce new collaborative interventions, while transforming their activity systems. Furthermore, the article illuminates this kind of reconceptualization for education as a series of collaborative interventions. To do so, it takes up an activity-theoretical formative intervention pertaining to the implementation of earthquake-related disaster prevention learning and considers it as a new hybrid learning activity. This activity is carried out by a nonprofit organization in collaboration with the youth, residents, and various other agents in the local community. The analysis of such hybrid disaster prevention learning focuses on a collaborative self-intervention in which the participants were able to form a new type of agency to shed the passive role of the victim and thus create a dialogically negotiated site where they can discuss future town planning to prevent or reduce disaster damage.

Keywords: Disaster prevention education and learning, Kobe Earthquake, agency, collaborative intervention, hybrid learning activity, knotworking, child-/youth-driven disaster research, activity theory

Introduction

In the age of humanitarian and ecological crises, it has become increasingly necessary to ensure that educational research and practice are actively involved in collective initiatives to reconstruct common good in an equitable and sustainable way. This study aims to analyze and characterize an intervention in a hybrid earthquake-related disaster prevention education program in Kobe City, Japan, within the framework of *cultural-historical activity theory*. Disaster prevention education can generate a new type of learning activity and increase engagement in activities aimed at building an equitable and sustainable society. In the learning program and practice, an intermediary nonprofit organization has tried to create a *hybrid learning activity* for the community in Kobe City's Shin-Nagata area, one of the regions that suffered serious damage during the Great Hanshin-Awaji Earthquake (also known as the Kobe Earthquake) on January 17, 1995. This activity would enable various participating groups and individuals to share their experiences, stories, and memories of the earthquake victims with young people and other citizens. The goal of the program is to build community support to disseminate disaster-related knowledge and create a new, mutually supportive culture.

Cultural-historical activity theory (Engeström, 1987/2015, 2008, 2016, 2018; Leont'ev, 1978, 1981; Sannino, Daniels, & Gutiérrez, 2009; Sannino & Ellis, 2013, Yamazumi, 2021) studies how people collectively design and transform their own activities, which have been culturally and historically constructed in educational settings, workplaces, and communities. It offers a conceptual framework for analyzing and designing an *object-oriented collective activity system* (i.e., the activity of the *subject* toward the *object* is mediated by *instruments* based on the social infrastructure of *rules*, *community*, and *division of labor*) as the basic unit of analysis for human practices and development. Activity theory also focuses on ideas and tools to transform the activity and expand the agency of the participants (Engeström, 2016; Sannino & Engeström, 2017b; Sannino, Engeström, & Lemos, 2016; Yamazumi, 2009a, 2013, 2021). In activity theory, a new learning theory has been proposed— namely, *expansive learning theory* (Engeström, 1987/2015, 2016), which regards active participation in the collective design and transformation of activities as a learning process for participants themselves.

From the viewpoint of the expansive learning theory, educational activities should be reconceptualized as dialogically negotiated activities in which various agents could produce new collaborative interventions, while transforming their activity systems. This article illuminates this kind of reconceptualization for education as a series of collaborative interventions. To do so, it takes up an activity-theoretical formative intervention related to the implementation of earthquake-related disaster prevention learning and considers it as a new hybrid learning activity. This activity is carried out by a nonprofit

organization in collaboration with the youth, residents, and various other agents in the local community.

In the following section, questions regarding the activity-theoretical methodology of formative interventions are first examined to grasp a new form of educational research, which goes beyond the boundaries of traditional interventions, standardized as those monopolized by the researcher, and thus reduced to a linear causality. In contrast, formative interventions based on activity theory assume that participants will seize the initiative behind the intervention process by gaining and exercising their own agency and thus create their own new agency as a basic principle. Second, it is argued here that the notion of agency could be situated in an alternative conceptual framework as opposed to one based on a sociological dualistic tradition of structure/agent. This discussion permits us to gain a new understanding of the essential characteristics of agency as the most important outcome of expansive learning facilitated in formative interventions. Such a new form of conceptualizing and characterizing agency can break through the fundamental dichotomy between society and the individual, which is deeply rooted in the social sciences. At the same time, it can illuminate the collaborative and transformative nature of agency, thus transcending the boundaries of notions of individualistic and rational subjects with free will, which is the dominant framework of most modern societies. Third, a hybrid learning activity is proposed and analyzed here to address collaborations and engagements with a shared objective in and interactive relationships between multiple activity systems. In particular, the analysis focuses on a collaborative intervention related to disaster prevention learning in Kobe City as an applied case, and considering it from the perspective of the expansive learning process so that the participants are able to form a new type of agency and negotiate a site through dialog at the same time.

The Methodology of Formative Interventions and Facilitating Participants' Collaborative Interventions

As Yrjö Engeström (2000) points out, a lesson we can draw from intervention research is that change and development fail when imported from outside or implemented from above. The perspective of activity theory holds that the process of implementing an intervention must, in turn, facilitate the process of expansive learning. "In expansive learning, learners learn something that is not yet there. In other words, the learners construct a new object and concept for their collective activity, and implement this new object and concept in practice" (Engeström & Sannino, 2010, p. 2). Therefore, practitioners involved in and affected by an expansive learning process take the initiative to reforge the object of their own current work—that is, their practices, goals, and understanding of *why* they do things the way they do. Even more than observation or analysis, intervention needs to consider the

"human potential for agency, for intentional collective and individual actions aimed at transforming the activity" (Engeström, 2006, p. 4). This *agentive layer* focuses on the potential for agents to create intellectual, emotional, and moral judgments on their own, which function as intentional transformative actions.

For example, in the field of schooling, traditional, standard intervention research is based on a linear causality in which policymakers and researchers create a grand design. This design is then applied or modified by teachers, which results in a more positive change for students. In contrast, formative interventions based on activity theory assume that teachers themselves will seize the initiative behind the intervention process by gaining and exercising their own agency, and thus, create their own new agency as a basic principle. Here, the focus is on evoking and sustaining the process of transformation, which is directed and enacted by teachers.

Annalisa Sannino, Engeström, and Monica Lemos (2016) summarize the three key differences of an activity-theoretical formative intervention approach in the context of design-based research in the learning sciences tradition, characterized as linear interventions:

> (a) [F]ormative interventions are based on designs created by the learners; (b) the collective design effort is seen as part of an expansive learning process including participatory analyses and implementation phases; (c) rather than aiming for transferable and scalable solutions, formative interventions aim to create generative solutions that can be developed over lengthy periods of time both in the researched activities and in the research community. (p. 599)

In this manner, activity-theoretical formative interventions attempt to transfer agency to participants and facilitate their expansive learning. As Engeström (2016) points out, if an intervention may be defined simply as "purposeful action by a human agent to create change" (Midgley, 2000, p. 113), it is clear that "the researcher does not have a monopoly over interventions" (Engeström, 2016, p. 220). Many kinds of outside agents can impose various interventions on organized activity systems such as schools. In the process of formative interventions, "the subjects gain agency and take charge of the process" (p. 219). This process is simply the self-education of learners teaching them to create their own interventions.

Using viewpoints such as empirical focus, location of development or change, and agent of intervention, Clay Spinuzzi (2018) offers an interesting distinction between the theories of Lev Vygotsky and Aleksei Leont'ev and contemporary activity theories (Engeström is also one of the representative scholars in contemporary activity theory whom Spinuzzi mentions). Thus, whereas Vygotsky and Leont'ev emphasized transforming *individuals* (via *self*-mastery for Vygotsky or *state* mastery for Leont'ev), contemporary activity

theory approaches emphasize "transforming mediators through dialogic negotiation by collective subjects to produce new collective designs and interventions, consequently reforming adjacent activities" (p. 149). Although individuals transform themselves, according to Vygotsky, and the state transforms individuals, according to Leont'ev, they commonly focus on individuals' capabilities and their development. Unlike these aforementioned theories, contemporary activity theory focuses on individuals' transforming activities, that is, the act of creating activity systems (external physical and symbolic instruments, as well as rules and divisions of labor). Spinuzzi distinguishes these as follows: "In 'The Socialist Alteration of Man,' Vygotsky locates the abilities in the individual…. Engeström, however, locates the abilities in the activity in which the individual is situated" (p. 132). Therefore, formative interventions consider the participants, and not the subject and the state, as agents to produce collaborative interventions to collectively create their new activity system and new agency at the same time.

The researchers' role is thus to facilitate collaborative interventions initiated by the participants themselves, who, in turn, are involved in the ongoing activity. In other words, the core mechanism of formative interventions is to enable participants to gain and exercise agency. In the next section, the ways to conceptualize and characterize a dynamic form of agency for participants in formative interventions are suggested.

The Collaborative and Transformative Nature of Agency

In a standard sociological tradition, agent/agency should be the opposite of structure. This dichotomy between the two is deeply rooted in and parallels the dualism of society and the individual in social sciences. Moreover, in a standard psychological tradition, agent/agency is seen as an individualistic attribute. Namely, in both traditions, agent/agency is fundamentally characterized in terms of an individualistic and rational subject's ability to practice free will in a modern society.

How can we overcome such dichotomies and oppositions between agent and structure or individual and society? The transition from an empirical type of abstraction to a theoretical type of abstraction is probably an important perspective. As Sannino and Engeström (2017a, p. 83) clarify, whereas empirical abstraction is "a classification of superficial features of phenomena," theoretical abstraction refers to "the identification of the genetic origins of phenomena that may externally not be alike at all." Additionally, theoretical abstraction can be characterized as a "germ cell" that is "internally contradictory, a dynamic unity of opposites" (p. 83). By applying this notion to theoretical abstractions, it is possible to dynamically capture the genetic origin required to unify such opposing forces or tendencies in terms of agent versus structure.

Interestingly, Masakazu Tanaka (2005) proposes a new approach to the

theoretical concept of agency, which is mediated by Judith Butler's (1997a, 1997b) alternative conceptualization of agency. Specifically, her approach is based on and also distinguished from theories of subjectivity ("subjected subject") formulated by Louis Althusser and Michel Foucault. In the latter theories, the subject is seen as being subject to society. On the one hand, society is what the individual is subject to; on the other hand, the individual is recognized as the subject by society. Namely, there is reciprocal recognition between the individual and society. Thus, the theories of "subjected subject" can overcome the dichotomy and opposition between individual and society. As Tanaka (2005, p. 4) formulates, "the source of individual subjectivity is society (power, ideology)." He simultaneously identifies an inner contradiction and calls it an "aporia" in such a "subjected subject." It can be expressed as the following question: How can the "subjected subject," which is born through being a subject to something societal, become something new? This is the questioning of the possibility of change and creativity, which Butler's new concept of agency calls for.

Following Tanaka (2005, p. 11), Butler illuminates "the subject as a dynamic agent that has the power of speech" through the subject's own "performativity" in everyday life:

> [T]he subject becomes a talking subject on the condition that some things cannot be talked about and that what is not talked about, that is to say, what is excluded, is the very basis for the creation of the agent…. In the effects of power, there is scope for criticism of the allocation of power and a field of play for a resisting agent. (p. 11)

Thus, this new concept of agent/agency is a theoretical abstraction that dynamically grasps the necessary genetic origin to unify opposing forces or tendencies such as subjection versus resistance. However, Tanaka (2005) radically criticizes Butler's conceptualization of agent/agency, which still remains within the traditional notion of the individual, because the agent in her theory of agency is characterized by solitude—the community is not incorporated into the theory.

> To break with individualism, it is necessary to consider the "social life of agents."
> As in "real estate agent," "travel agent," and "federal agent," the idea of "agent" often includes the sense of "proxy" or "substitute." In the sense of "acting as go-between," the agent, then, acts at sites created by communication networks, so that agency in a broad sense would be equivalent to communicative ability…. So, an agent, rather than being the puppet of others, is a communicating being along with others in a community of communicating beings…. Even when communication takes place on an individualized or one-to-one basis, a mutually negotiated site—

community—is created. Agency is the power that endows such a site,
crates and, moreover, transforms the character of this space. (pp. 11–12).

It is possible to say that agency is necessarily characterized based on its
collaborative and transformative nature to shape collective activity systems.
Using this viewpoint, Tanaka criticizes the framework of legitimate peripheral
participation, which was proposed by Lave and Wenger (1991). He asserts
that the legitimate peripheral participation framework "generally remains
superficial and does not present any theoretical explanation" for "the possi-
bility of change or creativity," that is, how learners change the community
(Tanaka, 2005, p. 13). Engeström (2016, pp. 36–37) contrasts legitimate
peripheral participation with expansive learning, and legitimate peripheral
participation has little to say about the "transformation and creation of
culture" in contrast with expansive learning. Tanaka (2005, p. 13) points out
that the legitimate peripheral participation framework does not theoretically
address the potential for change or creativity because it focuses on "a process
that gives rise to a perfect subject (identity)" or "proceeds smoothly and
harmoniously from peripheral to full participation."

The Historical Changes and Current Phase of Earthquake-Related Disaster Prevention Learning Programs

The Kobe Earthquake struck on January 17, 1995. It had a magnitude of 7.3,
and a total of 6,434 people were killed. The Shin-Nagata area in the
southwest area of Nagata Ward in Kobe City was one of the worst affected
areas. This is also the area where the nonprofit organization Futaba
Community Learning Center (hereafter called the Futaba Center) is located.
Since 2011, the Futaba Center has been conducting an earthquake-related
disaster prevention learning program as a means of passing on the recollec-
tions and stories of the residents of the surrounding disaster areas to the
next generation.

This interactive program combines multiple activities such as simulating
the experience of being at an evacuation center, as well as listening to stories
about the earthquake (see Figures 1 and 2).

The program is designed to prepare participants for future disasters by
helping them to understand, on a personal level, the thoughts, feelings, and
experiences of the earthquake victims. Participation in the program is
offered to

- Elementary, junior, and high school students in Kobe City
- Out-of-school learning groups and students outside of Kobe City
- Staff training groups, college students, and tourists

To identify the major historical changes and current phase of the activity,

FIGURE 1   Evacuation center experience for junior high school students
from outside of Kobe City (courtesy of the Futaba Center)

FIGURE 2   Walking tour of disaster areas for a community organization
from outside of Kobe City (courtesy of the Futaba Center)

the history of a disaster prevention learning program conducted by the Futaba Center is presented in this section. This kind of documentation of an activity's history can make use of important, exemplary problems in the activity that need to be addressed in the intervention, and hypothesizing the location and nature of the contradiction behind the problems. As Engeström emphasizes, from the perspective of activity theory, the concept of contradiction is a theoretical construct central to activity-theoretical intervention research for the following reason: "Contradictions within and between activity systems are key to understanding the sources of trouble as well as the innovative and developmental potentials and transformations of activity" (Engeström, 2008, p. 5). Thus, contradictions are not the same as problems or conflicts within individual subjects but historically accumulated "structural tensions within and between activity systems" (Engeström, 2006, p. 27).

The Kobe Municipal Futaba Elementary School, of which the Futaba Center is the successor, was founded in 1929. Many locals closely cooperated to aid the construction of the school building by giving donations and permitting their houses to be relocated to create the school site.

FIGURE 3   Athletics meet in 1938 (courtesy of the Futaba Center)

When the Kobe Earthquake struck on January 17, 1995, the school became an evacuation center for many victims of the disaster.

FIGURE 4   School auditorium as an evacuation center for local victims
after the quake in 1995 (courtesy of the Futaba Center)

On February 17, 1995, classes resumed. The evacuation center at the school was closed on September 3, 1995.

On April 1, 2006, the Kobe Municipal Futaba Elementary School and another adjoining school were closed and merged into a new school because of a decline in enrollment. The decline was the result of the rapid aging and declining birth rate of inner-city populations in Japan. In January 2008, the new combined elementary school moved from the former school buildings to a new site.

FIGURE 5   School buildings after the quake (courtesy of the Futaba Center)

On November 16, 2009, the nonprofit organization Futaba Center was established after two and a half years of discussion between the Kobe city government and locals about the utilization of the site of the former Futaba Elementary School. The aim of the Center is to revitalize the local community, making use of the site of the former Futaba Elementary School as a center for cross-generational and cross-cultural exchange, and mutual support among community members.

In other words, the main purpose of the Futaba Center is to empower locals to create their own civic activities such as exchange and learning, and other productive cultural and historical activities. By supporting such activities, the Center hopes to inspire local people to take responsibility for community revitalization. In addition, the Center aims to become a place that can knit various community resources and organizations together.

FIGURE 6   Futaba Center's building, after the renovation of the former Futaba
                    Elementary School's building (courtesy of the Futaba Center)

In May 2011, the Futaba Center began conducting a disaster prevention learning program. Since 2013, the Center's disaster prevention education program director and staff have sought to expand itself based on the new

educational concept of fostering a more agentive learning process for a future-oriented understanding of disasters and disaster preparedness. This type of program is characterized by two approaches to learning about earthquakes. One is to learn through an imagined experience as a victim of an earthquake disaster, and the other is to learn by creating a story about coping with the disaster. Thus, participants can learn about the disaster from actual victim records and project themselves into the sufferings of the victims in the evacuation center, as they live in the center, distribute boiled rice, and so on.

However, in spite of the growing number of participants, the Futaba Center's learning program is facing a fundamental contradiction of how practitioners and learning providers can redesign the program to give learners, who have no experience of facing a disaster, an opportunity to transform disaster prevention learning into an agentive, future-oriented disaster memory, and disaster preparedness.

Creating a Hybrid Learning Activity and Emerging Knotworking Agency in Community-Based Disaster Prevention Learning

The disaster prevention learning program at the Futaba Center is supported and encouraged by many groups and individuals from various backgrounds and organizations, including the Center's staff responsible for the disaster prevention learning program; survivors of the earthquake who act as storytellers about their own suffering after the earthquake; earthquake disaster management and prevention professionals; local guides who show participants around the affected area; undergraduate and graduate students; architectural and town-planning experts; singer/songwriter and other artists; elementary school principals and teachers; municipal officers; firefighters; workers from the electric and gas companies; municipal water department workers; storekeepers; and photographers. When it uses the developmental framework of activity theory, this method of education can be understood as generating a *hybrid learning activity* that goes beyond the encapsulated traditional formal school education and the narrow limits regarding its conceptualization of pedagogical practices. In addition, it is expanding to collaborate and exchange with outside communities and organizations, realizing and creating solutions in the complicated context of everyday life (Yamazumi, 2008, 2009b, 2013).

Various providers of this method of education at the Futaba Center are tackling the issue of how it is possible for the younger generation and people from outside Kobe City, who know very little about the earthquake, to engage in disaster prevention learning. To determine whether an educational innovation helps children and young people generate agentive, future-oriented disaster prevention learning, it is particularly promising to apply Engeström's notion of *negotiated knotworking* (Engeström, 2008, 2018; Engeström,

Engeström, & Vähäaho, 1999), located within the general framework of activity theory, to analyze the newly emerging method of disaster prevention learning at the Center. This method engages learners for the sake of creating new life through flexible, fluid, and impromptu collaboration.

Negotiated knotworking refers to partially improvised but intense forms of collaboration between partners that, despite being otherwise only loosely connected, engage in rapid problem-solving required to meet their common objective (knotworking is a historically new form of collaborative work; see Engeström, 2008). One important aspect that enables the agentive, future-oriented disaster prevention learning of children and young people is thought to be the practice of knotworking, which creates flexible, fluid, and partially improvised forms of intense collaboration, as "knots," without a single stable center of authority or control between otherwise loosely connected actors and activity systems.

In the Futaba Center's development and implementation of a hybrid learning activity on earthquake disasters, creative collaboration between many groups and individuals is not operated by a network in the sense of a set of relatively stable, closed connections between organizational units within a fixed framework and membership. This means that a central function or agent that controls learning activities does not persist. This type of collaboration among partners transcends the limits of closed organizations, where the frameworks and members are often fixed; by doing so, it enables flexible, fluid, and partially improvised activities. This is based on the principle of "distributed leadership" (Spillane, 2006), in which members play leadership roles on a rotating basis, taking the initiative in the face of situations and issues that emerge related to their respective areas of specialization. In this way, knotworking-type collaboration forms to produce an expansive learning activity that increases the agency of participants, including children and young people. The expanding agency in knotworking-type collaboration can be characterized as a *knotworking agency* based on the nature of knotworking in which a center of control or authority does not hold.

A hybrid learning activity for disaster reconstruction and preparedness through knotworking can expand the institutional boundaries of traditional learning at the school, characteristically learning by acquisition of correct answers as responses to given tasks in school texts and the classroom in socially isolated schools. Here, if we support the model of "collective activity system" (Engeström, 1987/2015, p. 63), which Engeström proposed as a basic framework for activity-theoretical research, the expansion of hybrid learning activity such as disaster prevention learning activity can be shown as in Figure 7.

The activity that activity theory tries to grasp is not discrete *individual actions* intended to accomplish a goal over a short term, but *collective activity* that shares an *object* and investigates it over the long term. In the activity system model, mediated by *instruments* (cultural artifacts, that is tools and
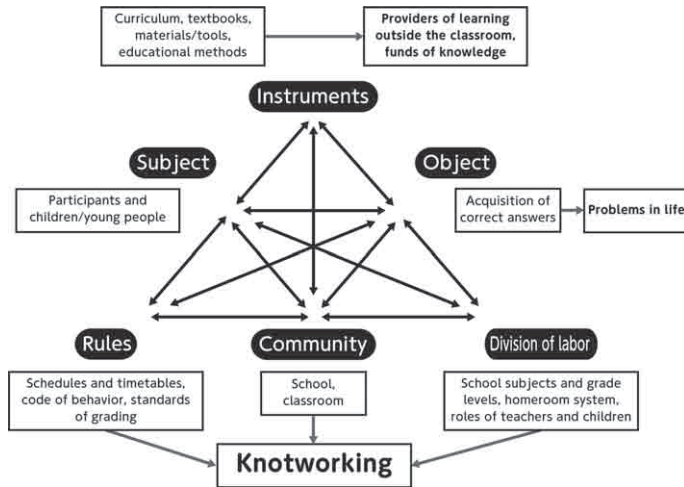
FIGURE 7 Expansion of learning for disaster prevention
learning through knotworking

signs, words and symbols, concepts and models, ideas and visions, technology, etc.), the activity evolves historically, motivated toward the object. At the same time, activity, as the deep layer of the social infrastructure, is also mediated by the various elements of "community," "rules," and "division of labor." Figure 7, using the model of this activity system, demonstrates with arrows how the encapsulated traditional school learning activity system expands through hybrid learning such as disaster prevention learning. Through knotworking, hybrid disaster prevention learning can break through the boundaries of community, rules, and division of labor, set by acquisition of correct answers and classroom walls.

In this kind of learning within knotworking, communities, organizations, and participants outside the school can become so-called *providers of learning*, setting off activity initiatives, while changing and exchanging moment by moment. Through connecting and interchanging potentially diverse resources within and without the classroom, knotworking brings new instruments in the form of the outside providers of learning to the activity system (Yamazumi, 2013). These resources are equivalent to what Luis Moll and James Greenberg (1990) call "funds of knowledge."

Beyond the Role of the Passive Victim: Toward Child- And Youth-Driven Disaster Prevention and Reduction

In knotworking, participants connect and reciprocally share resources potentially related to the complex, multiple, and collectively generated learning trajectories of individuals, collectives, and whole organizations. The intention behind designing and implementing knotworking-type hybrid learning activi-

ties is to help foster more agentive learning for the future-oriented understanding of disasters and disaster preparedness. For example, a participating storyteller from the Futaba Center, a former teacher in charge of earthquake-related disaster prevention education at the Kobe Municipal Futaba Elementary School, gave the following response to our research group's question, "What are some of the qualitative changes that have occurred in earthquake-related disaster prevention learning at this center compared to in the past?":

Excerpt 1

Recently, I… have undertaken many trial-and-error experiments. Reflecting on the past 20 years, I think things are moving in the direction of my storytelling. After all, children possess incredible strength. Furthermore, they have the ability and power to engage in disaster mitigation. I think one future challenge will be for adults to establish spaces where elementary and junior high school students can engage in such activities. And in that context, I think one of the challenges will be to convey to elementary and junior high students the importance of being oriented toward working hard and what it feels like to work your hardest.

(Interview, February 10, 2015)

Like the storyteller at the Center, Carol Mutch (2013b) focuses on and theorizes children's engagement in disaster research in her studies on the role of schools in disaster response and recovery. She analyzes findings from case studies on three state co-educational primary schools (for children aged 5–12 years) in Canterbury, New Zealand, which were invited to participate in a broader project that facilitated storytelling in school communities in regard to experiences of the 2010 and 2011 earthquakes. Consequently, she found that "the schools' stories had many commonalities," but "one difference was… the extent to which children were given agency to determine the direction of each school's project" (p. 449). Based on these case studies, she theorizes a "continuum of engagement of children in research" from "child-related research (research for children)" to "child-focused research (research on or about children)," "child-centered research (research with children)," and "child-driven research (research by children)" as children's agency gradually increases (p. 449). In addition, she and her colleague emphasize that "schools have a role to play in providing opportunities for this emotional processing… through varying degrees of engagement in disaster-related research" (Mutch & Gawith, 2014, p. 64).

In common with "child-driven research (research by children)," the collaborative interventions (as activity-theoretical formative interventions) conducted in the practical implementation of knotworking-type hybrid disaster prevention learning at the Futaba Center must enable the participants to gain and exercise agency. They should take account of the "human potential for agency, for intentional collective and individual actions aimed at transforming the activity" (Engeström, 2006, p. 4). Beyond the role of the passive victim, giving children and young people knotworking agency and the ability to exercise their agency over knotworking-type hybrid learning activities can enable them to get out of school, engage in various and multiple activities, get involved in large-scale activities, and make connections. This form of expansive learning can facilitate the creation of new, mutually supportive cultures and lives. In the following, I take up and analyze a hybrid disaster prevention learning conducted at the Center as an applied case.

Between May 2014 and January 2015, the "College Student-Led Kobe Earthquake 20-Year Memory Flattening Project" was carried out at the Futaba Center as an inheritance/transmission operation as part of the 20th anniversary of the Kobe Earthquake. The university students from multiple universities that participated in this project have not experience the earthquake. The objective of the project was to, at the juncture of the 20th anniversary of the disaster, develop through the "learning," which is the responsibility of students, a new type of system for transmission to re-examine how memories and lessons from the earthquake are inherited.

The project name, "Memory Flattening," implies a way of synchronizing differences and gaps. First, it references the varying levels of the awareness of memories of the disaster. Next, it refers to generation gaps. Students were recruited under the premise that while various other gaps relating to memory may exist, these gaps need to be filled in so that diverse memories of the disaster could be made more visible.

A total of 39 students participated, with 34 from universities in the Kansai region and five from Okinawa. The students participated in the learning themes decided in advance, but new groups were formed through a process of interaction with participants in activities such as training courses and study groups. In addition, themes were modified as learning was deepened with a view to the final presentations on January 10, 2015.

The university students in this project, who possessed a desire to proactively face the possibility of earthquakes but had no experience or memory of such, started from a position of having to confront this contradiction. In overcoming this challenge, expansive learning emerged, which aimed to create new ways of inheriting memories of the earthquake. In the hybrid learning activities mentioned previously, knots for the succession of earthquake memories and lessons were formed with various providers of learning who participated from the regional community external to the universities. In sum, activities such as experiencing evacuation centers, walking tours with

people who have experienced disasters or firefighters from the Kobe City Fire Bureau, and attending lectures on lifeline restoration by employees of Osaka Gas acted as a mediating space for the diverse voices involved in the inheritance of memories.

What follows are the excerpts from two university students' reports on their participation in training courses as examples of their learning through joining the project. Both students were enrolled in a three-year course of the Elementary School Teacher Education Program at a university and wanted to become elementary school teachers.

Excerpt 2

UNIVERSITY STUDENT 1:
Although I was born in Kobe, I did not know what had happened in Nagata Ward since the Earthquake.
…
I felt that when I become a teacher in the future, I would like to let my students see firsthand the records of the earthquake and the reconstruction initiatives in the shopping district.
…
When I walked around the city, I could see burnt trees and burnt telephone poles. I wanted to show this reality to the students.
…
I was also one of those affected by the earthquake, but because I was only one year old at the time, I have not considered Kobe to be the recovered city that much. To me, it is like it has always been this way. Now, at 20 years old, I believe that those in a similar generation or younger than me probably have the same feeling. These two days have reminded me of the importance of the "Memory Flattening Project."

Excerpt 3

UNIVERSITY STUDENT 2:
Over the course of these two days, I have strongly felt the importance of relationships within the community. Many times, more people are rescued by someone in the community than by the fire brigade or Self-Defense Forces. Even a firefighter clearly mentioned that during a large-scale disaster, one cannot expect to be rescued by firefighters. We need to find ways of surviving ourselves. … I am from Aichi Prefecture, so when I hear about earthquakes, I am reminded of the Great Tokai

Earthquake, which they say will reoccur someday. … I felt that there was too little disaster prevention awareness in my home community. … We should listen to the ideas of people from Kobe and put more effort into our disaster prevention. It also made me think that relationships among community members are very important as a first step toward disaster prevention.
…
What made a particular impression on me… was Mr. Tanaka's story. Mr. Tanaka is a business owner who, while his own workplace was damaged, did not neglect his employees, and was also able to return sales to 90% of pre-earthquake figures within a few months of the earthquake. The employees had their homes collapse like other victims of the disaster, and with their families in tow, worked as one unit to put all their strength into restoring the workplace. This story made me feel the boundless power of humanity. If I had not heard this story, I don't know what I would have done when I experienced an earthquake. I can tell that Mr. Tanaka's current confidence is also linked to the positive and unwavering attitude he held after experiencing an earthquake that was worse than one could imagine.

The learning of such university students can generate a kind of "transformative narrative," as described by Donald Polkinghorne (1996) in terms of occupational therapy. The transformative narrative is a particular narrative form of meaning-making and identity formation in which a person changes his or her identity of self from the "victimic"—coined by Jerome Bruner (1994)—to the "agentic"—coined by Polkinghorne (1996). This form of narrative expresses "two correlative movements: the progressive construction of a new agentic life story and the destruction and detachment from the victimic life story" (p. 303). The narratives of these university students involved in hybrid learning activities around knotworking were mediated by the narratives of the various learning providers, which plotted "agentic life stories" of victims, and thus succeeded in reminding us to recall the experiences of people during the earthquake disaster with empathy and solidarity.

The students used these experiences as a foundation for refining their own research themes in groups. For example, the group with the theme of "A Proposal for Disaster Prevention Training for University Students" conducted opinion polls and questionnaire surveys, and participated in real disaster prevention training programs and other similar activities to produce a final output which took the form of the "Disaster Prevention Training Manual for University Students" pamphlet, which was distributed at universities within Kobe. At the final presentation on January 10, 2015, the richly unique and diverse projects from the 13 groups were presented to the Mayor of Kobe

and approximately 200 citizens.

Conclusion

Our activity-theoretical formative intervention in the disaster prevention learning program focuses on how the participants can create new agency and thus form a dialogically negotiated site at the same time—that is, how they can make their own collaborative self-interventions. Engeström (2009, p. 317) indicates that, through such agentive actions, "we gain authority and become authors of our lives." Therefore, the disaster prevention learning activity, as a dialogically negotiated site, enables the participants to transform the town and their own everyday lived lives in it into "*oeuvre, appropriation*, and use value (and not exchange value)," as Henri Lefebvre (1996, p. 180) suggests.

Sannino and Engeström (2017b) refer to the research focus of a formative intervention conducted in an elementary school in a rural area in the south of Italy as follows: "[A] formative intervention was carried out, and it focused especially on uncovering pupils' learning potentials, which may remain unnoticed in regular classroom activities" (p. 62). It is obvious that this formative intervention aimed to expand the participants' agency in terms of both collaborative ability with pupils and the transformative ability to talk about "pupils' learning potentials, which may remain unnoticed."

Similarly, our intervention study tries to provoke participants' knotworking agency by enabling them to shed the passive role of victim and create a dialogically negotiated site where they can talk together about future town-planning to prevent or reduce disaster damage. Therefore, our intervention study focuses on a child-/youth-driven disaster research project in which participants conducted their own research on disaster prevention and reduction. As Mutch (2013b, p. 446) points out, much child-/youth-related research is "adult-centric in both determining the problems and the solutions." Furthermore, in the field of citizenship education, young people's indifference to politics and declining civic participation have become a subject of discussion. However, the following theoretical shift should be granted more significance to promote an understanding of a more youth-centric view of young people's participation: "While their political actions are more likely to be framed around everyday actions and choices rather than formal politics, they do become actively engaged in relevant issues and make more use of the formal political system as they get older" (Mutch, 2013a, p. 96).

For disaster-affected areas, this kind of project can increase the power of author choices and the active agency of children and young people by enabling them to shed the passive role of the victim and to construct their own stories. In this context, transformative agency is heightened by contributing to preparations for, coping with, and rehabilitation and reconstruction activities related to possible future earthquakes. As Engeström, Sannino, and

Jaakko Virkkunen (2014, p. 125) foresaw, the future challenge of activity theory is closely tied to "a growing need for formative interventions in which children and adolescent take center stage as subjects with transformative agency." For these reasons, through such formative interventions, the participants can break away from a community of practice, which gives rise to a subject (successful identity), and move into a community of agency. This ultimately gives them the power of speech to make their own collaborative self-interventions.

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