



From Assessment for Learning to Assessment for Expansion: Proposing a New Paradigm of Assessment as a Sociocultural Practice

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From Assessment for Learning to Assessment for Expansion: Proposing a New Paradigm of Assessment as a Sociocultural Practice

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Abstract

Although the importance of formative assessment has been recognized worldwide, the theoretical foundation is insufficiently captured within a broader sociocultural context that promotes teachers and students building an assessment culture. This study proposes a theoretical framework that supports the claim that formative assessment aims to accelerate an agentic process of transforming and improving the teaching–learning activity systems rather than helping teachers mold students with traditional values and cultural discourses. The characteristics of formative assessment were organized for each of the learning metaphors: acquisition, participation, and expansion. In this paper, assessment for expansion is defined as a form of formative assessment to facilitate expansive learning toward a process of making teaching–learning better, of which the functional core is sociocultural feedback with reference to situational criteria. Next, the theoretical discussions demonstrate that assessment for expansion emerges from making a third space and forming a culturally fitted tool for realistic and sustainable practical judgements. These conditions, which work within a continuum of problematic, ends-in-view, and expanded contexts, recognize the impact of assessments in associating a single student’s voice with a school- and community-wide problem. In conclusion, the possibilities and challenges of assessment for expansion are discussed from theoretical and practical perspectives.

Introduction

Toward building an assessment culture

Teachers must understand students “properly” if they are to teach something “properly” (Dewey, 1938). The teacher’s role is to conduct contingent interaction and responsive teaching

based on their knowledge of students' learning rather than to provide one-way feedback to their students. A powerful and proven means of frequently and continuously capturing developmental progress, potential, and challenges for making learning better is called *formative assessment* or *assessment for learning* (Bennett, 2011; Black & Wiliam, 1998). This theoretical framework has impacted educational policy reforms worldwide (Birenbaum et al., 2015).

It would be inappropriate to assume that formative assessment is always beneficial. As the core of teacher professionalism, formative assessment is an extremely difficult social practice because it is non-neutral and non-transparent and requires continual reflection with a sense of community belonging (Bearman & Ajjawi, 2018). In Crossouard (2012), teachers encouraged the construction of linear and strictly predefined learning through formative assessment and understood it as a technical process that misperceived the complexity of judgement. Thus, teachers and school organizations need an assessment culture where teachers and students collectively become proficient in evaluative judgement (Sadler, 1985; Tai et al., 2018) and seek ideas that help teaching and learning get better. Birenbaum (2014) defines assessment culture as a concept representing the character of a community that continuously learns about and through assessment (the meaning of culture will be scrutinized later). Moreover, she mentioned that assessment culture is a complex system comprising classroom learning and teacher professional learning, resulting in teachers gaining insight into formative assessment. Teachers make assessment a subject of learning to reflect on their educational goals, curriculum, pedagogy, learning resources (capitals), and respect for student development.

The richness of an assessment culture manifests in teachers' perceptions of assessment and their competence in it. Birenbaum (2016) argues that the assessment mindsets—that is, the beliefs and competencies teachers have about assessment—are as follows: “It’s all about learning”; “Assessment drives learning”; “Assessment means dialogue (interaction) with the learner”; “Assessment empowers the learner”; “Diversity is desirable”; “I/we can do it”; “Assessment requires modesty” (p. 276). Another concept similar to mindset is assessment literacy. Assessment literacy performed in assessment cultures is a dynamic, context-dependent social practice in which teachers articulate and negotiate classroom and cultural knowledge with each other and with learners in initiating, developing, and implementing assessments to achieve student learning goals (Willis et al., 2013). In New Zealand, Absolum et al. (2009) refers to those with the right beliefs and competencies in assessment as *assessment-capable teachers*. They understand how assessment can facilitate students' learning and help students become motivated, effective, and self-managed learners who feel deeply responsible for their progress. The learning expectations of an assessment culture are intended to enable teachers to develop their knowledge and skills of assessment and to enable students to self-regulate themselves.

Research question

How does formative assessment work in an assessment culture? Klenowski (2012) argues that it is a sociocultural construct and gains meaning in the experience of the inquiry process regarding what is “proper” with students. However, a sociocultural approach to formative assessment is considered an idealization because the learning context comprises element-to-element complicated relations (Elwood & Murphy, 2015; Shepard, 2000). According to Wiliam (2017), many researchers and practitioners have traditionally preferred decontextualized experimental laboratories that are far removed from the sociocultural essence. He also implied that in attempting to understand assessment from a sociocultural perspective, it is difficult to formulate what theoretical and empirical frameworks should be used and what kinds of evidence should be

gathered. To date, it is not clear how assessment in assessment culture is specified relative to learning, that is, the inner reality of the abstract term “socio-culturally constructed.” In the first place, we do not have a well-developed theoretical framework to systematically understand how assessment in an assessment culture results in learning processes for teachers and students. Thus, school education has not been able to build a specific assessment culture. To increase the feasibility of inserting an assessment culture into school education, more theoretical research that bridges the gap between idealized systems and reality in practice is necessary.

This study proposes a sociocultural theorization of formative assessment processes and procedures that should take place within an assessment culture. The academic and social implications of clarifying this question are twofold and involve reinforcing evidence to support the need for teacher assessment literacy and assessment-capable teachers. First, clarifying the characteristics and redefinition of sociocultural formative assessment can provide concrete suggestions of assessment culture that teachers, students, school leaders, parents, researchers, and community members should aim for. Second, elucidating the mechanism that makes formative assessment a sociocultural construct can help demonstrate how school organizations can collaboratively build an assessment culture.

This study is organized as follows. First, the author reviews the characteristics of formative assessment for each representative view of learning and raises the possibility of assessment that promotes expansive learning as assessment for expansion. We must carefully analyze from what view of learning the assessment is being interpreted because, as Birenbaum (2016) points out, assessment is about learning for students and teachers. It is impossible to understand formative assessment in a single, all-encompassing manner, despite the extensive research over the last 30 years (Baird et al., 2017). By categorizing assessment types according to learning metaphors, a deeper look at the relationship between assessment and culture is possible. Second, the conditions for the establishment and driving process for a theoretical framework for sociocultural formative assessment are discussed. This study proposes an assessment for expansion, which supports the claim that formative assessment does not aim to inculcate traditional values and cultural discourses in students but rather aims to promote an agentic process of fundamentally changing the teaching–learning contexts. To understand how assessment for expansion can be implemented, the author presents two forming conditions and their transitional process by repositioning the previous studies that have intensively connected assessment to the idea of development as expansion. In conclusion, the implications for future research on assessment for expansion are discussed.

Analytical Framework

Three learning metaphors: Acquisition, participation, and expansion

Learning and assessment overlap as the needs of students identified through observation are used for positive change (Baird et al., 2017). More precisely, the characteristics of assessment differ in keeping with the purpose, content, and learning methods. Sfard (1998) categorizes learning as either an acquisition or a participation metaphor. In the former, learning is the personal acquisition of knowledge, and knowing is the possession of knowledge in the mind. In the latter, learning is about forming an identity and maintaining and inheriting an existing community through participation in it, and knowing is about belonging, participating, and communicating with others. Paavola et al. (2004) identifies knowledge creation as the third learning metaphor and argues that the expansive learning proposed by Engeström is a knowledge creation metaphor. However, Engeström (2016) cautions that Paavola et al. (2004) do not address the differences in

the epistemology underlying expansive learning theory and other similar knowledge-creation theories. This study considers the expansion metaphor (expansive learning) to be the third learning metaphor, because the knowledge-creation metaphor is fixated on the universality and reinforcement of culture, while the expansion metaphor highlights deep insights into culture, including historical passage of activities.

Expansive learning theory is a sociocultural approach to learning. It originates in cultural-historical activity theory (CHAT), which explores the dialectical developmental process of people and society based on the premise that the organization and development of social life can only be achieved through dynamic interactions between people and external objects and which reveals how they work together and can independently overcome the problems they face (Yamazumi, 2021). Whereas the acquisition and participation metaphors are the acquisition and formation of knowledge and identities, respectively, that are “given” by the community to which one belongs, the expansion metaphor involves questioning the assumptions generally endorsed by the community and shifting the old problematic context to the new appropriate one. As individual subjectivity and consciousness cannot exist without collective ones, humans develop through changes in the way they participate in the sociocultural activities of their communities, and conversely, their communities must hold the potential for change to seek a better social structure (Rogoff, 2003; Roth & Radford, 2011). By collectively reconceptualizing the simple triangle structure of the activity system (context) developed by Vygotsky (1978), where the individual “subject” uses “tools (mediating artifacts)” to work on the “object (what the ‘subject’ tries to do)” (pp. 39–40), Engeström (2015) succeeds in creating an instrument that systematically explains and demolishes the conservative contexts in which learning takes place in interaction with society. A collective activity system is a unit of analysis that models the action of a “subject” toward an “object” through the mediation of “tools” in the social infrastructure of “rules,” “community,” and “division of labour.”

The key concept driving expansive learning is a contradiction. To change the context better, subjects must create more appropriate “components” for dialectical contradictions within and between “components” and enhance the quality of the object. Engeström’s notion of contradiction is based on Marx’s theory of value, which states that in a capitalist society, all goods, including human existences, have a dual nature: use and exchange value (Marx, 1867). Use-value is usefulness, such that needs can be met through consumption. It considers human beings irreplaceable and uniquely meaningful. Exchange value is the ratio in which a commodity can be exchanged for another. It is based on the market principle concerned with cost-effectiveness and sees human beings as replaceable products. As duality is mutually exclusive and dependent, it is impossible to completely exclude the use or exchange value, at least within a capitalist society. Current learning has been theorized as an effective strategy to meet readymade learning goals and standards that neglect the students’ individual development and focus on exams and competition (Muller, 2018). Engeström (2015) argues that the educational purpose is not to force students to have values that society wants them to have and change them according to what is convenient to society but to enable students to reclaim their inherent value, that is, to rediscover their use-value aspect. Expansive learning is learning that enhances the use-value to overcome contradictions and develop students’ agency to change contexts on better their own.

There are other ways to classify the characteristics of formative assessment, aside from the taxonomy of learning metaphors. James (2008) classifies assessment by learning type: behaviourism, cognitive constructivism, and sociocultural theory. This classification organizes the purpose, methods, subjects, and time of the assessment; the connection between assessment and learning; access to learning resources; task structure; and the definition of performance. However,

the sociocultural theory discussed there is highly abstract, especially in that the description of culture is largely disregarded. Although her discussion centers on the assumption that culture is a real and stable external factor, this area needs to be examined thoroughly.

Culture: Acclimation or creation?

Considering the sociocultural aspect of assessment, it is essential to clarify what *culture* means. *Culture* is used in two different senses, and according to Valsiner (2007), there is a non-negligible discrepancy between them. The difference is whether the individual belongs to the culture or vice versa; that is, whether culture is an entity or a process. Culture as an entity is an external organizer that defines people's actions, feelings, and thought patterns (Valsiner, 2007). Individuals living in that culture have qualitative homogeneity, in which they share the same cultural characteristics to varying degrees and stabilize over time. The non-developmental principle of groups, which treats specific phenomena as representative of a larger group unit, is involved.

Contrastingly, Valsiner (2007) argues that culture as a process is intrinsic to the mental functions that mediate human activity. This was adopted by Dewey, Vygotsky, and other cultural-historical activity theorists (Engeström, 2015). Miettinen (2001) argues that the reconstruction of society using tools could be seen as a confluence of Dewey's instrumentalism and CHAT. This involves two distinctive views of culture. First, culture mediates action. For Vygotsky, culture was synonymous with the meaning of concepts and words that exist within that culture rather than traditional and stable practices (van der Veer, 1996). The other view is that culture is created collaboratively. In the acquisition metaphor, knowledge (tool or concept) is owned by an individual. From the perspective of CHAT, in contrast, knowledge is created and owned by the community. Words and utterances have symbiotic intentionalities that involve interference and subordination by the communicators (Wertsch, 1991). Vygotsky (1978) sees the meaning of cognitive development in a constant process of combative dialogue with society. This idea has been incorporated into the current CHAT. According to Rogoff et al. (1993), tools are created by people working together as they use and adapt the tools provided by their predecessors and attempt to create something new. Engeström (2020) notes that the word "concept" comes from "to grasp" and defined it as "practical tool[s] for handling and mastering objects, and they are also future-oriented visions or ways of worldmaking" (p. 100).

Both definitions of culture share a view of assessment as going beyond personal matters and being done in cooperation with or influenced by someone or something that is not present but shares the same community. In an individual belonging to a culture, internalization accepts the culture, and externalization reinforces its reproduction. There is no idea of relativizing the culture, and there is no focus on the weaknesses and fundamental failures of the culture. In a culture that belongs to the individual, internalization implies using culture as one's own, and externalization refers to creating new tools and concepts. To sum up, when formative assessment is regarded as a sociocultural practice, it has two meanings: 1) following an existing culture (the external organizers that define human actions, feelings, and thought patterns) and 2) collaboratively creating an unknown culture (the instrument that mediates activity). Assessment based on the expansive metaphor of learning, discussed below, is strongly grounded in the latter view of culture.

From “Assessment for Learning” to “Assessment for Expansion”

Acquisition-metaphor-driven assessment

The behaviourist approach to information processing learning, which identifies learning as occurring in the mind and the student as an individual thinker, has proven effective in the past for formative assessment. Individual summative test scores are considered important evidence, as an individual’s development can be expressed numerically through tests that measure possession of knowledge and skills (Black & Wiliam, 1998; Hattie, 2009; Wisniewski et al., 2020). The link between the formative and summative nature of assessment is clear, and effect size, which is the evidence for academic achievement, has long impacted education policy. As the view of students as objects of infusion streamlines the learning process, teachers and researchers can easily generate logical models of “how to make things better,” which can spur the technologization of education, such as packaging curriculums and developing specific assessment tools. This is highly compatible with the information, communication, and technology aspects of instructional design observed in large classroom settings. The purpose of formative assessment is to support a learning environment controlled by a given measurable learning goal and a learning task that involves the amount of knowledge and action within an individual.

The acquisition metaphor is limited, as it simplifies assessment to an extreme degree. Unattainable learning goals, the incomprehensibility of criteria that are qualitative features depicting the developmental potential embedded in learning activities and students’ work (Sadler, 1985), learning goals without student intention or motivation, and fragmented and unutilized competency constructs are imposed on students without their scrutiny (Hughes, 2014; Sadler, 2020). This is related to two more serious problems. First, the questions of what constitutes a shared criterion between teachers and students and whether students can understand it to the same degree as teachers are yet to be resolved. It seems that the “sharing” of criteria as a form of mutual understanding has been replaced by the “one-way transmission” of criteria from teacher to student, as teachers see students as a homogenous group in terms of age and developmental stage (Christodoulou, 2017). Second, assessment may be subject to political interests. Hattie’s (acquisition-metaphor-directed) feedback concept has been criticized as being similar to a centralized governance structure, with the potential to change a country’s educational activities into a large hierarchical organism (Rømer, 2019); as closely related to neoliberalism, sexism, and ableism; and as advancing exclusion in schools and de-professionalization of teachers (McKnight & Whitburn, 2020). If the over-application of summative assessment accelerates under this highly competitive global capitalism, there is a danger that the scope for assessment will be limited. Bennett (2011) warns that the dominance of summative assessments such as entrance exams increases the authority and weight of tests to judge students, and the objects and contents of assessment are delegitimized. Teachers are often under pressure to ensure student success in examinations and benchmark assignments and cannot engage in a holistic development of students in all aspects to support students in becoming full individuals, citizens, workers, and members of their families and communities (James, 2017).

This metaphor has the benefit of efficiently conveying knowledge and achieving political accountability. Conversely, as an unintended consequence, teaching–learning in the pursuit of efficiency and rationality becomes mechanized and does not provide students with new insights. Formative assessment, a feature of this metaphor, is a means of legitimizing knowledge-infused education that enforces social and adult values. The state in which learning remains behaviourism and lacks the perspective of teacher learning is called “testing culture” (Birenbaum, 2014). The

idea of uncritically applying formative assessment regardless of context is prone to a bias toward a technical approach and, therefore, risks adherence to the “letter (formalism)” rather than spirit of learning (Marshall & Drummond, 2006). Subsequently, assessment based on the acquisition metaphor of learning can easily become self-objectifying. Additionally, there are many situations in which format-oriented practices do not fit into the student learning process, making it difficult to foster student autonomy and agency.

Participation-metaphor-driven assessment

In an assessment culture, assessment is understood based on the premise that learning is understood as interaction with others and the environment (Shepard, 2000). Further, as learning is a collaborative construct with others (Vygotsky, 1978), the scope of assessment is stretched to the collective dimension. Assessments that enable participation-metaphor learning concern the unit of analysis as a controller of knowledge and skills and the activities of the school or community.

Willis (2010) argues that for learner autonomy, the process of participating in a community based on legitimate peripheral participation (LPP), theorized by Lave and Wenger (1991), should be considered learning. In LPP, learning implies participation in a community of practice where one acquires cognition (beliefs, knowledge, ways of thinking, and norms that mediate thoughts and actions) from peers and enhances one’s identity through gradual proficiency. In a sociological sense, identity is located at the intersection of the individual and society and is constated through participation in the community in a manner that is constantly (re-)negotiated (Pryor & Crossouard, 2008). Willis (2010) suggests that a teacher’s role in assessment is to facilitate the student’s participation in the community so that the student can understand what is valuable. Students gradually develop a sense of expertise and responsibility in the division of labour from the periphery to the center of the community and understand what is valuable in the classroom, school, and society. Formative assessment, in this context, is a culturally embedded pattern of participation, being a means of passing on a cultural legacy of excellence to the community.

However, situated learning reproduces rather than modifies institutional constraints (Lave & Wenger, 1991), and the participation metaphor has some limitations when used in theorizing sociocultural approaches to assessment. First, teachers and students need to interact in a place that does not seek ideology or hierarchy, but when they are forced to use a shared repertoire within the community, there are fixed limits to change. Willis (2010) defines autonomy as an identity describing a central participant in a community. While this idea is important, as the identity of the participation metaphor is characterized by the passivity of submitting to the existing community, students can only develop the flexibility to identify the most skillful way to adapt to any situation given to them by an authority figure (Engeström, 2015). If learning aims to get students to meet academic expectations, how can they get out of it? The LPP treats the community of practice as an orderly organism with little instability or internal contradictions, leaving out the possibility of going in opposite or unexpected directions (Engeström & Miettinen, 1999). Teachers and students have no choice but to follow the community’s standards, sometimes reproducing unwanted ones in the process. The hierarchical relationship of “control of the individual by the professional teacher” endures here (Gipps, 2008).

Hermeneutic and relational pedagogies such as dialogical feedback (Nicol, 2010), where students and teachers work out the meaning of feedback, teacher–student dialogue, or peer assessment among students, are also a means of hearing the students’ voices. These factors support the learning metaphor as participation, as they are means of emerging and aligning criteria discrepancies, and there is no room to negotiate the purpose of feedback. Lave (1993) states that

situated learning could not be realized with intention; rather, it was generated informally in deep engagement with LPP. If formative assessment has some intentionality and focuses on awareness, it risks being counterproductive to learning in the form of the cultivation of identity through community participation. Merely engaging students and teachers in certain roles and divisions of labour is inadequate for forming whole-person identities.

Finally, the types of learning that account for the sociocultural characteristics of assessment include problem-solving, inquiry learning, and related performance tasks (Gipps, 2008; James, 2008). As learning is distributed among the self and others and the self and society, the scope of assessment is extended to relationships and environments. As teachers do not have full control over what and how students learn, assessment should be situational and run parallel to learning rather than following it. In this way, teachers can elicit more qualitative information on development through activities that allow students to express themselves using various learning resources, compared to the listening style of teacher explanation. However, the culture described here is closer to the real environment. Culture is seen as a product and not a process; therefore, students are engaged in acquiring something predetermined throughout. This perspective is combined with psychometrically summative assessments. Wiliam (2018) mentions that it is almost impossible to maintain generalizability, as assessors cannot fail to ensure metrological validity (whether the constructs that ability assessors want to capture can be captured correctly), reliability (whether the assessment results are the same for all assessors), and activism without learning contents (didactic teaching is better than performance learning). This psychometric perspective prevents the scope of assessment from extending to holistic learning besides subject-centered classroom learning, including identifying ways to spend break time, extracurricular activities, and home-schooling. In Japan, teachers' careful observation and anticipation spread to all student activities in their school life to create well-rounded (*zenzinteki*) students (Arimoto, 2017).

Formative assessment based on the participatory metaphor's view of learning is discussed from a sociocultural foundation. However, it is an incomplete theoretical framework on its own. The perspective of teacher learning is weak, in that teachers are seen as adept agents of the community, and their words and actions are considered absolute, as they play a leading role in the community. The lack of a modest attitude toward assessment and the absence of a teacher learning perspective makes building an assessment culture difficult. The acquisition and participation metaphors are concerned with enhancing the adaptive aspect of culture, that is, the acclimatized perspective of assessment. This conventional formative assessment is called *assessment for learning* in this study. The students envisioned in assessment for learning are encouraged to adapt to the existing educational contexts, where autonomy and self-regulation become standardized, controlled, and replaceable capital. Assessment data add to this capital formation and are not allowed to relativize assessment. However, the developmental theory of a creative perspective of assessment, that is, the combining of expansion and learning, is missing here.

Expansion-metaphor-driven assessment

Expansive learning is the process of co-constructing new contexts (activity systems) by dialectically overcoming contradictions, conflicts, and obstacles. Burner (2019) argues that CHAT is useful for formative assessment because of its potential to be "itself change-inducing" (p. 104). Teachers and students can use assessment situations to inform and facilitate change in educational activities that can enhance teaching and learning. The expansion metaphor is consistent with the orientation of an assessment culture, which emerges from multiple interactions between classroom learning and teacher professional learning and enhances the quality of learning by strengthening

the connections between subjects (Birenbaum, 2014). According to Willis and Cowie (2014), opening a space where teachers, as reflective practitioners, can learn about and with their students allows for dynamic assessment in which students take ownership and advance their learning. Black and Wiliam (2018) point out the importance of converting such space into a unit of analysis called an activity system and capturing how formative assessment occurs in the complex and multilayered relationships among activity systems. Thus, the formative assessment required in an assessment culture should take place in expansive learning. Two assumptions can then be made: either that expansive learning is facilitated by formative assessment or that formative assessment is a result of expansive learning.

This study argues that if expansive learning is about meeting students’ needs as a formative assessment, both assumptions are not in conflict but rather function consistently as one mechanism. Henceforth, the author uses *change* with two different meanings, namely transformation and improvement, as creating new activity systems with assessment that bring about two changes in student learning: direct and indirect. *Transformation* refers to activities that indirectly change activity systems (mainly social foundations) in student learning in better ways: reforming school educational goals, curricula, educational contents, teachers’ roles and collegiality, and views (beliefs) on teaching and students. *Improvement* refers to directly influencing students by developing tools for making student learning better: constructing concepts (mediating artifacts) and engaging with students in the form of practical judgements (described below). The driving force of transformation and improvement is sociocultural feedback conducted regarding criteria in the third space (Table 1). In this study, assessment for expansion is interpreted as a theory that supports expansive learning and enriches assessment perceptions in the professional learning community under a series of transformations and improvements.

Assessment for expansion is not entirely new but an organized theoretical framework that builds on existing research findings on how assessment relates to various kinds of improvement and transformation. In the following, the components of the activity system will be discussed in the innovative perspectives toward the “integration of transformation and improvement.”

Table 1: Functions of assessment for expansion.

Driving method	Function	How to engage with students	Meaning	Key activity
Sociocultural feedback	Transformation	—	Change activity systems to indirectly support students’ learning	Construct the third space
	Improvement	Practical judgement	Directly influence student learning by developing tools for making learning better	Enculturate a tool (mediating artifact)

Subjects and object

The subjects of transformation include students and teachers. An object is not a short-term goal that an individual seeks to achieve but a long-term purpose with a substantial foundation that gives meaning and motive to activities (Engeström, 2017). In an assessment culture (Birenbaum, 2014, 2016), teachers are expected to develop assessment skills through professional learning. For students to become capable of self-regulated learning, it is essential to bridge “co-regulation” and “socially shared regulation” with teachers through formative assessment (Nishizuka, 2022a;

Panadero et al., 2018). However, defining self-regulation of learning as “the voluntary acquisition of predetermined things” is an incomplete goal. Students’ expansive learning, which would be one way to cultivate agency (Engeström, 2015), has now been actively applied in school education. Yamazumi (2021) examined Japanese elementary school students and found that inquiry-based learning with teachers and other learning stakeholders was gaining importance in students’ expansive learning and was important for transformative instruction to transfer responsibility and authority for creating activity systems for students. Teachers must support students’ expansive learning holistically by providing tools to improve their learning to take charge of their future. Thus, the object for teachers and students has the common denominator of making education better.

Tools (mediating artifacts)

In CHAT and expansive learning, the subjects work with the object through tools. The assumption that the subjects create the tools is why several studies have located formative assessment within the tools of the collective activity system. As Black and Wiliam (2003) state, “The development of formative assessment depended on the development of new tools” (p. 623).

The “Learning How to Learn” project conducted by James et al. (2007) between 2001 and 2005 explored the conditions under which formative assessment worked well and hypothesized that formative assessment was essential for fostering learning autonomy. Webb and Jones (2009) explored various contradictions in implementing formative assessment in their lesson design. One teacher experienced contradictions between both peer assessment (tool) and time constraints (rules) on one hand and lecture-based instruction (object) and peer assessment (tool) among students on the other hand, as cramming instructions produced higher scores on external standardized tests. Thus, peer assessments are not always useful and can interfere with practice. Asghar (2013) uses the activity system as a reflective framework to analyze the complexities of formative assessment in higher education. The interviews demonstrated that for university teachers who were struggling to understand the underlying principles (philosophies) of teaching and learning, CHAT was a powerful tool for reflecting on their formative assessment practices (such as their emphasis on dialogue, classroom conversations, and responses to questions) and analyzing the cultural-historical influences that favour or disfavour practices. All three studies considered transformation tools for improvement. Teachers applied existing methods and imparted functions through selection, creation, and optimization.

Rules

An example of the rules of the activity system, that is, the social foundations that underpin teaching, are curricula and lesson plans. Formative assessment should be used to adjust teaching to suit the realities of students (Black & Wiliam, 1998). While the range of meaning of such teaching extends from a single in-class activity to a means of perceiving teaching, transformation in teaching, at least in Japan, tends to be temporary and partial (Nishizuka, 2020). It is difficult to make major transformations to curricula inextricably linked to policy and when teaching depends on textbooks, depriving students of diversity rather than improving it. Wyatt-Smith and Klenowski (2013) recommend that policymakers, researchers, and practitioners move from the “dominant discourse of stated criteria and standards as the fixed and regulatory influence on judgment” to “open[ing] a space for a robust discussion about ethical professional judgment that recognizes equity, ethnicity, and socio-economic difference” (p. 48).

Broadfoot (1990) argues that owing to the need to enhance students’ self-confidence and self-awareness and the interest in strengthening students’ self-esteem, teachers must pay more

attention to the symbiotic relationship between curriculum and assessment, which she called “cursessment.” Clark (2015) coins the term “formative curriculum” to refer to a curriculum that is not designed to predict or limit evidence-gathering activities. When teachers engage in curriculum redesign and recognize obstacles as constructive and necessary challenges, and when teachers, administrators, parents, learners, and the broader community work together closely, they can help students be responsible citizens, confident individuals, effective contributors, and successful learners. They assert that not only does a curriculum underpin assessment, assessment is also used to transform the curriculum as a basis for instruction.

Community and division of labour

The transformation certainly comes down to partnerships (community) and the roles of those involved (division of labour), including collegial relationships among teachers and school-leader–teacher, teacher–student, and parent–teacher relationships.

Formative assessment tends to rely on the efforts of individual teachers, but to implement it sustainably, school-based professional development should be conducted so that teachers can continuously help each other while building cohesion (Bond et al., 2020; DeLuca et al., 2012). Davis et al. (2014) note that assessment is important in supporting adult learning and the systems in which adults work and explore the role of leaders. They found that leaders used formative assessment principles, structures, and strategies as leadership tools to ensure their usability to support adult learning instead of simply telling teachers what to do. This is a typical study of the effective use of formative assessment to promote contextual transformation.

The lack of mutual trust and respect between teachers and students can weaken the significance of feedback, as students may conceal their learning and disregard advice from their teachers (Cowie, 2005). Social capital (the network of trust created by human connections) determines when it is most appropriate to provide feedback. While research on parents and assessment is relatively new, recent empirical research demonstrates that establishing partnerships between schools and families and including parents in the assessment process can help build a sustainable assessment culture (Adie et al., 2021).

In Japan, teachers do not have adequate time for formative assessment. Aside from teaching, they are responsible for lunch, cleaning, after-school club activities, and many other school duties, which prevents them from having substantial time to work with their students and often causes mental illness and *karoshi* (death by overwork). To conduct a formative assessment in such situations, policymakers must fundamentally revise the school’s administrative structure and reduce and distribute the amount and content of work per teacher. These studies highlight the need to transform partnerships and the division of labour, and it is important to consider the impact of assessment on social capital and increase how teachers observe students by enriching their social capital.

Summary

Each component is interrelated. Cowie et al. (2018) explain that “noticing” (a responsive act that invites action that is an inclusive, dynamic, and purposeful response to the evidence of student ideas) depends on curriculum connoisseurship, cultural and community connectedness, and collaborative ways of working. For example, a modest attitude (subjects), in which teachers themselves are introspective and not stuck in past experiences, is a condition for teachers to transform the curriculum (rules) and build horizontal relationships with students and trust/respect students (division of labour). As the curriculum (rules) is determined through negotiations with school management policies, teachers in charge of the same grade and other teachers in charge of

the same subject matter having good relationships with colleagues and the community (community) will enable teachers to flexibly transform the curriculum to suit the reality of the students. Assessment for expansion contributes to the promotion of expansive learning by inducing transformation and improvement in each component of the activity system. In assessment for expansion, through collaborative clinical interactions between teachers and students where they look at each other horizontally and try to overlap each other's minds fully, teaching-learning contexts are created where teachers and students coexist as equals, and the purposes and methods of improvement are socially determined.

Table 2 presents the characteristics of formative assessment for each of the above three metaphors. Sfard (1998) notes that each metaphor is not superior to the other but should be chosen according to its purpose. Parr and Timperley (2016) present a promising approach wherein assessment concepts are viewed as a continuum rather than as polarized or complex concepts that are neatly boxed together. Assessment for expansion extends the range of the continuum of assessment, which leads to a challenge in rethinking formative assessment from its individual and technical dimensions to its collective and cultural dimensions as an anchor that helps teachers explore and better realize a future that no one has yet experienced.

What kind of opportunity can enable the emergence of assessment for expansion? Distinguishing the functions of formative assessment will be useful for analyzing the driving mechanism for accelerating expansive learning. One function is factual-value judgement, which identifies the facts about learning needs and possibilities and evaluates how good or bad they are; the other is practical judgement, which focuses on determining specific ways to improve (Nishizuka, 2021). Legitimate factual-value judgements must relate to making a third space, and realistic and sustainable practical judgements should be connected to forming a culturally fitted tool for improvement.

Table 2: Characteristics of formative assessment by learning metaphors.

Metaphor	Acquisition	Participation	Expansion
What formative assessment is			
What for?	Acquisition of knowledge	Full participation of existing community	Concept formation for changing community
Where to?	Social adaptation	Social adaptation	Social innovation
Whom?	Individual	Group	Group
To what?	Knowledge inside head	Identity	Contexts including community
See teachers as?	Authority	Authority (experts)	Reflective practitioner
See students as?	Passive	Autonomous	Agentic
See culture as?	Something that has nothing to do with teaching and learning	Something absolute to be obeyed	Something that should be reconstructed and should mediate action
How teachers and students use formative assessment			
What is the relationship between teachers and students?	Vertical relationship	Vertical relationship	Horizontal relationship
How are the criteria shared?	Unilateral transmission	Constrained (fixed goal-oriented) negotiation	Co-construction
Where are the standards?	Government, including curriculum guidelines, testing systems, and textbooks	Teachers at the center of the community	Object that emerges after negotiation and interaction between teachers and students
Where is the zone of proximal development?	Between actual test and perfect scores (higher scores)	Between students (beginners) and teachers (experts)	The third space

Exploring Forming Conditions of Assessment for Expansion

Making a third space for sociocultural feedback

Engeström (2015) notes that what a teacher teaches does not inherently match what the student learns. In the dialogical field, to identify the causes of problems and decide the desirable direction (object), expansive learning as agentic learning fills this gap. The dialogical field is “the third space,” defined as a place where subjects engage in dialogue to clarify what knowledge is, overcome contradictions and limitations, and democratically carve out a better activity (Gutiérrez et al., 1995). It deviates from the dichotomy of a teacher-driven space, which supports the theory of knowledge transfer, and a student-driven space, based on the theory of knowledge acquisition. This idea overlaps with the conditions of assessment culture, which holds that the activity system on the teachers’ side must also be transformed to improve student learning. The independent objects of the students’ and teachers’ activity systems must be reconfigured to coincide with a potentially sharable object and expected outcomes (Engeström, 2001).

How can teachers create a potentially sharable object in the third space? The zone of proximal development (ZPD) emerges as a collective. The ZPD is the space between the current and future levels of development, which can be accomplished on one’s own and in collaboration with peers and can be promoted through teaching and learning, respectively (Vygotsky, 1978). It considers the issues with the individualistic, in-the-head knowledge and skills from psychological perspectives in the acquisition metaphor (Yamazumi, 2021). However, as Rogoff et al. (1993) state, the ZPD inherently considers the social basis of problem solving shared among the parties involved, such as the nature of the problem, the values involved in determining appropriate ends and means, the intellectual tools available, and the institutional structure of interaction. Thus, Engeström (2015) redefines the ZPD as the distance between the day-to-day actions of an individual and historically new forms of social activity produced in the group. If teachers and students can generate a collective ZPD in the third space, they will all be positioned as learners.

The factual-value judgement plays a role in creating the third space and a collective ZPD. Teachers’ perception is responsible for students’ learning needs and embodies a reflective attitude. As teachers must avoid extreme decisions, such as a teacher-driven controlling view of instruction and a student-driven and liberal learning process, this dilemma triggers the emergence of a third space for knowledge creation. Formative assessment is support that efficiently creates and crosses the ZPD by finding where students currently are (current level of development), where students are going (future level of development), and how to get there (Allal & Ducrey, 2000; Black & Wiliam, 2009). This concept has tended to be biased toward psychometric applications, but researchers are beginning to see anthropological ideas connected to the ZPD. Flerer (2015) notes that assessing whether there is an “ideal” or “mature form” of learning from the social and material environment and the students’ interactions within it is to move away from the idea that assessment is about extracting what is in the mind of the individual and move towards capturing the collective ZPD (p. 242). When the focus is on improving student learning and fundamentally transforming students’ and teachers’ activity systems, factual-value judgements help shape collective ZPD and the third space.

Within the third space, a dialogue takes place between teachers and students as to what, how, and why they are trying to transform and improve. “Dialogue is not simply between people and languages, but within people and between the frames that people use to categorize experience” (Gutiérrez et al., 1995, p. 446). If the dialogue conducted solely by teachers willingly incorporates resistance on the part of the students, the act of questioning assumptions, common sense, and the

existing activity system is a condition for the establishment of a third space. Just as the expected outcomes or potentially sharable objects are inferred, the criteria that characterize the quality of outcomes are formulated on the spot. The author calls such criteria “situational criteria.” This view of goal setting is the same as “ends-in-view” (Dewey, 1939). This is the view that educational goals (ends) are not straightforward directives for where learning is to be achieved but rather methods and plans for getting there. Before thinking that something is improved or transformed because of a goal, the idea of setting goals because they are important for improvement and transformation takes precedence. This interpretation allows teachers to respect their assessments without unwilling subordination to policy. In the third space, expected outcomes and situational criteria are developed (sometimes implicitly) to change the activity systems. In this paper, implementing feedback to change the teacher–student activity systems based on these situational criteria is called sociocultural feedback (Figure 1).

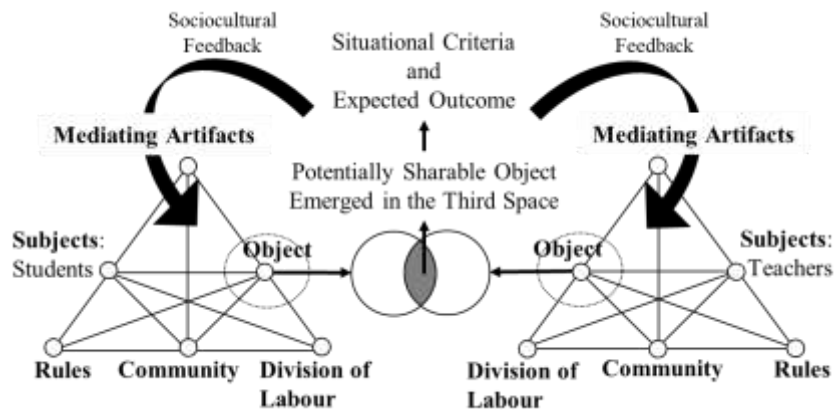


Figure 1: Activity system and third space (based on Engeström, 2001, p. 136).

Forming a culturally fitted tool for realistic and sustainable practical judgement

Sociocultural feedback encourages teachers to develop tools for making student learning better. It is preferable to separate this procedure from the abovementioned transformation due to the complexity of the process. According to the expansion metaphor of learning, the concept of formative assessment is perceived as a tool to eliminate certain hardships and disruptions that reorganize a given context (Dewey, 1920). Torrance and Pryor (2001) separate the types of formative assessment, which is useful in understanding the sociocultural aspects of assessment. Convergent assessment implicitly encourages students to complete a given task, while divergent assessment takes stock of what students know and where they need to go and directs learning in various ways. They suggest that it is not an “either/or” but a “both/and” and that decisions must be made about what is best. The beliefs and objectives of assessment conflict with other contradictions, which hinders the implementation of formative assessment (Harris & Brown, 2009). They recommend creating a new formative assessment concept to mediate contradictions.

In Thanh Pham and Renshaw (2015), two university teachers in Vietnam realized that the researchers’ innovative formative assessment practices that had been successful in Western classrooms did not fit with and actually contradicted Confucian culture. Therefore, the teachers began negotiating with the researchers to implement a hybrid formative assessment practice that seemed more relevant to the needs of Vietnamese classrooms and their university exam

requirements. This is instructive for generating tools in culturally optimal ways. The re-instrumentalization of the concept (Engeström, 2015) happens, in which teachers generate formative assessment concepts that can be adapted to their unique sociocultural foundations.

The creation of tools based on the history, language, society, and customs of the community is critical to the realism and sustainability of the assessment for expansion because rather than a process of incorporating concepts based on research and experimentation (general proof rote), for fundamental improvement, teachers must experience translation and internalization into school-based concepts (local proof rote) using their own experiences and the language used in the school setting (Lewis et al., 2006). In Japan, for example, “formative assessment” is an unfamiliar concept and faces cultural resistance (Arimoto, 2017; Nishizuka, 2020). This does not mean that formative assessment is nonexistent in Japan’s educational history. The language, tacit knowledge, and practical wisdom entrenched in the community contain structures that use observation for improvement and provide opportunities for learning through “moments of contingency” (Black & Wiliam, 2009). For example, noticing students is remarkably close to *mitori* (look-take), which implies recognizing potential as abilities and characteristics and identifying facts that draw some value from the perceived object. *Mitori* is not a detached “look-take and looked taken” relationship between teacher and student but rather a relationship of mutual huddling; it is an intersubjective, subject-forming, collective, and relational process when teachers get involved with their own existence (Sato, 2000).

Practical judgement needs to directly expand student learning. Practical judgement is to be distinguished from sociocultural feedback. This is to emphasize that teachers’ collective activities and a single teacher’s interactions with students are fundamentally separated processes. In a school organization, there are sometimes discrepancies between a teacher group and a single teacher. It means that even when a teacher group decides to do something, the teacher may intentionally not do it or may not be able to do it even if they want to. In order to be able to analyze such a gap between activity and action, between planning and carrying out, it is appropriate to propose the concepts of sociocultural feedback and practical judgement as separated. Although *mitori* does not necessarily result in assessment for expansion, it can provide a sociocultural foundation for practical judgement. As teachers are familiar with assessment practices rooted in their cultures, they can expect to gain a deeper understanding of the meaning of the practice, enhance its functions, make it sustainable, and develop assessment-capable teachers.

Transition of contexts by assessment for expansion

The two previous sub-sections demonstrate that assessment for expansion produces two change levels. In explaining the two processes of transformation and improvement as a single mechanism, the sociocultural model of assessment presented by Pryor and Crossouard (2008) is useful. They envisioned a meta-context with a reflective dialogic function in the assessment system to break down the power relations between teachers and students. This meta-contextual reflection comprises three steps: First, there is realization through action, which means becoming aware of problematic contexts, producing legitimate texts, and creating space to discuss power and control. Second, there is recognition through reflection, which involves getting what is appropriate and resolving discrepancies between teachers and students and the issues of power and control that cause these discrepancies. Between these two steps is narrating identities collaboratively. Through narratives, the constituents involved in the learning process confide about how they perceive the power and control that the structure and impact of the social order and organizational practices have. In turn, for the students, the identity belonging to the community of practice is oriented, and

for the teachers, a change of consciousness is made while rationalistically generating a narrative meaning that includes the history of the social bearers who participate in the assessment practice. Thus, the meta-context deconstructs and situationally reconstructs criteria that serve as the means to value the teaching–learning activity and is a spacetime that reveals the dialectical relationship between the story’s meaning and the existing dominant context, such as the power relationship (Elwood & Murphy, 2015), which is a characteristic of the third space.

Elwood and Murphy (2015) describe the transition from the pre- to post-context through the mediation of the meta-context, that is, a process of collective development through assessment. This is consistent with the trajectory of teachers and students transforming and improving their expansive learning. Their discussion does not distinguish between teacher and student learning, but it is desirable to understand them differently if the reality of assessment culture is to be accurately followed. Applying this to the sociocultural model, the process of driving assessment for expansion can be divided into three phases: problematic, ends-in-view, and expanded contexts (Figure 2). This process envisions the creation of a third space and collective ZPD by a group of teachers sharing factual-value judgements on student learning with each other because inquiry learning, which has been identified as contributing to the development of agency, involves a special working group to allow multiple teachers to collaborate, as it is difficult for a single teacher to take on the integration of in-school and out-of-school learning and cross-curricular work.

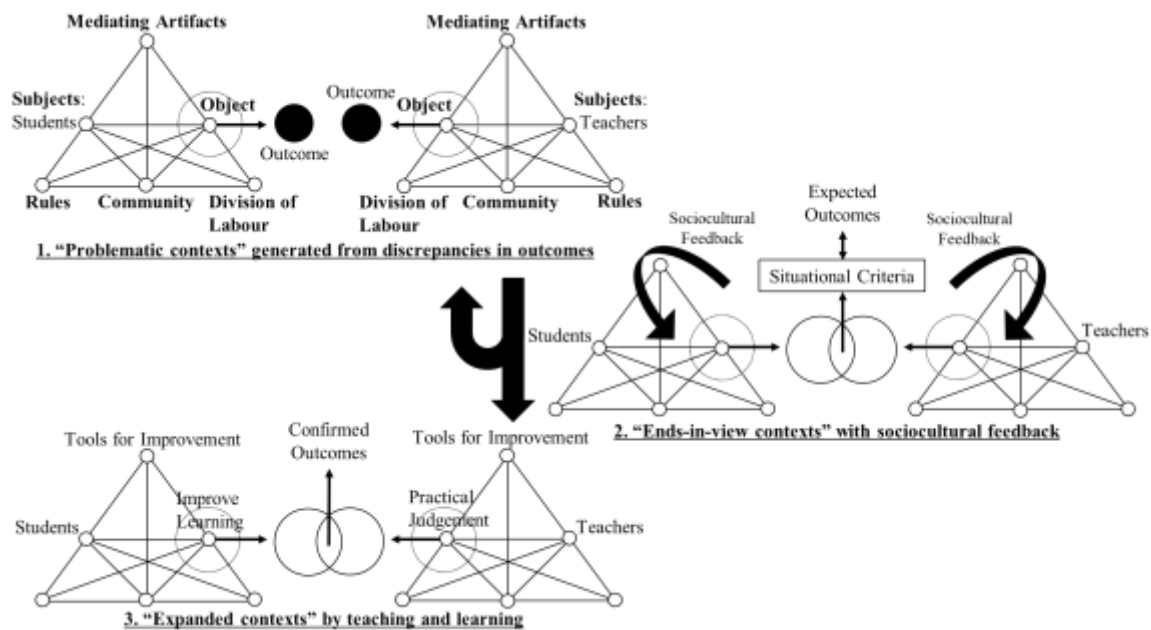


Figure 2: Driving process of assessment for expansion.

The problematic contexts begin with teachers noticing discrepancies in outcomes that arise from interactions with students. Following the assumption of activity theory that an individual’s thoughts and actions are caused by the collective factors that encompass them (Roth & Radford, 2011), it is essential to see the problems that students face as problems for the teacher and the school rather than problems to be borne by a single student. This task of questioning the existing contexts based on a factual-value judgement demands a reflection on the teachers’ role that makes

them rethink their teaching and their mindset to create a third space and collective ZPD. We must analyze whether the factual-value judgements are valid and whether contradictions are generated within and between the components of the existing activity system.

Next, ends-in-view contexts imply the enrichment of dialog within the third space. This has the same role as the meta-context mentioned above in incorporating a meta-social component into assessment (Pryor & Crossouard, 2008). In contexts that emerge from factual-value judgements, situational criteria are socially constructed to meet expected outcomes to provide sociocultural feedback. This includes various components that constitute the basis for improvement, such as learning goals, curricula, teaching methods, teachers' mindsets and roles, relationships with colleagues and students, school organizational structures, and partnerships with parents and stakeholders. If such transformation alone occurs, it will only make the teaching and school organizational structure better. For example, if teachers in charge of the same grade every year share the status and problems of their students at the end of the school year, they may think about the new students they are responsible for in the following year and may not work directly with the students having problems. This is a serious issue concerning the timeframe of the judgement (Gladovic et al., 2022). Therefore, the ends-in-view contexts must function so that assessment as a tool for improvement is developed into a culturally optimal form.

The third is the expanded context, which demonstrates the results of performing sociocultural feedback, including practical judgement. Summative assessment pertains to whether expansive learning has been achieved. The summative nature of the assessment needs to focus on what made expansive learning happen and how well situational criteria that prove the success of the expected outcomes were valid. Engeström (1991, as cited in Engeström, 2015) states that what is more progressive cannot be determined using a fixed, externally given measure and that learning will be expansive only if the internal contradictions necessary for expansive learning are precisely identified and the contradictions are challenged and resolved. The key is to compare the problematic and expanded contexts and to examine how the ends-in-view contexts interacted with them. The questions to ask are as follows: Were the factual-value judgements reasonable and beneficial to learning? Were the expected outcomes and situational criteria consistent and appropriate for each? How and to what extent did sociocultural feedback in reference to situational criteria contribute to the transformation and improvement? The answers will lead to new problematic contexts and trigger the beginning of a cycle of assessment for expansion.

Limitations

The limitations of the discussion in this study are twofold. First, there is the methodological examination of how teachers become capable of assessment for expansion. Assessment culture, in the sense that community members have habits that allow them to create tools for improvement, requires a cultural view of external organizers and processes. There must be a shared recognition, at least among teachers, that formative assessment is possible in a culture of both stability and instability, and the study of culture and cognition must include social-relational systems and internal activities as objects (Cole, 1985). Pursuing whether such a perception of teachers and communities exists and how to enable assessment for expansion is essential in considering the feasibility and sustainability of assessment culture. The author is currently engaged in supporting interventions to help teachers conduct assessment for expansion and has identified two conditions for success (Nishizuka, 2022b). First, assessment for learning is prioritized if assessment is not based on the teacher's reflective and humble attitude and does not allow for persistent analysis of factual-value judgements. Teachers must know how to gather assessment data needed by other

stakeholders and consistently communicate those data for student learning (Absolum et al. 2009). The process of what individual teachers assess in the classroom and how they bring it into the third space must be examined. Second, there is a need for teachers (especially middle leaders) to serve as mediators between teachers and research interventionists by translating the theoretical advice of interventionists into practical language and ideas. Teachers who culturally appropriate intervention information play a crucial role in discussing how/what to transform and improve, which serves as an opening to identify ways to enable expansive learning without relying on interventions.

The second limitation derives from the question of how assessment for expansion can be related to the nature of the subject discipline. Coffey et al. (2011) suggest that teachers are so focused on assessment strategies that they overlook the essence of the subject discipline as it relates to what they are assessing. They advocate for a greater focus of teacher attention in the classroom and a reconfiguration of all that is necessary for assessment to comply with discipline-related criteria so that teachers see and respond to student thinking as ideas and reasoning that are new in the discipline. Dewey's (1939) goal theory of ends-in-view is based on the idea that instructions should be designed to connect students' experiences with the discipline. There is a danger of superficial and worthless learning in assessment for expansion because of its inherent ability to support learning outside the traditional academic domain, such as inquiry and problem-based learning. Is it impossible to conduct assessment for expansion within the framework of traditional subject education? Is it possible to conduct assessment for expansion without relying on conventional subject-based pedagogical knowledge? In an empirical study, the author found that teachers use both assessments for subject-oriented learning and assessments for expansive learning (Nishizuka, 2022b). As subject-based and inquiry-based learning can build a collaborative relationship toward the common goal of fostering student agency, assessment for expansion is also likely to be observed within it. However, care must be taken to ensure that learning goals are not set independently of students. This is difficult, even though it is logically possible.

Conclusion

This study proposed a new theoretical framework for assessment to aid expansive learning that collaboratively creates new contexts and examined the conditions for its establishment and driving process. Sociocultural feedback as a core of assessment for expansion promotes two types of change: transformation and improvement. Transformation requires a third space and collective ZPD to fundamentally and collaboratively reflect on and reconstruct students' and teachers' activity systems to support the development of tools for improvement. Improvement concerns students who use tools to become agentic, implying that assessment for expansion is not a specific technique but a culturally mediated practice. The driving process for assessment for expansion involves working within a continuum of problematic, ends-in-view, and expanded contexts, where a creative feature of culture has the potential power of assessment to associate the cause of a single student's problem with the problems of the entire school organization and learning community. This idea benefits from the theoretical foundation of CHAT, which can provide a theoretical framework for the sociocultural interpretation of formative assessment and a methodological framework for a high-quality practice of formative assessment.

More focus on empirical research is required to prove that to foster an assessment culture, assessment for expansion must be implemented for teachers to continue professional learning and for students to enrich their agency. The reports on derived theoretical findings through empirical studies are left for another article (Nishizuka, 2022b).

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