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Chapter 11

Non-affirmative Theory of Education and Cultural-Historical Activity Theory: Where Do They Meet?



Alex Mäkiharju, Petra Autio, and Michael Uljens 

Abstract This study investigates how cultural-historical activity theory (CHAT) and non-affirmative theory of education (NAT) position themselves regarding the questions of normativity, ontology, and epistemology. The reason for choosing these three issues as a point of departure for a comparative study is that they highlight three interrelated dimensions of how educational research and theory are related to educational practice. The amalgamation of the theories is presented in a dialectical and comparative dialogue. Both theories highlight the cultural-historical context and emphasise the achievement of autonomy and emancipation through an individual's self-activity. While NAT is primarily perceived as a theory conceptualising education as a cultural and historical phenomenon, CHAT is designed as a general systems-theoretical approach to be used as a point of departure to achieve a change in praxis, but not by directing praxis from an outside interest.

Keywords Non-affirmative theory of education · Cultural-historical activity theory · Normativity · Epistemology · Ontology

Introduction—Three Dilemmas for Educational Theory

A core challenge in developing educational theory and related research is the so-called theory-praxis problem (Schmied-Kowarzik, 2008). How does education theory relate to educational or pedagogical practice? In the following analysis, we aim at highlighting some aspects of how two significant approaches to education deal with this core issue. The approaches are CHAT, as represented by Engeström (1987), and NAT, as represented by Benner (1987, 2015, Chap. 2, this volume). In our comparative analysis, we discern between three aspects of the theory-praxis problem. They are the ontological, epistemological, and normative-ethical aspects.

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As we see it, the main issue in the *ontological* dilemma has to do with the character or nature of education and learning. In short, what is education, what is learning, and how do they relate to each other? In philosophy, answers to the ontological problem are sometimes offered in terms of general assumptions about the nature of external social reality (Bhaskar, 1975; Winch, 1958, 1969), for example, by defending different versions of realism. Such discussions deal with how we think theory relates to reality. For example, do we argue for a representational approach, saying that educational theory *reflects* educational reality as it is in and of itself? Alternatively, some argue that educational theory essentially has a *constitutive* function (i.e., that this theory makes visible what is counted as education in the first place). To this extent, such constitutive ontological positions limit themselves to only saying something about education and learning and how they are related; they may be called *regional ontological positions*. These regional answers are crucial in making explicit the character or nature of the phenomenon in question.

The *epistemological* aspect of the theory-praxis problem has to do with what kind of information we believe we have access to regarding this reality and what kind of knowledge we may arrive at about education through educational research. Traditionally, in epistemology, a distinction has been made between critical, hermeneutical, and positivistic approaches, while intervention-oriented research is sometimes seen as a subcategory of some of these. This epistemological question points towards the methods used in empirical education research.

In the normative-*ethical* aspect of the theory-praxis problem, we refer to the aims and methods of education. More precisely, the question is whether and to what extent educational *theories* themselves should include formulations regarding the aims and prescriptions of methods to be used in education. We may also ask if theories of education can avoid taking a position regarding the aims.

Reformulating the aims into research questions, this study primarily intends to answer the following questions:

1. What are the conceptual similarities and differences between NAT and CHAT as they ontologically characterise the phenomenon of education?
2. How do NAT and CHAT position themselves in relation to established epistemological traditions?
3. How do NAT and CHAT respond to the ethical question of normativity?

The expectation is that our comparative research strategy regarding the above three core dilemmas may provide us with a more reflected understanding of each approach. Due to its central character, the main emphasis is put on the ontological aspect.

The article is structured into four parts. First, we describe where the theories are historically rooted. In the second and third parts, we discuss how NAT and CHAT position themselves in relation to the three core dilemmas. In the fourth part, we compare the theories based on which conclusions are made regarding how the approaches may meet each other in a dialogue. Before doing so, it is worth mentioning that both theories are constantly evolving. It is, therefore, impossible to bring forth every aspect and nuance of each theory. The theoretical discussion, is therefore, mainly based on Engeström's (1987) work on CHAT and Benner's (1987) work on NAT.

NAT and CHAT—Shared Roots with Divergent Branches

Both NAT and CHAT draw on partly overlapping roots of educational reflection (Kant, Fichte, and Hegel). The seminal ideas very much draw on modern philosophy of the subject or the mind. The educational dilemma presents itself anew by accepting a philosophy of freedom and leaving ideas about human beings as determined by, for example, innate eternal sin, social class, or utopian, teleological visions about the future. The educational core dilemma that presented itself was that if we assumed that the subject was radically free, this would lead us to two possible but contradictory conclusions. First, if an individual is radically free, this may lead to a view where education is seen as having the complete power to mould the individual along predetermined intentions. This would view education as omnipotent. The second but opposite conclusion from viewing the individual as free is how educational influence is even possible. If radically free, would it not mean that the learner herself would be in total control regarding the construction of knowledge and cultural identity? The subject would determine for herself what effects pedagogical influences would exert. Such a constructivist position would make education obsolete. Both CHAT and Bildung-centred NAT draw on and develop positions that allow us to explore this pedagogical causality.

CHAT has grown and developed within the Russian educational and psychological tradition. The philosophical basis can be found in Marx's (1845) work "Theses on Feuerbach", which accentuates that research is not to be limited to a description of the world but to contribute to its change and development (Engeström et al., 1999). As an early representative, Lev Vygotsky was inspired by Marx. Vygotsky's work was, in turn, developed by Aleksei Nikolajevits Leont'ev.¹ The Finnish educationalist Yrjö Engeström developed the theory further by introducing a third generation of activity systems (Engeström, 1987). It is this version of activity theory that will be the subject of our analysis of CHAT. The theory has been defined as a 'cross-disciplinary framework for studying how humans purposefully transform natural and social reality, including themselves, as an ongoing culturally and historically, materially and socially mediated process' (Roth et al., 2012, p. 1).

As there are many parallel approaches within the sociocultural and socio-historical branch of research on learning and education, we wish to specify the reason for choosing CHAT as a comparative counterpart to NAT instead of, for example, sociocultural theory (Säljö, 2011) or situated learning (Lave & Wenger, 1991). One reason for deciding on CHAT is that it represents a theoretically well-refined, fruitful, and widely accepted theory within learning research (Engeström, 1999). In addition to being an influential and well-elaborated theory, its universalistic character makes it interesting for further analysis. The theory is applied within several fields of research (e.g., education, economics, health care, technology, and law) (Engeström & Glăveanu, 2012; Engeström & Sannino, 2010; Yasukawa et al., 2013). CHAT applies the same terminology and language regardless of which area

¹For further reading, see Vygotsky (1978) and Leont'ev (1981).

is analysed, making it interesting to focus on a specific area, in this case, education (Hardman, 2008; Knutagård, 2003).

Non-affirmative education theory is a concept and collective notion referring to a longstanding tradition of theorising about education in German and Nordic education research (Benner, 1987; Uljens & Ylimaki, 2017; von Oettingen, 2001). Although elements of non-affirmative education may already be found in the writings of, for example, Plato (Benner, in press), in its modern sense, NAT draws on the modern German-Nordic (West European) education tradition, with Rousseau, Fichte, Schleiermacher, and Herbart as representatives. NAT focuses on questions of how intentional pedagogical interventions, as carried out in schools and educational institutions, connect with the learner's activity to reach beyond existing ways of relating to the world, others, and oneself (Benner, 2015; Uljens, 2018; Uljens & Ylimaki, 2017). Both the theory and the terminology are relatively unknown outside of Germany, and the Nordic countries, which is paradoxical as NATs' way of thinking is essentially aligned with a Western-European education tradition.

NAT of Education

Given the three perspectives on the theory-praxis problem, non-affirmative education theory represents a regional ontological position, starting with asking what education, in essence, is and how it relates to the process of *Bildung*. In drawing on the theory of *Bildung*, non-affirmative education aims to develop a position between, or rather beyond, the so-called freedom philosophy and liberalism. Non-affirmative education theory avoids describing education as something omnipotent or obsolete but instead follows a third line of reasoning. An alternative view on *pedagogical causality*, as introduced and developed by Fichte and Herbart, provides ideas for bridging this dilemma with the concepts *summon to self-activity* and *bildsamkeit*. In discussing these and other notions, we refer to Table 11.1, as developed by Benner (Chap. 2, this volume).

Four core concepts are of particular significance in NAT. The first two are constitutive: (a) summoning to self-activity and (b) *bildsamkeit*. These concepts are fundamental in the sense that they illuminate how the theory ontologically describes teaching as related to the individual's effort to reach beyond a current state of affairs through his or her own learning activity. While these constitutive principles consider universal features of pedagogical *Bildung*-related activity, additional concepts are necessary when locating this process into, for example, institutionalised education governed by a curriculum. For this, two additional notions are introduced: the regulative (societal) principles that describe (a) a non-hierarchical relation between different societal praxis forms and (b) how societal interest transforms itself into educational practice (Benner, 2015).

Table 11.1 Two constitutive and two regulative principles describe education as related to the processes of *Bildung*

	Constitutive basic concepts of the individual dimension	Regulative basic concepts of the social dimension
A <i>Theories of education (Erziehung)</i>	(2) Summoning to self-activity (<i>Aufforderung zur Selbsttätigkeit</i>)	(3) Pedagogical transformation of societal influences and requirements
B <i>Theories of Bildung</i>	(1) <i>Bildsamkeit</i> as humans being destined to receptive and spontaneous corporeity, freedom, historicity and linguisticity	(4) Non-hierarchical order of cultural and societal practices
	C <i>Theories of educational institutions and institutional reform</i>	

Benner (Chap. 2, this volume)

Constitutive Principles of Non-affirmative Theory

Bildsamkeit

The notion of *bildsamkeit* takes on different meanings in German education theory, as its counterpart in Swedish does (i.e., *Bildbarhet*). First, in both languages, these concepts generally include the human ability to learn, referring to a kind of plasticity or the individual being indeterminate. Second, the concept typically refers to the possibility of influencing the other by educational means but only by inviting the other to actively work with a given set of contents or tasks. In other words, the notion of everyday use refers to the subject's ability to be educated. While the first meaning refers to an innate human ability (learning), the second meaning refers to the possibility of externally affecting the individual (educability). In neither of these definitions is the subject's own activity or contribution visible. A third interpretation advocated by NAT is the following (Uljen & Ylimaki, 2017).

In the *Bildung*-centred tradition, as explicated by Humboldt, *Bildsamkeit* refers to the free *interplay* between the individual and the world, with varying intensity but in principle as a never-ending process. In this interpretation, the ability to learn is assumed, but in the process of *Bildung*, as open-ended interplay, an individual is seen as actively reaching out to the world in the very same moment that she is influenced by the world. To be human involves a continuous process of becoming in relation to one's being. This capacity to learn also means the creative ability to think about what is not present, to think beyond, or to imagine. This feature of being human—an experimental reflection on one's world-related activities—is not a gift from the pedagogue but rather something that may be influenced but not determined. More precisely expressed, *Bildsamkeit* refers to the individual's engagement in a reflective, meaning-making activity that is initiated by an educative act. Here, we see *Bildung* as the ever-ongoing interplay between man and the world, while *Bildsamkeit* is a subcategory of *Bildung* referring to a learner's activity related to pedagogical initiatives (Uljen & Ylimaki, 2017).

Summoning to Self-Activity

The Other is actively forming new knowledge, but it is done intersubjectively, not only through a subjective process. Education as a summons to self-activity is related to the principle of *Bildsamkeit*. First, education as a summoning to self-activity includes recognising the subject as capable of transcending its present state. This transcending is assumed to occur through the learner's own activity. Education as a summoning to self-activity means to de-center the teaching-studying-learning process by involving the learner as a constitutive, active part in the process. Given the individual's assumed freedom, the process is ultimately dependent on how educational invitations are received by the learner.

In non-affirmative education, the pedagogical activity involves, in essence, intervening in the process of *Bildung* and initiating the learner's *Bildsamkeit* as the learner's active interplay with the world. How the world comes to be presented to the subject is then central, as is the way the individual is invited to act on such presentations. Pedagogical activity simultaneously co-creates experimental spaces that allow the subject to distance herself from her immediate life world and make her experiences of the world and role in its objects of epistemic and moral reflection. While the process of *Bildung* is lifelong, pedagogical activity has a clear beginning and an end.

This pedagogical invitation as a summons to self-activity operates as a kind of intervention in the subject's relationship with themselves, the world, and others. The learner and the teacher establish a shared and mutual sphere where the learner can come to perceive the world differently. In a pedagogical setting, human *Bildsamkeit* is something recognised by the subject and seen as having the potentiality for self-transcendence. Therefore, *Bildsamkeit* refers to the subject's processing of her experiences through her own activity. The result of the interaction in the pedagogical space is undetermined and therefore impossible to predict for the teacher and the learner. Studying becomes an intentional activity in which the learner is trying to transcend his or her present state. Learning is typically what is experienced after intentional study activity has occurred (Uljens, 2018).

This line of thought assumes education is about challenging the individual to transcend her present life world, her way of understanding herself, the world, or others; the educator cannot limit her activity to only confirming or affirming the learners' present experiences or interests. On the contrary, although education needs to recognise the learner's present potential, intentions, experiences, interests, and identity, the very idea of education is to challenge the learner. In this respect, education is about recognising the learner, but it is not about affirming the learner. Rather, education as a non-affirmative activity introduces elements, situations, occasions, observations, and contents that may contradict the learner's present way of understanding the world. Education in this sense is something that is irritating, frustrating, or that stands in contrast with the learner's life-world experiences. That this summoning of the learner's self-activity is non-affirmative means intentionally involving the learner in the process, and that external aims and interests are not

mediated uncritically. Such unproblematising, affirmative instruction runs the risk of making education into an instrumental technique whose value could be measured in terms of how well the learner has adopted pre-existing ways of thinking (Uljens & Ylimaki, 2017).

Regulative Principles of Non-affirmative Educational Theory

Non-hierarchical Relations

That politics regulate education and that education prepares for political participation is common sense. Yet, it is worth observing that if we accept both of these positions as simultaneously valid, it also means that we define the relationships among, for example, politics, economy, and education as non-hierarchical or non-linear. Such a position is subject to continuous critique between and within these fields of practice. As a consequence, such a position also reminds us that education must accept that it is subordinate to politics, but not in a way that lets politics escape educational critique. Further, it means that education must be organised in such a way that it allows future political actants to redefine politics. It also means that education cannot reserve an omnipotent position for itself by claiming the right to formulate what future education should contribute. In educational theory, there are many proposals that societal practices deserve to be identified as fundamental and included in a system or praxeology. The number of these societal practices is less important; their non-linearity is what is decisive. Benner (1987), for his part, identifies six so-called praxeological co-existential (i.e., ethics, politics, economics, health, law, and education). These co-existential all have their own terminology to describe the *regional ontology* of each societal praxis form.

How Societal Interests Are Transformed into Legitimate Pedagogical Practice

The above idea about non-hierarchical relations between education and politics, given the constitutive principles of summoning self-activity and *bildsamkeit*, will have certain implications for how the second regulative principle is defined. How do societal interests transform into educational practices? The answer provided by non-affirmative theory is normative. It says pedagogical practice should organise itself in relation to the curricular aims and contents in such a way that the principle of *Bildsamkeit* is not violated. We may then explain the difference between affirmative and non-affirmative education as follows.

Schools are led by prescribed goals. To the extent that education expects teachers to lead individuals to a predefined way of viewing the world without involving the

learner in self-directed activity, pedagogical activity operates affirmatively. However, as the pedagogical invitation, in terms of a summons for self-activity, is a provocation to the subject to transcend his or her current state by his or her own activity, a teacher should not uncritically affirm current or future ideals and values. Summoning self-activity rather opens up a reflective, experimental space of *Bildung* by inviting the learner herself to make meaning from certain presented content. Such a pedagogy is necessary in order to become a cultural reasoning, self-reflective subject.

Differently expressed, school education may be culturally conservative, oriented to reproducing the culture as it is, or its education may be culturally radical or utopian, oriented not to reproduce but to produce a world beyond what is at hand. Both models may expect teachers, in their pedagogical activity, to affirm such conservative or utopian ambitions. Yet, if these aims were affirmed, the principle of *Bildsamkeit* would not be recognised as valid.

In any political system, curriculum policies formulate what is expected to be passed on in terms of culture to the next generation and what is to be reached with the help of education. The question is *how* this is done. Non-affirmative pedagogy expects teachers to act in a problematising fashion in relation to such external aims, regardless of whether they are conservative or utopian. Transforming societal aims into pedagogical practice in a *Bildung*-centred tradition that accepts the principle of *Bildsamkeit* as crucial is about securing the learner's space to work on the selected content and make up her own mind.

CHAT

The approach of CHAT is activist and interventionist and has been developed as a theoretical framework for merging practical transformation and extensive research (Sannino, 2011; Sannino et al., 2016). Ontologically, the point of departure in CHAT is a *tension* between society (the collective) and the individual. Society and the individual are seen as reciprocally constituting each other: the individual exists within society, and society exists within the individual. An individual's action can never be understood as isolated from the reality that the individual exists within (Knutagård, 2003). Simultaneously, society is seen as a qualitative whole, larger than the sum of individual activities. From an ontological perspective, this position represents a general approach to social and cultural philosophy. The reciprocal relationship is a point of departure that guides understanding in any form of societal practice, education being one of them. CHAT deals with this constitutive tension by arguing for a kind of contextual learning theory with a societal perspective that stems from a Hegelian worldview. The theory is intended to be valid for understanding, interpreting, guiding, and examining learning-related change processes within any societal field of practice (e.g., education, health care, law, IT).

Epistemologically, the activity system can be defined as a system theory. The goal of a system theory is to create models of the dynamics, conditions, and

constraints to clarify objects, methods, and tools that can be applied to other systems at every level of organisational settings. This means that a goal can be reached in many ways (Stichweh, 2010).

Historically, the approach has evolved through different phases. Vygotsky (1978) initiated the first generation of CHAT. He proposed the notion of *mediation*, which was crystallised through a triad consisting of a subject, object, and mediating artefact. CHAT emphasises that individuals do not simply react to their surroundings and environment biologically. Rather, these responses are mediated through cultural artefacts, tools, and symbols (Engeström, 1987).² However, the first generation of activity theory was criticised as being limited since the unit of analysis was too focused on the single individual (Engeström, 2001).

Leont'ev (1981)³ overcame this limitation in the second generation of activity theory. He clarified the important difference between individual *action* and collective *activity*. Through his famous example of the *primeval collective hunt*, he demonstrated that everyone performs individual actions in order to achieve a collective goal (outcome) (Leontev, 1981). When activity theory gained prominence in Europe during the 1970s, critical questions regarding diversity and dialogue between different traditions, cultures, and perspectives were raised (Engeström, 2001).

In the third generation of activity models, the perspective was again extended. The third generation of the theory addresses not only individual actions and collective activities but also learning between and within organisations or *activity systems*. In the third generation of activity, the analysis includes at least two interacting activity systems. The components within a third-generation activity system were defined by Engeström (1987) and are based on the different components' roles in the learning process within an activity system. The components are defined in Fig. 11.1.

Subjects refer to the acting individual or individuals within an activity system. *Mediating artefacts* refer to the meanings embodied in objects as these objects come into play in the social world. Such mediating artefacts are essential to

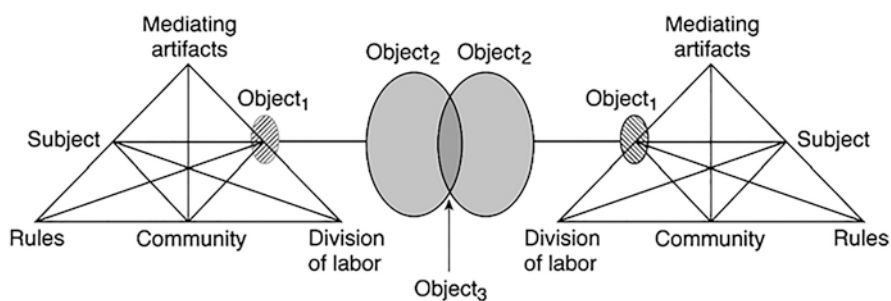


Fig. 11.1 Two interacting activity systems as a minimal model for the third generation of activity theory. (Engeström, 2001)

²For further reading, see Vygotsky (1978).

³For further reading, see Leontev (1981).

culturally mediated, historically developing practical activities (Daniels, 2004). Mediating artefacts are tool-like resources gathered by the subject. These tools mediate thought between the subject and the context within an activity. The subject uses a tool (or tools) to accomplish the object and achieve the intended outcome. These tools can be psychological or material. The tools or artefacts can be linguistic or non-linguistic (Barab et al., 2002).

The *object* of an activity system represents the problem space that the subject is working towards. The activity is directed, moulded, and transformed into outcomes with the help of symbolic, internal, and external mediating artefacts, including both tools and signs.

Social norms (conventions, interactions) and *professional rules* (such as laws, and decrees) within the activity system that affect the subject's actions are referred to as *rules*.

The people who participate, share the same problem space, and are involved in the object-oriented nature of the subject's activity system are referred to as the *community*. The community is the larger group of subjects that exist within the system and is described as exerting a powerful influence on the other elements of the activity system.

The *division of labour* is both vertical and horizontal and refers to the negotiation of responsibilities, tasks and power relations within activity systems.

Vygotsky, Leontev, and Engeström all contributed to the contemporary mainstream understanding of CHAT as it developed from a theory that focused on a single individual's activity and a limited number of artefacts to one that takes into account multiple activity systems and several artefacts. Through this work, they also developed and made clear the epistemological and ontological foundations of the theory as we understand it today.

Expansive Learning

From a pedagogical perspective, the notion of *learning* is at the centre of the whole approach. CHAT describes learning as something expansive. In explaining expansive learning, Engeström (2001) makes use of *four central questions*. In addition to these four questions, five main principles form a matrix that can be used as an analytical tool for empirical research (Engeström, 2001; Fitzsimons, 2003).

The first question that CHAT points out concerns *who* the learning subjects are and how they are defined and located. The question of who is defined and located as the subjects encompassed in an activity system. The second question seeks an answer to *why* they learn and what makes them make the effort to learn. The third question relates to *what* they learn and what the contents and outcomes of their learning are. The fourth and last question is: *How* do they learn? and What are the key processes of learning? These questions form the foundation for how learning is regarded by individuals and organisations. In addition to these four questions, Engeström summarises CHAT by using five principles, explained below.

From a pedagogical perspective, we immediately see that these questions cover what is normally referred to by the traditional didactic triangle. However, what makes this triangle *cultural* and *historical* is revealed in the five additional principles relevant to understanding learning. Second, this triangle (what, how, and why) is disconnected from the school as a context for learning.

The first principle is that a collective, artefact-mediated, and object-centred *activity system*, understood in its network relations to other activity systems, is taken as the prime unit for analysis. Goal-directed individual and group actions are only understandable when interpreted against the backdrop of an activity system. Activity systems realise and reproduce themselves by generating actions and operations.

Second, as an activity system always involves a community of multiple points of view, traditions, and interests, *multi-voicedness* is central. Division of labour creates different positions for the partakers, who carry their own histories. The activity system itself also carries multiple layers and elements of history engraved in artefacts, rules, and conventions. Multi-voicedness is multiplied in networks of interacting activity systems and also shows the *multiperspectival* (Spinuzzi, 2015) nature of the activity, and providing an understanding of how actors with different perspectives, activities, and motives can work together and develop knowledge.

Third, given that activity systems are moulded over lengthy periods of time, their *historicity* is crucial to understand. The challenges and potential can only be understood against the activity system's history. History needs to be studied as both a local history of the activity system and its objects and as a history of the theory and tools used in shaping the activity.

The *fourth* principle consists of *contradictions* as sources of change and development. The concept of contradictions takes on a central role in this theory. They are primarily seen as essential features for *driving* change and development. Contradictions are not seen as problems or conflicts. Rather, contradictions are historically accumulated structural tensions within and between activity systems. Contradictions are not immediately visible, but they are disturbances that arise because of contradictions noted in the activities that ensue. Based on the assumption that contradictions accumulate over an extensive time span, contradictions demand analyses of historical courses of events. A hypothesis that has been generated through historical analysis can be tested and enriched with data concerning contradictions and conflicts that members of an organisation have said and experienced (Engeström, 2016).

Engeström (1987) explains the contradictions by using four levels of contradiction within the human activity system (see Fig. 11.2). These contradictions are required, but they do not constitute a sufficient reason for expansive learning (Engeström & Sannino, 2010). Level 1 consists of the primary inner contradiction within the central activity that exists between the components in the activity system. For example, a primary contradiction can be the division of labour between teachers in a school. The secondary contradiction is to be found between components in the central activity. The contradiction is often revealed between two or more components in the activity system. Secondary contradictions are often made visible when

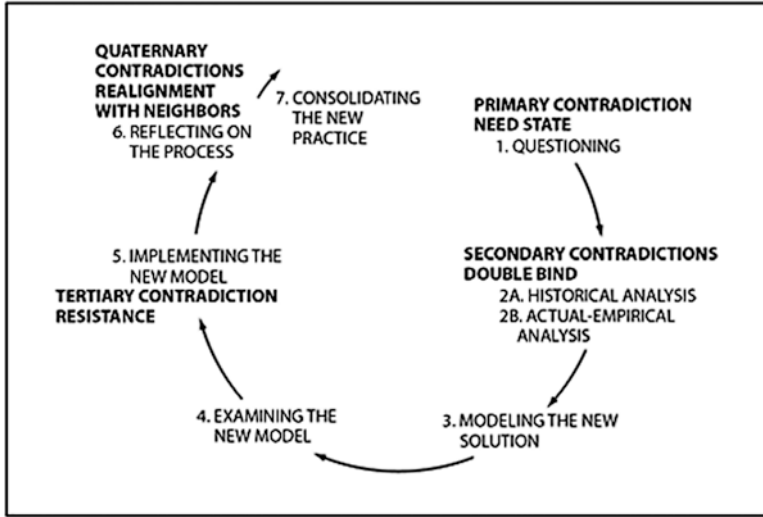


Fig. 11.2 The phases and corresponding contradictions of expansive learning. (Engeström, 1999, p. 384)

new elements (e.g., technology) appear in the system. A recent example could be the transition from traditional classroom teaching before the coronavirus pandemic to virtual teaching methods during the pandemic. The tertiary contradiction appears when individuals of the community ‘introduce the object and motive of a culturally more advanced form of the central activity into the dominant form of the central activity’ (Engeström, 1987, p. 103). For example, a teacher wants to teach individually (the dominant motive), while a school leader emphasises a collaborative teaching method (the culturally more advanced motive). The quaternary contradiction is between the central activity and essential *neighbouring activities*. A neighbouring activity refers to an activity that encompasses the object and the outcome of the central activity (object activity). These are the activities that create instruments for the central activity (instrument-producing activities), the activities that affect the subject in the central activity, such as education and skills (subject-producing activities), and activities related to laws, statutes, and administration that affect the rules of the central system (rule-producing activities).

The final and fifth principles are to define an activity system as the unit of analysis. The theory of expansive learning indicates that learning happens through an expansive cycle (see Fig. 11.2). Activity systems move through relatively long cycles of qualitative transformations. As contradictions within an activity system are intensify, some individual participants begin to question and deviate from its established norms. A full cycle of expansive learning may be understood as a collective journey through the *zone of proximal development* (ZPD) of the activity.

Engeström (1987) defines the ZPD as the ‘distance between the everyday actions of individuals and the historically new form of the societal activity that can be collectively generated’ (p. 137). The distance between the present everyday actions of

the individuals and the historically new form of societal activity can be generated as a solution to the double bind⁴ potentially embedded in activities.

Engeström argues that theories of learning that limit their focus to an individual's ability to learn new knowledge and skills do not promptly explain how complex learning truly is. For example, these theories often presuppose that the knowledge or skill that is being taught and learned is stable and reasonably well-defined and is being taught by a competent teacher who knows what and how to *teach*. Learning in professional organisations may occur in stark contrast to the former presupposition. The reasons behind this are that organisations and people sometimes learn knowledge and skills that are not stable, defined, or even understood ahead of time. Subsequently, people must learn new activities due to important transformations in their personal lives and organisational practices. Skills and knowledge are being learned at the same time as they are being created (Engeström, 2001).

Expansive learning is a tool of intervention and a longitudinal process of collaborative knowledge construction. Learning is described as a cyclic model in which development occurs through different steps that epistemologically describe how CHAT views learning. A *problem* can be concrete or abstract and is in a state of change when being processed in the different phases of the expansive cycle in order to ultimately reach a concrete solution, which includes the conversion of the solution of the problem into practice. Expansive learning is spiral-shaped, and different phases emerge when new problems are identified or when a need for expansive learning arises (Engeström, 1999). When expansive learning occurs, the object of the activity system is renegotiated, which, in turn, leads to an expansion of the object.

The need state, included in the primary contradiction, is manifested by contradictions within components of the activity system. The need state, when a new artefact is introduced, functions as a starting point for the activity system. The double bind is a secondary contradiction between the components in the activity system when a foreign element is introduced to the activity system. The tertiary contradiction is between the old and the new activity; it is about application and generalisation. Finally, the quaternary contradiction is between the new activity and the neighbouring activities; it is about the reflection of the process and the consolidation of the new practice.

By combining the four educational questions with the five principles, Engeström's matrix is used to epistemologically examine and define expansive learning within organisations. All questions are answered concerning every element that is included in a matrix. Based on the focus of the study, relevant components and questions from the matrix are selected and answered.

Based on the matrix, it is possible to epistemologically analyse how learning occurs within and between activity systems, for example, when multiple activity systems interact to achieve a joint goal or learn something.

⁴A double bind is, according to Bateson et al. (1956), an inner contradiction in conjunction with a communicative situation where an individual involved in a relationship receives two negating messages causing the individual to be wrong regardless of response.

Formative Intervention

CHAT is an activist and interventionist approach (Sannino et al., 2016). Within CHAT, several intervention methods have been developed, such as organisation workshop (Carmen & Sobrado, 2000), the clinic of activity (Clot, 2009), and the change laboratory (Sannino, 2020; Virkkunen & Newnhan, 2013). These methods are all different approaches to *formative interventions* (Engeström, 2011). Here, we will take a closer look at Change Laboratories (CL).

The CL method was first implemented in Finland in 1995. The structure typically involves six to twelve weekly sessions that last approximately two hours each, with subsequent follow-up sessions. The design is based on historically formed contradictions. In the sessions, both participants and researchers use a set of representational devices designed for analysing contradictions in their activities in order to develop new solutions. This sounds similar to action research, but a distinctive difference is that the conceptual tools that stem from CHAT are used in the process. The approach is built on two main epistemological principles, namely *double stimulation* and *ascending from the abstract to the concrete* (Sannino et al., 2016).

Double stimulation is a principle of volition and agency. In short, the studies are not only of the task that the researcher or experimenter designed. The subject is also always interpreting and reconstructing the task, which cannot be strictly controlled from the outside. In his studies on the development of children, Vygotsky also gave the children potentially useful tools—mediating artefacts—which could radically change the experiment and reveal new psychological formations in the child (Sannino et al., 2016).

Ascending from the abstract to the concrete is a principle and method of dialectics developed by Davydov (Engeström, 2020). A prime example of an abstraction is the idea of the commodity as the *germ cell* of capitalism, as developed by Marx. The germ cell is the starting point from which one ascends to the conceptually mastered concrete. As a starting point, the germ cell is manipulated and transformed (or experimented with) to find a basic explanatory relationship, which is represented with the help of a model. This model of a germ cell is used to generate and solve further problems. This diversification and enrichment of an abstract model lead to an ascent to the concrete. Or, in other words, a conceptually mastered systemic concreteness that opens up possibilities for development and innovation (Engeström, 2020).

By ascending from the abstract to the concrete, a reconceptualisation of the object of an activity can be attained. This is not only a process of observation and categorisation, but also of practical experimentation that connects the origins of the germ cell to its reconceptualisation. This internally contradictory unity generates new complex, theoretically concrete developments (Engeström et al., 2012).

To summarise, formative interventions are expansive learning processes in which learners reconceptualise and practically transform the object of their activity to face its unsustainable historically formed contradictions. In CL, the support and

provocation by the researcher-interventionists lead to an expansion of the object by mobilising concepts stemming from CHAT (Sannino et al., 2016).

NAT and CHAT: A Comparative Analysis—Where Do They Meet?

In the following section, we intend to analyse and discuss similarities and differences between the two approaches concerning three aspects of the theory-practice problem: the ontological, the epistemological, and the normative problems.

The previous short descriptions reveal that CHAT and NAT have comparable features but also exhibit differences. Both theories originate from the similar roots of the modern, post-Kantian theory of education developed based on Fichte's critique of Kant's transcendental conception of subjectivity. Based on Fichtean and Hegelian ideas, both recognition and the empirical Other are of significant importance (Kivelä, 2004). Through the concept of summoning self-activity and the notion that this is constitutive of the individual's development into cultural being, the theories accentuate the importance of the cultural-historical setting within both approaches (Davydov, 1999; Miettinen, 2020).

Ontological Similarities and Differences

Through an analysis of ontological positioning, we refer to how each theory conceptualises its object. Our findings show how the theories regard pedagogical intervention. The subheadings reflect similarities and differences in how the theories handle the theory-praxis dilemma.

Learning and Teaching

Perhaps the most striking difference between the two approaches is how they frame the process of learning. While NAT focuses on learning as it relates to teaching as a relational phenomenon, CHAT focuses on how learning occurs in collaborative processes where the relations between the actors are more horizontal. In CHAT, learning occurs through interventions. It is the community that sets up action plans ahead of planned interventions, a model similar to lesson planning. The goal is to change a specific practice; the planning is affirmative, but the intervention process is non-affirmative.

When NAT is used to view human learning, it is in relation to somebody summoning somebody to self-activity. NAT suggests that human beings are endowed with the human capacity to learn (*Bildsamkeit*) and, like Humboldt and Rousseau,

observes that humans learn regardless of teaching through continuous and active interplay with the world (the process of *Bildung*). Yet, NAT does not limit its theorising to the learning process but engages in how pedagogical interventions operate and how we may conceptually explain the teaching-studying-learning process. In contrast, CHAT is an interdisciplinary theory. Despite the first impression, it is not only a theory of learning but also a theory of human activity. CHAT does not focus on individual learning but on collective transformations as expansive learning processes. The Hegelian concept of *need* lies has an ontological foundation. Thus, CHAT is a learning theory and does not represent itself as primarily an educational theory. However, given its Hegelian roots, it is not surprising that CHAT finds the empirical Other as having a constitutive function in human learning, whereby this approach, like NAT, deviates clearly from intra-individualist constructivist theories. The concept of ZPD and expansive learning, as well as the idea of teaching as summoning self-activity, clearly indicate that learning typically occurs in relation to others and that it can be guided by a more competent other (Engeström, 1987).

The Learners' Activity in the Centre

Both approaches emphasise that learning is a task for the learners. The individual gains knowledge only to the extent he or she can encounter and, at some initial level, comprehend the content in such a meaningful way that helps her to reach beyond a present or previous understanding. Benner (1987) expresses this by claiming that in teaching, teachers are paradoxically forced to treat the learner as if they would *already* be able to master what the learner *may become* able to master through the learning process. In CHAT, Engeström (2001) includes what we call *learning an invention*, or that knowledge and skills are being learned as they are being created. Such an extension of the object of learning theory is welcome, although teaching in schools can, to a limited extent, mimic such a view on learning. However, the concept of summoning the learner's self-activity may, from the learners' perspective, appear very close to learning as expansion.

The Object or Contents of the Learning Process

Both approaches accentuate the centrality of the learning contents. Learning is always about learning something. CHAT expresses this by being oriented towards the core issues or principled insights present in the learning content. NAT again, in its interpretation of *Bildung*, similarly reminds us that pedagogically driven learning focuses on the content, yet reminds us that brute learning of the contents as such is not what is sought. Rather, in NAT, it is expected that the contents be selected and treated pedagogically in such a way that the learner simultaneously reaches an understanding of the questions behind the principled knowledge embedded in the

selected contents. The idea is to reveal to the learners that existing answers may not be the final or only ones. In this way, pedagogical learning aims at something beyond the existing content. CHAT has an object-focused way of regarding learning by focusing on the principles and structures present in the contradictions. The *object* of an activity system represents the *problem space* that the subject is working on. The activity directs, moulds and transforms into outcomes with the help of symbolic, internal, and external mediating artefacts.

Recognition

In the modern tradition of education to which NAT adheres, the concept of recognition (Anerkennung) is central. In his theory of justice, Fichte (2012) claims that both parties must recognise the other's freedom. In both approaches, the human capacity to learn as well as the learner's own activity are recognised as being decisive for successful learning. Also, conceptual education and learning are, by both approaches, recognised as necessities in a complex world because sole socialisation into and participation in human social practice do not include necessary conceptual clarification of observed phenomena; thus, they risk missing out on a deeper understanding of the very practice itself. In this sense, education is recognised not only as a possible but as a necessary cultural activity.

The Pedagogical Process

NAT describes the pedagogical process through the constitutive concepts of summoning and *bildsamkeit*. It is paramount to realise the non-affirmative nature of pedagogically relevant teaching, as advocated by NAT, which claims that teaching in a non-affirmative manner in a narrow sense means that the learner is being involved in the learning process through their own reflective and experimental activity. In a broad sense, non-affirmatively also includes the idea that the learner is not only learning the content through her activity but also reaching and understanding the principled insight knowledge or theory embedded in the selected teaching. In this sense, NAT embraces the idea of *educational teaching* as developed by Herbart. In a broad understanding of non-affirmative education, teaching in schools should not solely affirm the policies regulating the aims and contents of the curriculum, nor should it affirm the learner's life world or parental interests. Public education in democratic societies supports a teacher's right to question and problematise both a learner's experiences and existing interests in society. Through the such pedagogical activity, schools may create a truly reflective space for learners. Although assuming freedom as a point of departure, NAT argues that non-affirmative education is necessary for the subject to reach and exert cultural and political autonomy, among

and together with other similar subjects. In this respect, NAT represents education in and for a pluralist society (Uljens & Ylimäki, 2017).

As previously observed, CHAT is primarily seen as a theory of organisational learning. In the later versions of the approach, learning as innovation or expansion is at the forefront. Consequently, the approach lacks distinct definitions of the nature of the pedagogical activity. Instead, CHAT regards the concept of *need* as a point of departure for learning. Thus, learning is seen as something expansive that takes place through different steps of contradiction (need state, double bind, resistance) in a dynamic model in order to reach a concrete solution to a problem (Engeström, 1999). When the initial dilemma finds a resolution, the object is renegotiated, and then the cycle begins again. However, we argue that instead of seeing CHAT as an outspoken pedagogical theory (i.e., intervention in a learning process), the cyclic model explaining the relationship between and steps from one phase to another may be read as a conceptualisation of the pedagogical activity itself. No step depicted in the model occurs by any logical necessity; it has to be put into motion. An original need state may of course arise from the practice itself, yet this contradiction must be identified as such. If read this way, the dynamic structure of CHAT reveals itself as a learning process that is driven by sequentially ordered pedagogical initiatives.

The Context of Learning

In our analysis, we have noticed that in both NAT and CHAT, the question of *where* (i.e., not only the *what*-, *how*-, and *why* questions) is of importance. Learning and pedagogical activity cannot be properly understood if they are decontextualised but are differently emphasised. CHAT takes into consideration a multitude of factors that impact different research phenomena and makes the research data empirically accessible (Langemeyer, 2005). This leads to a nuanced empirical analysis and indicates that the learning processes in different contexts can be compared with each other, making knowledge accumulation possible.

On the other hand, a potential risk in the universalistic approach of CHAT is that the same analytical components are applied equally, regardless of the studied learning object, indicating that CHAT does not have an elaborated framework concerning *Bildung*. Both theories argue that learning is undetermined and not necessarily well-defined. NAT states that the pedagogue should act as if someone is already able to do something they have not yet done (Benner, 1987).

While NAT primarily focuses on activities that take place in institutional pedagogical settings framed by a collectively agreed-upon curriculum (i.e., schools), CHAT, in turn, appears to be mostly focused on learning occurring in *any* setting or organisation. In this respect, CHAT is more universal, whereas NAT is more particularist. Yet, CHAT is a highly relevant approach if the focus is on how the school as an organisation changes in terms of learning. The focus would then be turned on teacher's and leader's collaborative culture. CHAT proposes analytical tools for the development of institutionalised education, makes obstacles visible,

and improves ways of creating sustainable change processes (Sannino & Nocon, 2008). In turn, NAT is valid for any such organisational change, in schools or anywhere, that involves pedagogical activity aimed at initiating processes of learning. In this respect, the dynamic cycle of expansive learning in CHAT, operating through the different steps of contradictions, may be interpreted as summoning participants to collaborative and individual self-activity. The notion of *bildsamkeit* would then describe the learners' part of the process.

Cultural and Historical Context

Furthermore, both approaches argue for processes of Bildung and learning being historically grounded given social and cultural settings. The cultural-historical features in CHAT are visible through the concept of historicity and in the lower part of the activity system (e.g. community, rules, division of labour). NAT regards the different societal levels (e.g. education, economics, politics, ethics) from a non-hierarchical vantage point, indicating, for example, that education is neither subordinate nor superordinate in relation to politics. Instead, there is a continuous tension between the societal fields of practise. Sometimes these practises contradicting. In CHAT, this way of thinking is present in the concepts of contradictions within and between activity systems. For unpredictable contradictions to occur, an open dynamic between systems must be assumed. Consequently, CHAT represents an idea of interacting activity systems being non-hierarchical.

In NAT, the pedagogue is perceived as an interpretative or hermeneutic mediator between contextual dimensions and learners. In NAT, the second regulative principle asks how societal interests transform into pedagogical practise, thereby underscoring the importance of carrying out the pedagogical translational activity in such a way that it involves the learner as an active and reflective participant in the process. This relational teaching-studying-learning process (summoning self-activity and *bildsamkeit*) aims for autonomy and culturally productive freedom on the learner's side. In this limited respect, NAT is normative; cultural, political, economic, and personal autonomy is what education in a democracy should aim towards. CHAT does not raise questions of emancipation or normativity that are typical in education theory. Instead, value issues emanate from historicity and local struggle, not from detailed predefined normative rules or goals. Yet, at least indirectly, a normative ambition of voicing participation guides CHAT. It thus seems clear that CHAT operates similarly to and with the same ideals expressed as NAT. In CHAT, plurality is expressed through the concept of multi-voicedness, and such plurality is regarded as the basis in and for a democratic society. According to CHAT, multi-voicedness occurs in different activity systems. Multi-voicedness and contradictions, as concepts, overlap in the sense that multiple voices indicate that contradictions are inevitable (Engeström, 2001). Such a social ontology is coherent with the foundations of NAT. Both approaches seem to consider the plurality of interests between individuals and societal practises as a point of departure as well as

something to be aimed for in a democratic society. Both approaches are emancipatory but in non-affirmative ways, as neither represents a prescriptive or normative critical theory of education externally defining the aims to be reached. While NAT focuses especially on school education, arguing that school learning and teaching differ from other societal forms of learning, CHAT provides an elaborate conceptual system suitable for any learning context.

Epistemological Comparison

By epistemological analysis, we primarily refer to how each approach argues that empirical research may contribute to an increased understanding of education and learning. Given this, the analysis includes research methodology.

In its research, CHAT is more empirically and intervention oriented, considering that the research process itself is a mediating process for studying human development and learning. Generally, a subject within an activity system mediates with the help of artefacts within the activity system. Mediation can be a pedagogical activity depending on both the nature of the activity system and the object, in interventionist research, the research itself operates as a mediating activity. NAT, on the other hand, is not as empirically and methodologically deliberated, and has, up until recent years, focused mainly on theoretical and conceptual development.

The learning process in CHAT often includes the formulation of a clear aim towards which the activity system is working. This aim emanates from how the initial need state is perceived and defined. It is thus crucial to how the contradictions within the components in the activity system are explored and who participates in this process of defining the original problem. As CHAT belongs to a family of developmental work research, this research aims to reach concrete solutions to given problems. The learning process is followed by dividing the organisation into several components that have different impacts on the organisation and the activities taking place within it (Sannino, 2020). The aim is to develop the organisation itself to withstand similar contradictions in the future and to intertwine them into the activity system.

Normativity

A distinction can be made concerning the way the theories discuss the moral dimension of pedagogical activity. In NAT, there is an elaborate framework for handling moral dilemmas, which is visible throughout the descriptions of the core constitutive principles. NAT is about recognising the other as free and validating the other otherness as well as about summoning the learners' self-activity to become a cultural reasoning and self-reflective subject. Conversely, CHAT does not handle

morality as distinctively. Moral issues are indirectly present within the activity system’s *rules*, which include judicial and social rules, among others. The rules are dependent on the context. In this analysis, CHAT is seen as a system theory, making the theory less focused on political and moral questions. Based on this, CHAT does not make explicit any elaborate value framework. It represents a version of systems-oriented analytical structuralism. The handling of morality in CHAT is not transparent when it comes to understanding the concept of rules.

To conclude, the first difference between these theories is that they have different areas of focus, one being the question of normativity, which is the legitimisation of educational influence. NAT focuses on the moral conditions that have to be achieved for a pedagogical intervention to be seen as legitimate. This is the focus of other areas of social practises, for example, health care and therapy (Uljens, 1997). To make visible the similarities and differences in how the theories differ in a normative, ontological and epistemological matter, we have compiled this in Table 11.2.

Table 11.2 Similarities and differences between NAT and CHAT

Research questions	NAT	CHAT
Ontological similarities	ZPD, summoning self-activity and <i>Bildsamkeit</i> describes the same pedagogical process, but does this with divergent concepts. Both include an competent other in order for the learner to self actively acquire new knowledge Both recognises humans as free with a possibility to reach their own voice, Human learning and activity is historical, social and cultural	
Ontological differences	Hermeneutical-pedagogical Regional ontological within institutionalised education Focuses on teaching in schools Focuses on education as a specific societal field Aim of learning is not only to answer a specific question and not to guide the learner towards a specific worldview Teaching aims to reach general abilities, give voice and act according to one’s own and others’ interests (political, cultural and societal autonomy) NAT focuses on questions of who, what, why, where and how from a pedagogical perspective NAT is a theory of the nature of pedagogical activity	Multi-disciplinary with a pedagogical-psychological approach Universal approach applying one conceptual system to any practise Focuses on learning All societal fields are subordinated to rules, community, division of labour and tools within the activity system Aim of learning to solve a specific problem within an activity system through expansive learning CHAT focuses on questions of who, what, why, where and how from a learner’s perspective CHAT is a theory and methodological approach of intervening in and changing any existing human and societal practise

(continued)

Table 11.2 (continued)

Research questions	NAT	CHAT
Epistemological differences	Uses an interpretative and hermeneutical approach Not limited when it comes to empirical research methodology May be used as a theoretical frame for different types of empirical research	Developed analytical and methodical approach to explain specific research phenomena Intervention based with the researcher being a part of the research Analyses human development and learning as mediating processes and develops conceptual tools for understanding contextual factors that shape human action
Question of normativity	NAT states that the pedagogue should act as if someone is already able to do something they have not yet done; this is done through pre-planned pedagogical experiments CHAT states that knowledge and skills are being learned as they are being created CHAT emphasises that learning and the achievement of knowledge are two sides to the same process Neither is guided towards a determined outcome or a specific worldview	
Differences regarding normativity	NAT emphasises how to teach someone something with the goal of making the learner morally and ethically responsible Framework for handling moral dilemmas, visible throughout constitutive principles	CHAT accentuates how an individual learns and does not have an elaborated framework concerning Bildung Focuses on the activity with a clear goal to work towards Morality found within activity systems rules

Concluding Remarks

Before concluding, it is worth mentioning that both theories are constantly evolving. There are, for example, efforts to evolve the fourth generation of activity theory that addresses social and peer production in which the boundaries fade and the distinction between processes and structure is obsolete (Spinuzzi & Guile, 2019). Moreover, efforts to further conceptualise pedagogical interactions have also been conducted through Wells' (2002) work on the importance of dialogue and how semiotic artefacts account for the co-construction of meaning between two or more participants. In NAT, there are efforts to expand upon research approaches to create opportunities for reflections on action theory (Benner et al., 2015). These developments are not taken into account in this article, it is mainly to highlight that theorising is an ever-evolving process that is never completed.

In this study, we set out to investigate how CHAT and NAT position themselves regarding the questions of ontology, normativity, and epistemology. The main emphasis came to be on the question of ontology due to its central character in the theory-praxis dilemma. Both theories highlight the cultural, historical, and

institutional context, as human learning has to be understood in regard to spatial and temporal factors. The activity system, as a model, provides CHAT with a nuanced conceptual apparatus to capture contextual factors. NAT is also sensitive to context, which is evident through regulative principles. These principles raise the question of how societal interests translate into education praxis.

Both theories regard the learner's own activity as pivotal for the learning process. Both consider reaching autonomy and emancipation as the pivotal aim, in order for the individual to be able to act more independently in the world. Both theories are emancipatory, but not in an ideologically loaded sense.

NAT is more of an analytical theory for understanding the nature of pedagogical practitioners' activity and reflections with pedagogical motives. NAT is interested in providing a language for talking about what education is and how pedagogues organise situations and contents that recognise the learner but at the same time challenge learner's abilities, knowledge, and experiences. In NAT, the crucial pedagogical act is an intervention; it is a summoning of the learner's self-activity. In school, teaching *construct* situations where the learner's previous experiences are problematised in order to create a motivational moment is delicate but crucial. As an incentive, the change process in CHAT requires identifying an *existing* contradiction, and the aim is to work, in a goal-oriented fashion, toward a specific outcome and to change praxis. CHAT aims to find out other forms of operational practises that do not continue to raise previously identified contradictions.

To conclude, we see these approaches emanating from similar, modern roots of European educational thinking criticising Kantian transcendental idealism, instead of viewing the empirical Other as the fundamental reference point for human growth. Above, we have pointed out many differences as well. Yet, we see them as both different and congruent enough to inspire each other. For example, we can envisage an approach where we apply NAT to conceptually understand and empirically explore teachers' pedagogical and curricular work with students in a school. However, for understanding and contributing to school development, as well as leadership of such change, we see CHAT as a fruitful approach. In fact, some steps in such a direction exist (Uljen & Smeds-Nylund, 2021). When understanding workplace development, the argument is that we need a theory of the object to be developed. In other words, school development must be built on some conceptual idea of what a school and its activities are like. This does not mean that the participants themselves must share such a theoretical view. Rather, the participants' experiences must be empirically brought to the fore. Nonetheless, we, as researchers, need a conceptual platform for our own intervention. This requires school developmental research to build on education theory. Given that leading school development also contains pedagogical dimensions these need to be pedagogically theorised. We see that NAT provides us with a theory for both of these aspects – understanding teaching and understanding the pedagogical dimension of school leadership activity. Yet, we see that CHAT provides a more elaborate program or concept for designing workplace change processes. We see the various contradictory steps as a version of a non-affirmative summoning of participant's practises. Since both theories are complex and ever-developing, this chapter is perhaps to be seen as

a starting point for a continued dialogue on NAT and CHAT, offering some initial indications of future possibilities within the educational theory.

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