LEARNING OBJECTS AND FOCUS GROUPS ON ZING

Thomas Hansson

Blekinge Institute of Technology, School of Management (MAM)

ABSTRACT

It is an unsettled issue between research traditions how to negotiate the implied rather than acknowledged dispute between individual agency, i.e. the ability, need and urge of an individual to act on/in the world and the functioning of a social system. Relations between people are just as crucial for negotiating a learning object as is the individual initiative. I resolve part of the debate by drawing on a digital classroom tool deployed for facilitating verbal group interaction.

KEYWORDS

Collective, individual, co-construction, learning object, social system, Zing

1. INTRODUCTION

It is useful to know if we are operative agents, initiators and active participants or if we are passive victims of societal change. In clarifying the situation, Roth (2007, p. 40) acknowledges the dialectical as opposed to dualistic relation between individual agency and collective structure. Implied in the concept of agency is that individuals are free, willing and able to act on impressions, support activities and (re)act to people and objects. So, it is a specific human resource to be able to act on personal needs and motives so as to control actions in Self and Other.

The purpose of this study is to explore the potential of some general activity theory concepts deployed for the study of a situated classroom environment. One exception from Vygotsky’s (1987) classical paradigm of “structured situatedness” is that for the current context verbal exchanges are mediated by modern technology. Empirical data are collected from classroom sessions on a computer-based platform. This procedure enables for a study into group processes defined as a vehicle for higher order thinking. By engaging in verbal co-construction (co-operation, communication, co-ordination) of an object, the studied groups of student teachers seem to either learn/identify/explore a “learning object” or remain at a low level of personal, professional, cognitive and social development, merely supplying requested data.

Subjects who struggle during the sessions contribute by self-conscious input of menial information at a low level of object construction. They dutifully complete each step of the process. Those who, on the other hand, contribute to group interactions generate professional (teacher) thinking by the way they instantiate the object of inquiry and the way they act out the necessary discourse for collectively raising the general level of knowledge. During the process of merely interacting with each other to actual transformation of the object, there seems to be a delicate balancing of individual and group needs/motives going on. The options are either provision of self-conscious information or reflected teacher thinking. More specifically, the purpose of studying focus group sessions is to back-track shifts in the situated activity that brings higher order thinking into place. Another purpose is to analyze the discoursed context and learn when/where/how those changes occur. On the one hand it is necessary to elaborate a theory of agency and structure as a result of how individual participants express self-conception and self-management in a context of supplying factual information. On the other hand we need to learn about professional teacher thinking which expands the participants’ knowledge mediated as by a learning object.

2. THE RESEARCHED OBJECT
Long ago, personal chemistry, compatibility of goals, interests or ambitions mystified what goes on when people interact. But concepts like luck, magic or fortune have failed to provide an explanatory basis for the theory and method needed to explore the formation of human activities. It is useful, however, to put into perspective how human activities start off, change and grow, especially so phenomena explored as group dynamics, functioning teams or virtual communities. Expressed differently, research needs to find variables that inspire and/or sustain productive communications between people, more specifically verbal relation-building mechanisms that inspire individuals and social systems to communicate through boundary objects. The medium for this study is a “transformative artifact” or a soft- and hardware called Zing. It provides an interactive context for the users to share physical, social, emotional and cognitive experiences. Following Van Oers (1998, p. 137), Zing is: “a result of a personal (mental) or social act of interpretation of an activity setting (contextualizing), trying to bring the determining factors under control.”

But it would also prove relevant to study if general activity theory (Engeström 1987) applies as an analytic resource for describing the catalyst mechanisms that inspire and/or sustain an emerging professional teacher discourse during focus group sessions. On this note, Nardi (2007, p. 6) says Raethel (1996) defines co-construction of a shared object like verbal discourse as “re-definition of the object of collective activity.” Kapteinin & Nardi (2006) say co-construction equals the traditional process of finding out what the teacher expects of the students (object construction) and learning how the students should go about realizing (object instantiation) the teacher’s expectations.

### 2.1 The Object of Activity

Before we can grasp a relevant theory for understanding how student teachers construct learning objects it is necessary to introduce “relations” plus the “object of activity” to the framework. With an eye to individual consciousness about the existence of Self, Vygotsky (1994, p. 19) emphasized interaction between objects and people, citing Karl Marx (1990): “My relationship to my environment […] is my consciousness”. A complementary note on the quote suggests that agency relates to systems thinking, in a similar way to how internal relates to external and the individual relates to the collective. So emphasis is on the importance of agency in human development. But one would rather have an explanation which focuses on a transformational move from agency to structured activity. Galperin says (Ariveitch, 2003, p. 279) that it is important to analyze the “culturally constructed nature of mind without losing the aspect of individual psychological functioning.” It is however an unsolved problem (ibid, p. 281) for Marx and Vygotsky equally how “mental, psychological emerges out of material, nonpsychological.” Another suggestion by Galperin (ibid., p. 284) decisively points to the need to envision a transitional move, because people should “understand individual mental development as the gradual internalization and transformation of socially constructed shared activities.” By pointing to the object-relatedness of human activity, Galperin (ibid., p. 286) on the other hand, sees a way to “eliminate the dualism of mental and material, external and internal processes.” A synthesizing solution to the dichotomy would be Garrison’s (2001, p. 288) response to Miettinen’s (1999) exploration of Dewey’s (1952/1989) understanding of dual relations between internalization and externalization of objects/objectives, saying:”objects never lose their event quality”. In complementing epistemological (transaction by versus interaction with) dualisms like agency-structure, personal mastery-systems thinking or symbolic-material, Kapteinin & Nardi (2006, p. 143) opt for the “object of activity” and Wertsch (1998) offers mediated action as a synthesis to the implied ‘dispute’ between approaches. When an agent acts with a culturally developed mediating tool like Zing a special dynamics sets in motion. It is the kind of dialectic that inspires the researcher to go beyond analysis, i.e. comparing, abstracting and generalizing the individual agent. Then the researcher can understand the forces that shape human action. For this study the object of activity is to promote an understanding of balances between agency and the social.

### 2.2 The Software

Zing is a combined soft- and hardware tool facilitating situated activities. It enables for the teacher to visualize participant input on a big screen in the classroom and communicate (ask, explain, clarify, summarize) contents with the group. The software supports meta-cognitive processes and sense making by mediating interaction. The tool provides a good design for visual, oral and tacit guidance and execution on
operations. Zing users can appropriate the technology for teaching and learning, data collection, consultancy, interrogation, therapy or other. Basically any situation where spoken (direct) and written (reflected) queries are produced (negotiated) and collected (saved) provides an opportunity. Zing is an activity and a context, a rather straightforward and self-explaining concept/object/tool/artifact. Engeström’s (2007, p. 36) ideal of “overarching concepts and visions are typically not considered as part of the technology.” Such preempted qualities in Zing would equal control by objectives – an ideal much too close to classic conditioning and thus far from useful for studying learning objects. However, it is possible to calculate the semantics of automatically saved text logs and extract “overarching concepts and visions” from individual entries on Zing.

Individual student teacher operations facilitate (inter)actions characterized as mediated discourse. According to Wells (2007, p. 164) “the discourse ensures that all participants are working toward the same goal and are coordinating their individual actions and their use of mediating artifacts to use it.” A subsequent conclusion is that human development – as a result of interaction – is based on appropriation and internalization of material and symbolic cultural tools provided that people engage in an “object-related meaningful activity” (Arievitch, 2003, p. 280). Zing makes operational a communication process for collecting data because (ibid, p. 280) there is “material transformation” of the situation that instantiate the object. In the lucky cases fluent sessions enable for the participants to transcend their expectations and objectives by means of the evolutionary conditions of social interaction, e.g. transmission and transformation of the most apparent objective which is to supply-collect-generate data on the use of computers at school for a national Australian survey. During such sessions, the software transforms the users – provided activities are supported by a competent facilitator – into technologically empowered agents and socially competent peers.

3. METHODOLOGY

For this study, student teachers report by means of 60 minute Zing-sessions on their working life experience of a Practicum in local Australian schools. One of the studied focus groups comprised of six student teachers at Charles Sturt University in Wagga on October 10, 2008. The other group comprised of two foreign student teachers at Flinders University in Adelaide on October 20, 2008. The study focuses on broad patterns of behavior as registered through direct observation combined with log data. The study is an attempt at clarifying interactive processes from the users’ point of view. According to Nardi (1996, p. 95), research for producing data should study when a learning object acquires its characteristics, identify the main contradictions and trace the development of the social system – an emerging result of how the participants deal with the dialectics/dualisms of natural contradictions.

It matters a lot how we perceive of individual agents. We need to learn how facilitators’ and student teachers’ relational qualities like strategy, familiarity, antagonism or persistence inspire collectives of individuals to maintain discussions and create long exchanges. It could well be the other way around: the decoding of individual qualities by input-process-feedback enables for analysis of the social system rather than the learning object, but it makes little difference how we define the process.

As far as the implications of Zing sessions are concerned, Wartofsky (1979) outlines a typology of artifacts, primarily for understanding human creativity. Here the typology is deployed for demonstrating the software as a means for creating cognitions, primarily those related to data collection and object co-construction. This is the general outline for analyzing focus group sessions between facilitator and student teachers: The primary artifact is the equipment (keyboards, lap top, cables, video-canon and router). The secondary artifact is the functioning of the equipment plus working routines surrounding it for transmitting the skills that the student teachers demonstrate in producing the sought discourse, orally and in writing. The tertiary artifact transcends the practical processes and realities of the studied “world”. They create possibilities for future-oriented activities, like for example methods for teaching and learning with modern technology. Bødker (1991) takes onboard a similar perspective based on issues of transparency, affordance and agency. But one purpose of this article is to narrow down the theoretical scope of agency vs. systems thinking. The other purpose is to identify how learning objects are brought about. In order to respond to both purposes, Table 1 describes sought qualities where the first layer describes “mediation”, the second “usage”, the third “agency” and the final “mental processes”. Table 1 identifies the focused object of research (circle). Forthcoming analyses of the affordances of the system are at Logical structure of interaction plus Delegated agency levels.
The subjects pay attention to the task at hand in a cooperative, mediating verbal interactions were supported by “individual agency” towards problems with sub-goals or self-consciousness and self-mastery (SC/SM). It seems equally reasonable to assume that during (co-)construction of the object, the subjects pay attention to the task at hand in a self-conscious (SC/SM) way. During instantiation of the object - on the other hand - the subjects devote their attention to the organization or arguments, statements and/or questions whilst applying higher order scientific professional teacher thinking (S/PTT) about future applications in local schools. It seems equally reasonable to assume that during processes of instantiation the student teachers apply “discursive mediation” so as to share and improve on their beliefs, values and intentions, in short their professional identity. This process is closed for direct perception among the students but instantiation of the object is interpreted during the ongoing, expanding and situated one-hour discourse. Finally, while discoursing between the students is the mediating means for SC/SM- and S/PTT-processes, concrete language utterances is the goal for the facilitator. Table 2 indicates influences, foci and cognitions that act on the student teachers shared discourse.

Table 2. Individual-collective-individual (object) internalization and externalization

<table>
<thead>
<tr>
<th>Define the theme</th>
<th>Construct the object</th>
<th>Instantiate the object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ritual</td>
<td>Group dynamics</td>
<td>Personal motive</td>
</tr>
<tr>
<td>Learn about the theme</td>
<td>Stick to the theme</td>
<td>Expand the theme</td>
</tr>
<tr>
<td>Intuitive</td>
<td>Self Conscious (SC/SM)</td>
<td>Professional teacher thinking (S/PTT)</td>
</tr>
<tr>
<td>Tradition/culture</td>
<td>Social relations</td>
<td>Identity</td>
</tr>
</tbody>
</table>

Table 2 clarifies the implications of a renowned quotation regarding the dualism of agency versus social construction of meaning. The quote demonstrates an expansive context for providing a general law over the construction of higher mental functions (italics by this author). Vygotsky’s (1998, p. 169) says: Every function in the cultural development of the child appears on the stage twice, in two forms – at first as social, then as psychological; at first as a form of cooperation between people, as a group, an intermental category, then as a means of individual behavior, as an intramental category.

Vygotsky’s (1997, p. 165) fourfold categorization of human becoming is a comprehensive heuristic that builds on historical aspects of development. They include phases of time, contexts and history, first (i) by unconscious reflexes and then (ii) consciousness of objects. Two focus groups of student teachers were explored through a third phase describing (iii) self-consciousness and self-mastery (SC/SM) and finally (iv) scientific/professional teacher thinking (S/PTT). There are assumptions related to the studied contexts and subjects. The first one suggests that if contextual learning were supported by “individual agency” the outcome would remain at a self-conscious level. The second assumption suggests that if learning were supported by “collective agency” the outcome would be professional teacher thinking. Levels (iii) SC/SM and (iv) S/PTT are clarified as key principles for operating, understanding, explaining and describing social activities (Pedler, Burgoyne & Brook, 2005, p. 10) for co-configuration of learning objects. Level (iii) applies for actions related to personal development as the result of reflection on action and discoursed work directed towards problems with the right answers. For the higher (iv) scientific/professional teacher thinking level (S/PTT) there is a need for work in groups of peers to search for puzzles without a ‘correct’ answer.
4. DISCUSSION

On the one hand, the individual agent engages in object-oriented activity, seeking fulfillment of her/his motives and needs. On the other hand, some individuals/social systems seem to supply sterile data according to a pre-set blueprint. But the mechanisms for understanding how the individual’s inter-mental world is transformed by SC/SM input and how the peers’ intra-mental world is influenced by S/PTT-entries remains a mystery. The Wagga group all find it collectively rational to listen to, moderate and adapt to the given theme. Due to language difficulties, participants of the Adelaide group positioned their verbal input at a level which was rational from an individual perspective alone, i.e. they provided the sought data to the system by referring to themselves rather than to their profession.

It seems as if any form of tool mediated activity - as opposed to social activity - operates as a means for achieving the goal of a particular action. However in the lucky here-and-now cases when participants interact effectively, goals tend to go beyond the interlocutors’ expectations. In the unfortunate cases, goals are never reached, problems remain unsolved and challenges are left unattended. It is reasonable to assume that such failure is caused by an inability in the subjects to (i) express, (ii) take on and (iii) carry out challenging intentions. Mediation of intentions by means of a shared discourse differs in the studied cases from tool (Zing) mediation, which so far has been the most frequently studied context. This fact carries some implications. First of all, we must conceive of the trajectory of (relational) object construction, object instantiation (co-construction) and object transformation (discoursing). Second, research needs to focus on contextualized, verbal activities, and especially from a perspective of how agents’ process their intentions. Third, discoursing should be understood as a fluid context and as a means for obtaining a shared objective.

A tentative answer to initial assumptions suggests that interaction between focus group participants defines transactions between the subjects rather than transformation of material utterances and texts. The observed and recorded verbal activity in the Wagga group is characterized by emphasis on a social language. The operations of the keyboard, the free-floating language and the oral rhetoric between the students are automatic rather than deliberately planned. The subjects realize that their interpretation of the mediating situation as well as their verbal group utterances influences the outcome of learning related to the (learning) object. This is a direct opposite of the stereotypical achievement one would expect of the facilitator’s instrumental input: “type it, use your keyboards, write it down, let’s see, what have we got here”.

In the Adelaide group the discourse turned out an instrumental linguistic activity (tool mediation) for construing intelligible meaning. Obviously, every interactive operation (listening-talking-writing-reading) takes a toll on the subjects’ attention. For the less successful interactions the expected content of student input is more important than the subjects’ need to expand a fuzzy learning object.

In deciding between collective or individual rationality, it is usually a wise move for the individual to act from a systems perspective on human relations. Neither the individual student teacher nor the collective focus group can outline the potential for expansive learning during sessions where individuals of a social system co-construct a shared learning object. It is rather the individual(s) within the group who control the collective development of higher mental functions for all team members.

It is usually easy to see why a certain behavior is rational for the individual, e.g. to supply verbal input during a session. Here, self-enhancement comes naturally whereas professional teacher thinking seems difficult to perform. The studied contexts merely inspire provision of (raw) data. However, should every focus group member stop at providing data, very little positive group dynamics would emerge. So why do some individuals find it rational to supply professional teacher thinking when all that has been agreed on is to retell their experiences of Practicum in local schools? It remains a mystery by what inter- or intrapersonal means some student teachers choose to balance their verbal input so that co-construction of a learning object becomes collectively rational.

5. CONCLUSION

On a rather intuitive basis, people construct, transform and instantiate learning objects, regardless if they were instructed to merely supply answers to the facilitator’s questions on their school experiences. This text covers differences between collective and individual input to human activity systems. The concluding theme of a tripartite division of the research object (individual-collective-individual in group) focuses on verbal
mediation between social intentions defined as an on-site relation-building discourse, which follow the same rules as people do in collectively co-constructing a shared object on a digital platform. This study took off with an objective to separate between individual and collective influences on human behavior. In talking about collectively co-constructed and shared togetherness it would seem foolish to refer to the actions of a sole individual. It would be equally foolish to refer to an aggregate of individual actors involved in an activity. But it would be wise to refer to pro-active individuals in a responsive group of peers. Also, it would seem fair to suggest that the mediating tool and the social context define the studied collective(s) of student teachers and the contents of their learning objects. Consequently, a relevant focus of future research would be to study the effect of mediating software for promoting a collective sense of professional teacher thinking.

REFERENCES


