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A theory of online learning as online participation

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ABSTRACT

In this paper, an initial theory of online learning as online participation is suggested. It is argued that online learner participation (1) is a complex process of taking part and maintaining relations with others, (2) is supported by physical and psychological tools, (3) is not synonymous with talking or writing, and (4) is supported by all kinds of engaging activities. Participation and learning are argued to be inseparable and jointly constituting. The implication of the theory is straightforward: If we want to enhance online learning, we need to enhance online learner participation.

1. Introduction

There are many different theoretical perspectives on learning although it has been acknowledged that many of the theories that have emerged during the 1990s share many assumptions and common foundations (Jonassen & Land, 2000). Nowadays, most researchers agree that knowledge not only exists in individual minds but also "in the discourse among individuals, the social relationships that bind them, the physical artefacts that they use and produce, and the theories, models and methods they use to produce them" (Jonassen & Land, 2000).

In the beginning of the 1990s, constructivist theories on learning gained popularity. The argument of constructivism is that there is no correct "meaning" of the world that we are striving to understand. Instead, it is argued that there are many ways to structure the world, and there are many meanings or perspectives for any event or concept (Duffy & Jonassen, 1992). Constructivist models assume that the main objective of teachers should be to support learners in gaining experiences rather than aiming to transfer "knowledge objects" from the teacher to the learner (Säljö, 2000). Thus, constructivist theories have moved away from objectivist knowledge transmission models towards active learner models. However, like objectivism, constructivism has commonly considered the learner as an individual who learns in isolation from others (Edelson, Pea, & Gomez, 1996).

More recently, research has been increasingly inspired by social perspectives on learning (e.g., Säljö, 2000; Vygotsky, 1978; Wenger, 1998). Such theories emphasize that learning is dialogue, both internal and by social negotiation (Jonassen & Land, 2000). Rather than being solely based on experience with the physical world, the construction of knowledge and understanding is seen as a fundamentally social activity (Littleton & Häkkinen, 1999). There exists different perspectives but the most common ones share a focus on participation as a condition for learning (Jaldemark, Lindberg, & Olofsson, 2006).

Most researchers have abandoned objectivist views of learning. A vast majority of recent research on online learning is inspired by constructivist and social learning theories. It is sometimes argued that the constructivist and social perspectives are complementary, and that the two types of theories inform each other. Scholars have questioned the need to take sides between constructivist and social perspectives (Cobb, 1994; Sfard, 1998). Cobb argues that the "sociocultural perspective informs theories of the conditions for the possibility of learning, whereas theories developed from the constructivist perspective focus on what students learn and the processes by which they do so".

In this paper, I argue that online participation underlies online learning in a more powerful way than any other variable we are currently aware of. Consequently, if we are to understand online learning, we need a learning theory that views online learning as online participation. Currently, the term online participation has mainly been used and developed by subscribers of social perspectives of learning. In explaining why online participation underlies online learning and what online learner participation actually is, I will therefore depart from the social perspective on learning. It needs to be acknowledged that studying participation from, for example, constructivist perspectives would probably have provided complementing insights (Jaldemark, Lindberg, & Olofsson, 2005).

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Learning as participation in the social world is at the core of Lave and Wenger's (1991) theory of learning, a theory that is further elaborated on in Wenger (1998). Social learning theories stress that learning occurs in interaction with others and that learning is an aspect of all human activities (Säljö, 2000) and underline that learning and participation are not separate activities that can be turned on and off (Wenger, 1998). Thus, students are not students just while they are in the classroom. It is widely acknowledged that students learn and support each other both inside and outside the classroom (Brown & Duguid, 1996; Rovai, Wighting, & Lucking, 2004). In fact, most learning in higher education occurs outside the classroom (Ramsden, 1992). Social learning theories view learning as inseparable from the day-to-day practices that people carry out in their studies and work (Hislop, 2006).

The paper is organized as follows: Next, empirical evidence that shows that online participation drives online learning is presented. In the third and fourth sections, it is discussed what online learner participation actually is and how it may be conceptualized. Finally, the paper is concluded.

2. Online participation drives online learning: Empirical evidence

In this section, I motivate the key argument of this paper, i.e. that online participation drives online learning. The benefits of online learner participation, including positive effects on learning, and other variables such as satisfaction and retention (Alavi & Dufner, 2005; Rovai, 2002), are almost taken for granted. For example, some researchers write that participation is necessary or that it enhances learning without referring to any studies that support such statements (e.g., Brown & Duguid, 1996; Williams, Paprock, & Covington, 1999).

The superiority of participation by interacting with others as compared with individualistic approaches has been documented in numerous empirical studies in traditional settings (for reviews see Alavi, 1994; Brown & Palincsar, 1989). These benefits include spending more time synthesizing and integrating ideas and concepts, and promotion of problem solving, critical and active thinking skills. In a meta-analysis of 164 studies on cooperative learning, which included 194 independent effect sizes on academic achievement, it was concluded that cooperation among learners has a significant positive impact on achievement (Johnson, Johnson, & Stanne, 2000). Achievement was defined as an outcome measure for some type of performance (e.g., tests, grades, quality of performances and quality of products). Moreover, in a study that included 82 different learning outcome measures, it was concluded that "the greater the interaction with peers, the more favorable the outcome" (Astin, 1996).

Research has argued that online learning is best accomplished when learners participate and collaborate (e.g., Bento & Schuster, 2003; Leidner & Jarvenpaa, 1995; Webster & Hackley, 1997). There is convincing empirical evidence that supports such statements. In a survey completed by 1406 online learners at the State University of New York, it was concluded that the results that stand out most clearly for learning effectiveness were: (1) interaction with the teachers; (2) levels of participation compared to classroom; and (3) interaction with classmates (Fredericksen, Picket, Shea, Pelz, & Swan, 2000). Learning effectiveness was measured as perceived learning by students.

Based on three studies conducted over five years on 26 online courses at the New Jersey Institute of Technology, it was concluded that learners who participated in collaborative or group learning were related with as high or higher learning outcomes as those in traditional settings. However, when "simply receiving posted material and sending back individual work, the results are poorer than in traditional classrooms" (Hiltz, Coppola, Rotter, Turoff, & Benbunan-Fich, 2000, p. 120). Learning outcomes were measured as perceived learning by students and teachers, grades and quality assessment of assignments.

Morris, Finnegan, and Sz-Shyan (2005) study may give a more detailed view of the influence of online participation on learning outcomes, measured as final grade. The study was based on 354 online learners at the University of Georgia. Four frequency variables (e.g., number of written discussion posts) and four duration variables (e.g., seconds spent viewing content pages) explained 31% of the variability of grades. Three of these variables were statistically significant and, thus, good predictors of final grade; number of discussion posts viewed, number of content pages viewed and seconds viewing discussions. These results underline that research should not rely solely on the number of contributed postings as a measure of online participation. In sum, the research reviewed here suggests that online participation drives better learning outcomes, at least when learning is measured as perceived learning, grades, tests, and quality of performances and assignments.

3. What is online learner participation?

In developing a theory of online learning as online participation, we need a thorough understanding of what online learner participation actually is. Based on such an understanding, we would then be able to design for online learner participation. In this paper, I mainly draw on Wenger's (1998) conceptualization of participation. His definition falls within common use as exemplified by Webster's definition: "To have or take a part or share with others (in some activity, enterprise, etc.)". Wenger refers to participation as "a process of taking part and also to the relations with others that reflect this process". It is a complex process that includes, for example, doing, talking, thinking, feeling and belonging. Participation involves action, e.g., talking with someone, and connection, e.g., feeling that one takes part.

The importance of online learner participation has been emphasized for quite a long time in traditional education (e.g., Pratton & Hales, 1986), especially when such education is inspired by constructivist and social learning theories. Distance learners have traditionally studied more independently because of technical limitations. However, ever since online education emerged (Harasim, 1989), participation has received more attention. It is widely agreed upon that it is critical to enhance participation in online education. Paradoxally, current conceptualizations of participation differ considerably – researchers seem to agree on the importance of online participation even though they do not agree upon the meaning of the concept.

Moore (1989) has distinguished three types of interaction: learner–instructor, learner–content and learner–learner interaction, which illustrate ways online participation may be supported. Another key dimension of participation is internal dialogue, such as thinking and reflecting (Holmberg, 1989). Participation is supported in many other ways in the other contexts the learner is part of, since participation and learning cannot be turned off when the learner leaves the educational arena (e.g., during evenings and weekends). For example, Haythornthwaite and Kazmer (2002) showed that support from family and colleagues are essential for professionals enrolled in online courses.

When reviewing the literature, it is evident that online learner participation has been conceptualized in different ways (Hrastinski, forthcoming). What I call low-level conceptions of online participation include research that refers to participation as something "simple"

that can easily be measured by quantitative means, such as the number of times a learner accesses software used for educational purposes (e.g., Davies & Graff, 2005) or the number of messages learners read or write (e.g., Lipponen, Rahikainen, Lallimo, & Hakkarainen, 2003). The following definition is typical for such approaches: "One can define at least two forms of participation in CSCL [computer-supported collaborative learning] environments: writing notes and reading notes ('lurking')" (Lipponen et al., 2003, p. 492).

High-level conceptions of online learner participation encompass low-level conceptions but emphasize that participation is a complex phenomenon. Inspired by social perspectives on learning, such conceptions acknowledge that participation is not something learners can turn on and off (Wenger, 1998). Thus, learners are participating not only during times when they are, for example, writing or reading messages. From this perspective, it can be argued that learner perceptions are of key importance in understanding online participation. The following definitions, which are similar to Wenger's (1998) definition of participation that underlie this thesis, acknowledges the complexity of online learner participation:

"In this article, the authors define participation as taking part and joining in a dialogue for engaged and active learning. Participation is more than the total number of student postings in a discussion forum". (Vonderwell & Zachariah, 2005)

"Online learner participation is a process of learning by taking part and maintaining relations with others. It is a complex process comprising doing, communicating, thinking, feeling and belonging, which occurs both online and offline". (Hrastinski forthcoming)

In the next section, I suggest key dimensions of high-level conceptions of online participation.

4. Conceptualizing of online learner participation

If subscribing to a theory of online learning as online participation, it is essential to reflect on what online participation actually is. In this section, I suggest key characteristics of online learner participation.

4.1. Participation is a complex process of taking part and maintaining relations with others

Wenger's (1998) definition of participation partly overlaps with what is referred to as sense of community in the literature. In fact, some have described participation as belonging to a community (Jaldemark et al., 2006). Participating in and feeling attached to a group is a central aspect of sense of community. People who have a strong attachment to a group are more likely to participate and help others. Conversely, participating and helping others drive group attachment (Wellman & Gulia, 1999). Likewise, Palloff and Pratt (2005) have argued that collaboration and community are dual processes. Thus, when researching online learner participation the importance of group attachment should not be forgotten.

In a review that includes definitions of community, Rovai (2002) identified the most essential elements of community: "mutual interdependence among members, sense of belonging, connectedness, spirit, trust, interactivity, common expectations, shared values and goals, and overlapping histories among members". A difference from Wenger's definition of participation is that Rovai only uses positive terms when describing sense of community. Wenger, however, has acknowledged that participation in a community involves all kinds of relations, i.e. "conflictual as well as harmonious, intimate as well as political, competitive as well as cooperative" (Wenger, 1998). It is clear that participation and sense of community are related, although the similarities and differences between the concepts will need to be further explored in future research.

The term learning communities is also commonly used in the literature and has been defined as "a limited number of people who share common goals and a common culture" (Johnson & Johnson, 1999). Palloff and Pratt (2005) have described the relationship between community and collaboration as cyclical: "collaboration supports the creation of community and community supports the ability to collaborate". Learning communities work together; learn from each other and from the surrounding culture and environment (Wilson, 1996). The term online learning communities underscores that learning communities may, and often are, mediated online (Carlén & Jobring, 2005). Another influential concept is that of knowledge-building communities, which accentuates that the purpose of learning communities should be to increase the collective knowledge by contributing beyond what is already known (Scardamalia & Bereiter, 1996).

Factoring the above, the concepts of sense of community, learning communities and knowledge-building communities are closely related with learning as participation. However, this relationship is complex and depends on how each of the concepts is defined. Moreover, participation might include conflictual and competitive relations (Wenger, 1998), while such relations were not mentioned in the definitions reviewed above.

4.2. Participation is supported by physical and psychological tools

Throughout the history of technological developments, humans have been creating technologies that have changed how we communicate and use intellectual resources (Säljö, 1999). A recent technology that has made it possible to communicate over a distance easier, quicker and cheaper is the Internet. Säljö (1999) argues that people learn by making use of artifacts and opposes traditional approaches to understanding learning, which "treat knowledge and skill as if people were not operating with tools when solving problems and when managing social activities". Vygotsky (1978) distinguished two types of tools, physical and psychological tools. In most situations, physical tools (e.g., computer) help people to accomplish their goals. Psychological tools (e.g., language) are usually used together with physical tools. For example, when using a computer connected to the Internet with appropriate software (physical tool) it is possible to communicate with others by using language (psychological tool). Online learner participation occurs at the nexus of physical and psychological tools. It is not enough to introduce a physical tool, such as software, since participation do not occur until we also support psychological tools, such as exercises that learners find engaging.

Language and communication are prominent features of human knowledge and learning: "to a significant extent [knowledge] is created in such interactions when we convert our experiences and reflections into language and make them public" (Säljö, 1999). By using language, humans have a unique way of sharing experiences with each other. An influential concept within the sociocultural school is the Zone of Proximal Development (Vygotsky, 1978). It emphasizes that by interacting with someone who is more experienced, such as a teacher or a more skilled peer, someone can complete more advanced tasks and, thus, learn or develop more than she could have done by herself. "We

can ask others, and we constantly borrow and exchange information, knowledge and skills in interaction with others" (Säljö, 2000, my translation). Thus, the language is the link between the external (communication) and the internal (thinking) (Säljö, 2000).

Traditionally, the importance of communication has often been neglected in correspondence studies and distance education since the emphasis has been on self-directed learning. However, in online education, the Internet has made it possible for learners and teachers to interact more frequently. Thus, the introduction of physical tools (e.g., a computer with internet connection and conference software) has made it possible to communicate more frequently with peers and teachers, which in turn enables learners and teachers to share more experiences and information, and engage in collaborative work.

4.3. Participation is not synonymous with talking or writing

Participation occurs on both personal and social levels. Thus, it should be clarified that we may participate socially even at times when we are not engaged in a conversation with someone:

"From [Wenger's] perspective our engagement with the world is social, even when it does not clearly involve interactions with others. Being in a hotel room by yourself preparing a set of slides for a presentation the next morning may not seem like a particularly social event, yet its meaning is fundamentally social. Not only is the audience there with you as you attempt to make your points understandable to them, but your colleagues are there too, looking over your shoulder, as it were, representing for you your sense of accountability to the professional standards of your community. A child doing homework, a doctor making a decision, a traveler reading a book – all these activities implicitly involve other people who may not be present". (Wenger, 1998, p. 55)

The quote above illustrates the complexity of analyzing online participation when departing from social theories on learning. It illustrates that participation is not tantamount to, for example, talking or writing. However, in research simple measures are commonly used. For example, participation in online discussions is often assessed by using quantitative measures such as how many messages learners have posted in a discussion board (e.g., Mazzolini & Maddison, 2003). Romiszowski and Mason (2004) argue that there is an assumption in research, which seldom is challenged, that infrequent contributors are "passive recipients rather than actively engaged in learning". Much reading is not passive since it may encompass engagement, thought and reflection. As should be clear from the discussion above, participating by talking or writing should only be considered as one aspect of online learner participation. This is reflected by two of Kolb (1984) four basic learning modes: abstract conceptualization, which emphasizes thinking, and reflective observation, which emphasizes understanding. Consequently, relying solely on simplistic quantitative measures, such as counting the number of messages learners write, when researching online learner participation is not sufficient.

4.4. Participation is supported by all kinds of engaging activities

The assumption that underlies this paper, that online learner participation drives learning, is also supported by cooperative and collaborative learning theories. The basis of collaborative learning is that learning is social rather than individual (Bonk & Cunningham, 1998). Littleton and Häkkinen (1999) argue that "collaboration involves the construction of meaning with others and can be characterized by a joint commitment to a shared goal" and Dillenbourg (1999) that it is "a situation in which two or more people learn or attempt to learn something together". However, participation should not be regarded as equivalent to cooperation or collaboration, because "participation may involve all kinds of relations, conflictual as well as harmonious, intimate as well as political, competitive as well as cooperative (Wenger, 1998). As mentioned above, Wenger refers to participation as "a process of taking part and also to the relations with others that reflect this process". It is a complex process that includes, for example, doing, talking, thinking, feeling and belonging. In short, participation involves everything we do and feel when being part of engaging experiences.

5. Conclusion

In this paper, an initial theory of online learning as online participation has been proposed. Researchers are encouraged to criticize, refine and extend the theory. If departing from the suggested theory, online learning is viewed as online participation. Participation and learning are argued to be inseparable and jointly constituting. That is, if we want to enhance online learning, we need to enhance online learner participation. I have argued that online learner participation (1) is a complex process of taking part and maintaining relations with others, (2) is supported by physical and psychological tools, (3) is not synonymous with talking or writing, and (4) is supported by all kinds of engaging activities. The implication of the theory of online learning as online participation is straightforward: If we want to enhance online learning, we need to enhance online learner participation.

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