Digital Inclusion in Social Contexts: A Perspective to the Use of Mobile Technologies

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Abstract: The aim of this paper is to describe an approach to support learning for digital inclusion that addresses issues of contemporary theories of learning and knowledge in relation to the role of the context and activity in learning. According to these theories, meaningful learning develops from constructive activity in a context which is an inseparable part of what is learned. Moreover, learning for digital inclusion is viewed much more as learning to participate in a community of knowledge than as learning to acquire a body of knowledge. Following from these views, our methodology builds on the notions of social context and authentic activity to provide an approach to learning for digital inclusion in which learning is situated in the social context of the learners, and learning activities are based on the development of projects that are meaningful in this context. The focus of the paper is on the description of the methodology, which we are applying to a project of promoting learning for digital inclusion in poor rural communities of the Brazilian northwestern region. The paper ends with a discussion of some implications of contemporary theories of learning, particularly in relation to the role of the context and activity in learning, to the use of mobile technologies for digital inclusion.

Keywords: digital inclusion, social context, situated learning, learning portals, mobile technologies.

1. Introduction

According to contemporary theories of learning, the social and physical context of the situation in which learning takes place is an integral part of what is learned in the situation, and is what makes learning in the situation meaningful. These theories also emphasize the central role of constructive activity in meaningful learning. In addition, according to a situated learning perspective, learning is a matter of constructing an identity and of participating in a community of practice, so that learners can develop the capacity to act as members of the community in which this knowledge is situated and meaningful (Brown, Collins and Duguid, 1989; Lave and Wenger, 1991).

Therefore, in order to provide a productive learning environment, the context of the learning activities, in addition to the content and dynamics of these activities, should be an issue to be carefully considered in the design of the learning environment. For example, studies that compared the conditions in which learning develops in school with those that are present when learning happens out of school have pointed out to the importance of learning in authentic situations (Resnick, 1987).

Authentic situations are situations that take into consideration the activities that people develop in the real life contexts in which the knowledge learned is applied, so that learners can understand the generative power of the items of knowledge that they are learning (Greeno, 1989; Brown, Collins and Duguid, 1989).

In our work to support learning for digital inclusion we have taken a theoretical perspective that is in line with these views of learning, and have developed an approach in which learning for digital inclusion occurs in authentic situations.

In these situations, learners will learn information technology languages and ways of expressing information in these languages, through the development of information technology

projects that address real problems of their community. One of the central aspects of media emphasized in these projects is the use of audiovisuals which allows to address contextual aspects (social, cultural and physical) in more effective ways.

In the next sections an application of this approach to promoting learning for digital inclusion in poor rural communities of the Brazilian northwestern region, is briefly described.

2. Social contexts and authentic activities in learning for digital inclusion

In our approach to digital inclusion we involve the students in the development of information technology projects in which they can learn information technology languages and become able to express themselves in these languages. In the program that we are developing in the Brazilian northwestern region, the language they will learn is HTML and the projects in which the students will work to learn the language include the development of prototypes of learning portals in a subject that is relevant to the social context in which the students live.

The students come from poor rural communities in a region that has a potential for the development of an agriculture that can be used for the production of biodiesel, which is viewed as a way of generating income and promoting social inclusion to these communities. A program of training farmers to cultivate plants that can be used to produce oil is being developed in the region as part of a government plan to increase the production of renewable sources of energy by small farms in order to provide social inclusion. This is the social context of the community in which our program of digital inclusion will be applied.

In this context, the prototypes of learning portals that the learners will be developing to learn HTML will be based on the training that will be given to the farmers in the new agricultural techniques. To be used as part of the content of these learning portals, we will produce audiovisuals of the training program during its development, with the participation of the students.

This will provide authentic situations (the training of farmers of the community in the new agricultural techniques) and constructive activities (the building of real learning portals in a real context, in order to learn HTML, rather than learning through lectures and exercises).

3. Building learning portals to digital inclusion in communities of the Brazilian northwest

The technology that we will be using to develop the learning program includes wireless notebooks, as there will be little infrastructure to install a classroom with desktop computers in the places where the rural communities are located. In addition, most of the information acquisition for the design of the portals will be made in the field, during the training of farmers in the new agricultural techniques, where the audiovisuals will be produced.

The whole program of learning for digital inclusion will take one year to be applied in a rural community of the northwestern region and the plan includes a second year in which another more distant rural community will be reached. Some of the main activities that are planned to be developed in the program, are:
1) Obtain information to the development of the learning portals, which will involve the students and the farmers working together, as well as the agriculture instructors.
2) Produce audiovisuals about the subject, integrated with the training program.
3) Development of the prototypes of learning portals by the students, following an introductory course on the HTML language.
4) Expose the prototypes of learning portals to use by people to obtain feedback.

4. Conclusion: socially situated digital inclusion and mobile technologies

This paper outlines an approach to learning for digital inclusion which takes into consideration the social context of the learners and is based on constructive activities.

With regard to addressing the social context in digital inclusion programs, part of the potential of mobile technologies lies in the possibility of taking the technologies to remote locations (for example, rural communities), allowing the development of learning projects in authentic situations and providing access to information in the social contexts of the learners.

On the other hand, a focus on project-based constructive activities may bring some challenges to the use of mobile technologies, as it will require an interface that supports not only access to information but also ways of interaction that allow constructive activities.

In addition, an issue that needs to be discussed in relation to using mobile technologies to support learning for digital inclusion has to do with the kind of assistance that will be provided to the learner in a mobile learning environment. Mobile technologies have a potential to support independent and free learning but they need to provide assistance to the learner in order to enable a productive learning.

5. References

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