

Designing a pre-service teacher community platform: a focus on participants' motivations

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Abstract. Online communities (OC) have several applications in the domain of education with a special focus on teacher professional development. The development of OC of teachers enables knowledge exchange, reflection on teacher practice, sharing of educational resources, and emotional support. Nevertheless, several barriers have been found to affect community members' participation such as their time constraints due to teachers' busy schedules, the community moderation and social support, and their peripheral participation. This research aims to better understand teachers' initial motivations to participate in such OCs, and how useful is this information to tackle and reduce the barriers that affect their participation. We present how a supporting platform for an OC of teachers is designed following a design-based research methodology within a pre-service science teacher master course to explore, share, and comment learning designs. We gathered information about 40 pre-service teachers' motivations to participate in the OC and their perceptions about the supporting platform. Results suggest that participants' main motivation is to gain knowledge and to use technologies to simplify designing and sharing of learning designs. In contrast, reputation is the least important motivation to participate in such an OC. These results provide valuable information to refine the designed platform as there is a relationship between participants' motivations and the perceived importance of the implemented features of the supporting platform. Further iterations will evaluate the refinements and the usefulness of the implemented features.

Keywords: Online communities · Teacher communities · Motivations · Learning Design

1 Introduction

Online communities (OCs) have several applications in the domain of education with a special focus on teacher professional development [5]. The development of OC of teachers enables knowledge exchange, reflection on teacher practice, sharing of educational resources, and emotional support [7]. As in any type of OC,

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issues around community members' participation and motivations pose main challenges in OCs of teachers. For instance, teachers' willingness to participate is described as means of sharing information and creating repositories of shared resources, as a source of collegial support and emotional engagement and reflection [6]. However, several barriers have been found to affect community members' participation such as their time constraints due to teachers' busy schedules, the community moderation and social support, and their peripheral participation [6, 7]. Furthermore, each OC requires different types of support according to members' pre-existing relationships, preferences, motivation, and curiosity to reveal meaning in the specific educational community [8]. This study aims to design a supporting platform to explore, share and discuss learning designs (LDs) in a pre-service teachers' community, while understanding participants motivations and the relationship with the perceived usefulness of the implemented features.

2 Methodology

This research follows design-based research methodology (Fig. 1), since it allows to adjust systematically and iteratively aspects of the designed platform so that each change works as an experimentation test environment, and generates theory and reusable design in real situations [11]. This paper presents the preliminary results of the first two phases and the first iteration of the third phase. Second iteration and the fourth phase are currently being performed and are out of the scope of this paper.

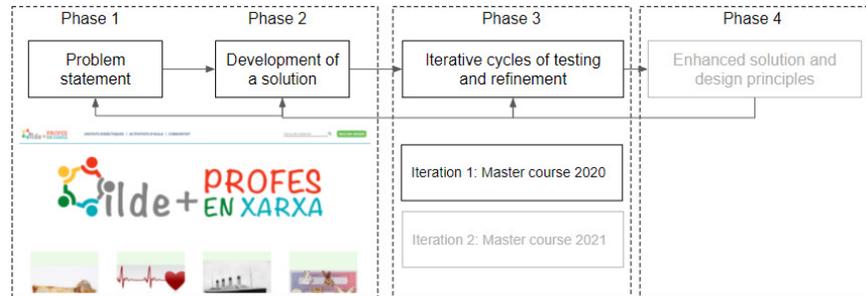


Fig. 1: Design-based research methodology diagram, based on [1].

In the first two phases, a minimum viable product (MVP) of the ILDE platform [2] was designed, called ILDE+. According to previous studies, teachers' motivations to participate in online communities include exploring ideas to gain knowledge and experience, improve the field of teaching, combating teacher isolation, curiosity and utilizing the advantages of online environments [3, 4]. Thus, five main features were included in the MVP: it implements a **template** to help with the creation of new LDs and to gather metadata to **filter LDs** when exploring the available content in the community. It also allows users to add **comments** on LDs, as well as to **duplicate an LD** to further modify it, always keeping the authorship of the original design. Users can also **co-design**

resources by sharing the authorship of a design. Besides, ILDE+ implements **community features** such as a like button, and design counters of views and comments. Users can also explore community members, and follow them to get information about their contributions within the community. This MVP version of the ILDE platform gathers the characteristics needed to support an OC of teachers [12].

In the third phase we propose iteration cycles to test and refine the MVP within a pre-service science teacher master course. In the first iteration, an introductory face-to-face activity was performed. First, participants filled a pre-questionnaire (N=40) about their motivations to participate in OCs or platforms for sharing and exploring learning activities or didactic units. An adapted version of the motivational model used by Nov et al. [10] was used and six motivational factors were evaluated: collective motives (COM), reputation benefits (REP), social interaction benefits (SOI), enjoyment (FUN), the interest of acquiring knowledge Furthermore (KNO), and use of technology to simplify activities currently performed without the help of any tool (SIM). Then, participants used the ILDE+ platform to explore previously uploaded LDs for inspiration and then to share their own LDs. Afterwards, a focus group with all the 40 participants was conducted to know their perceptions about the platform and about the participation incentives that could be implemented, as well as to deeply discuss the positive and negative aspects of the platform. During the focus group, a researcher participated as an observer, taking field notes. After the activity, participants filled a post-questionnaire with open-ended questions about their perception of the platform and desired features (N=30).

3 Preliminary Results

The analysis of the motivations to participate in an OC for sharing and exploring their educational activities designs (Fig. 2) showed that participants main motivation is to gain knowledge ($M_{KNO} = 4$, $M_{OKNO} = 4$), followed by the use of technology to simplify activities currently performed without the help of any tool ($M_{SIM} = 3$, $M_{OSIM} = 2$), which is in line with other with previous research [3, 4]. In contrast, respondents have indicated that reputation ($M_{REP} = 2$, $M_{OREP} = 2$) is the least important motivation to participate in such an OC. Nevertheless, previous research [9] indicates the importance of reputation systems in OCs, as reputation is highly associated with leadership and trust among community members.

During the focus group session, one of the discussed topics was the best way to display and recommend LDs for users. Participants acknowledged the importance of rankings as a way to explore the most useful designs and the best contributors, even when reputation is not a motivator for them. They also indicated that the template for uploading designs was too long and they did not fill it entirely, but they acknowledged the importance of the metadata collected through the template in order to explore and discover other users' LDs. Another important issue mentioned by participants is the quantity and quality of the

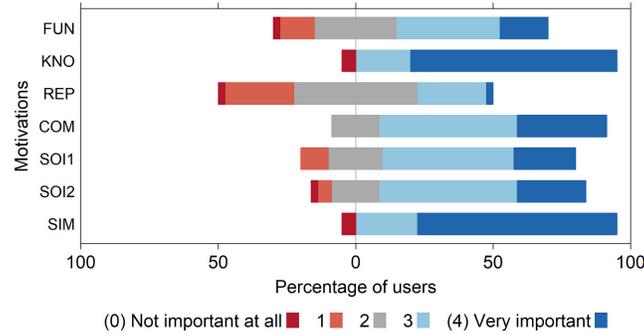


Fig. 2: Motivations to participate in an OC for didactic units and classroom activities design sharing.

available LDs. To complement this analysis, a content analysis was done with the open-ended answers using manual coding, and general topics were defined. Regarding the positive aspects, participants highlighted the simplicity of the platform and that it is easy to use (11 responses), as well as the ability to explore other teachers' ideas (6 responses) and the available filtering options (6 responses). As for the aspects to improve, users pointed out the limited number of available LDs during the training session. Regarding the desired features, even when users do not consider social interaction as the main motivator, they would like to have social network features such as forums or private chats to discuss and to contact directly with other members.

4 Conclusions and future work

Results of participants' perceived motivations offered valuable information to refine and enhance the ILDE+ platform. Since participants main motivation is to improve their skills and extend their knowledge (intrinsic motivation) through the exploration and sharing of LDs in an easy-to-use environment, the fields of the creation template were reduced to simplify the process. Additionally, a progress indicator was added to show each member how complete is a design (based on the template fields) to reduce the number of designs without any metadata and to provide an initial feedback to the users about the completeness of their own designs and about its usefulness within the community. Based on the feedback obtained from the focus group, the community features of the platform were refined, as social interaction is important for community members, and filters for exploring designs and members were added based on likes, comments, views and followers rankings. These community features were used to add a list of featured designs to the home section of the platform, which is automatically updated based on the comments, visualizations and likes each design has. These results are strongly connected to the context in which the analysis was conducted, making them difficult to generalize to other communities or platforms. For this reason, additional iteration cycles are being performed to collect data from other communities and platforms beyond pre-service teachers, as well as to understand

how motivations relate with participants behavior and performance within the community, and the usefulness of the different incentives implemented.

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