

Research on the system and method of online learning provided by mobile learning environment

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Abstract

In recent years, with the rapid development and progress of information technology, education department management personnel in order to effectively improve the effect of online learning, through the setting of mobile environment teaching mode, along with the online learning system to improve the update, attracted wide attention in the education circle. This paper mainly analyzes and researches the automatic evaluation method of learning system in mobile environment.

Keywords

mobile learning; Environmental provision; Online learning; System; Method study.

1. Change trend model of learners' online participation characteristics in mobile environment

Learners' participation in online learning (see Figure 1 below) consists of three overlapping domains, namely, cognitive domain, emotional domain and social domain. Cognitive domain embodies the process of individual knowledge construction, which includes the relevant factors of individual knowledge construction. The affective domain reveals the influence of learners' emotional state on online learning participation behavior, including the affective factors that may affect learners' online participation, such as self-feeling, feeling of learning team, feeling of learning atmosphere and feeling of learning process. Social domain refers to social behavior including interaction with others, and it includes various social factors that influence online participation. There are four main types of social factors, namely, personal characteristics, socio-cultural background, team building and communication. Since the social domain is relatively broad and has great influence on learners, it occupies an important position in the model. In short, learners' participation is not only reflected in cognitive, emotional and social participation, but also affected by these three aspects.[1]

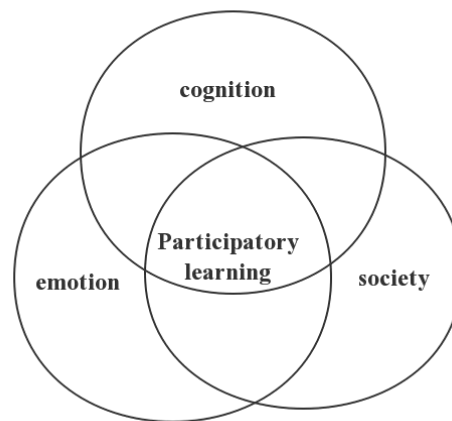


Figure 1 Feature model of learners' online participation in mobile environment

2. Index system and measurement method of online engagement in mobile environment

2.1. Construction of online engagement index system in mobile environment

Learning participation mainly includes learning course knowledge, completing course work, recording learning reflection, applying resources to solve learning problems, etc. Communicative participation includes sharing ideas on discussion boards or communication platforms, commenting on others' ideas, reflecting on your own notes, and responding to others' messages. The idea that online engagement is the comprehensive performance of learners in cognitive, emotional and social behavior. Cognition and emotion determine people's social behavior performance, and conversely, social behavior performance can promote people's cognition and emotion to a certain extent. Therefore, based on the change trend model of learners' online participation characteristics in the mobile environment, through the analysis of learners' online participation activities in the mobile environment and comprehensive consideration of online learners' emotional, cognitive and social behaviors, the online participation index system is constructed (see Table 1 below).[2]

Table 1 Evaluation index system of online engagement in mobile environment

Interactive category	Index name	weight	Evaluation method
Learner interaction with the curriculum	Course visits	30%	automatic
Interaction between learners	Number of group members	30%	automatic
Learner and teacher interaction	Teacher guided feedback	40%	manual

2.2. Evaluation methods of online engagement

The evaluation of online participation includes two levels: quantity and quality. Only the evaluation of "homework quality" and "teacher guided feedback" needs to be completed manually, while the other indicators are processed automatically by the system. Moreover, in order to encourage learners to actively participate in interactive activities, the evaluation weight of learners will also change dynamically according to their online behaviors, and the

participation of learners will be evaluated once in each stage. For learners with high participation, a higher evaluation weight will be set for them. For each learner, the evaluation weight of the next stage will be determined according to their performance in the previous stage. Each learner receives regular updates on his or her participation, as well as the overall participation of the class. Keeping learners informed of their online participation can better stimulate their enthusiasm for participation.[3]

3. Analysis of factors influencing online engagement in mobile environment

The data can accurately measure the research needs, the content is consistent with the target, and has high validity. Through data analysis, we know that the main factors affecting online engagement in mobile environment can be attributed to three aspects: technology, curriculum resource design and teacher role (see Figure 2 below).

The relevant technologies of mobile learning need to be improved. Due to the small screen of mobile terminal devices, text input is inconvenient, especially when a large number of words need to be input, the efficiency is low. When there is no wireless network, the Internet speed in the mobile environment is usually slow, so it is barely OK to watch pictures, and video teaching materials can hardly be played smoothly online. In acceleration mobile environment, mobile terminal signal is easy to interrupt, which affects interactive learning.[4]

Curriculum resources should be selected with appropriate granularity and organized logically. Unreasonable resource granularity design and lack of logic in resource organization are also important reasons affecting online participation in mobile environment. When the content of a course is divided into modules, we should not only consider the relative independence and integrity of each module, but also control the granularity of modules. Learners in mobile groups often use fragmented time to study online. If the granularity of learning resources is too large, it is not convenient for fragmented learning. When the granularity of the module is too small, the content contained in the module is too simple or the information is not complete, which makes the course content relatively scattered. Therefore, the granularity division and selection of learning resources are crucial. At the same time, it should be noted that the logical relationship between different modules should be given to facilitate learners to clarify their thinking.

In the whole teaching process, teachers should always play the role of the guide and the facilitator of learners' communication and cooperation. Teachers' slow response to questions, low difficulty in assigning collaborative tasks, and lack of team performance evaluation all affected online participation. Teachers should consider whether they can attract learners to participate in online learning from course planning and course resource design at the beginning, teaching task decomposition, and course evaluation methods at the end. On the one hand, the teacher's guidance and answer must be timely. If the learner's questions cannot be timely feedback, his enthusiasm to participate in the discussion and study will be slowly reduced. On the other hand, appropriate assignment of team homework and evaluation of team performance can promote learners' cooperation. However, it should be noted that the complexity of the cooperative tasks left for learners must be moderate. The difficulty is too small to be easily completed by one person, so there is no need to cooperate with many people. The difficulty is too high, even if many people cooperate, it is difficult to complete, will

discourage the enthusiasm of learners.

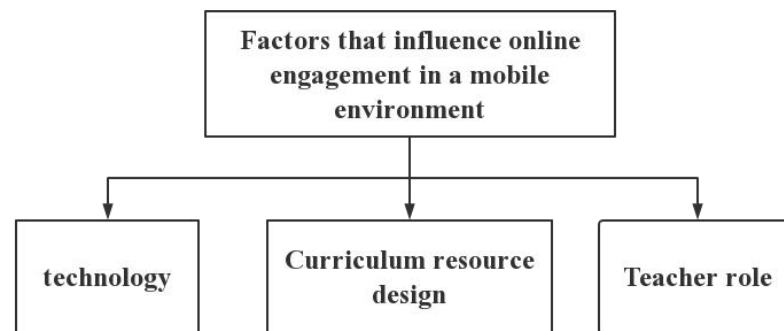


Figure 2 Analysis of factors influencing online engagement in a mobile environment

4. Conclusion

This paper mainly analyzes and studies the learning effects brought by the online learning system in the daily practice application process in the mobile environment. It can be found that although the convenience of mobile learning in time and space promotes the online participation of learners in the mobile environment to a certain extent, However, factors such as the rational use of mobile devices, the granular design of teaching resources, and the difficulty design of collaborative tasks also have an important impact on participation. It is believed that with the progress of education concept and technology, the process - oriented assessment will gradually replace the result - oriented assessment.

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