

# Learning by Collaborative Creating of Authentic Examples

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**Abstract:** Learning with asynchronous curricula usually lacks prompt helps from instructors, e.g. raising a work-out example to assist pupils to understand a difficult abstract concept. It finally results in pupils having to take extra time to seek supplements for the difficulties. To deal with the problem, this research aims at implementing a collaborative creation environment, in which pupils can provide their authentic examples from real world as the supplements for learning concepts. Consequently, the authentic examples not only help pupils to understand an abstract concept by an instance manner but also enrich asynchronous curricula.

**Keywords:** Authentic example, collaborative creation

## 1. Introduction

A concept of authentic example is introduced in this paper to supply the insufficiency of online asynchronous learning contents. An authentic example is composed of an instance of the real world and location information, where this instance is used to describe an abstract concept and the location information is associated with a timestamp for indicating where and when the instance happened.

Both objectivism and constructivism researchers believe that examples can be applied to education to assist in learning [1][3]. Kuo et al [2] thought that pupils will do rehearsal, elaboration, and organization when they creating and learning authentic examples. Besides, the major influence on e-learning is that reading is not the only thing what pupils can do when learning, they can also according to the location information to feel, experience, and learning the authentic example.

Hereinafter an example has been raised for describing how to generate authentic examples and how an authentic example works. Suppose a pupil saw many people line up in front of a ticket window, and that lets the pupil recall the queue concept, which s/he learnt from the online data structure course. The pupil then used his/her video camera, which has been built in his/her cellular phone to record the scene as video. At the same time, the cellular phone extracted the GPS (Global Positioning System) data as the location information from the built GPS receiver, and then associated the location information and current timestamp with the video as an authentic example. The authentic example can then be uploaded to LMS (Learning Management System) as a supplement of the queue concept. Additionally, the pupil can write a short description to the authentic example for clearing the relationship between the authentic example and the queue concept. Finally, other pupils who do not understand the queue concept can through the authentic example to try to understand the abstract concept.

## 2. Problems and approaches

The asynchronous online learning is the most popular e-learning setting, which deficient in real time tracking of pupils' learning status. It results in that instructors cannot furnish pupils with prompt and appropriate supports. In such a kind of learning environment, pupils have to seek additional materials to help them understand and learn the concepts of courses which they felt difficult. Although pupils can find out useful supplementary materials from Google, Wiki, library, a link, or

even a fraction of a copy, these supplements are usually difficult to preserve, to share with peers, and not well organized.

To solve the aforementioned problem, this research intends to adopt the authentic examples as supplements for regular online courses. Based on this objective, a ubiquitous collaborative creation environment has been implemented for creating authentic examples. As shown in Figure 1, our system architecture consists of a collaborative creation platform (as shown in middle and rightmost of Figure 2) and many pupils, whose cellular phones are installed the Learner Agent software (as shown in leftmost of Figure 2) to assist pupils with creating authentic examples. By the help from the Learner Agent, pupils can create and share their authentic examples without redundant interactions with their cellular phones.

Consequently, based on aforementioned settings, the real world can be seen as an index of a huge volume of book, the life experiences from pupils are used to enrich the book, and all pupils play both teacher and student roles in the u-learning environment.

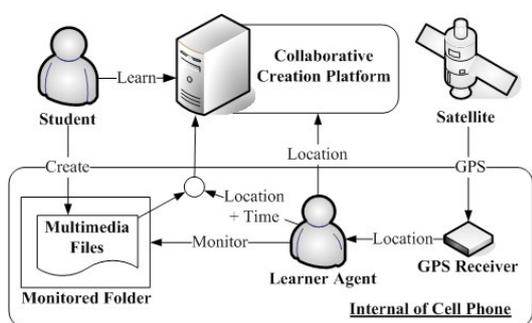


Figure 1. System architecture.

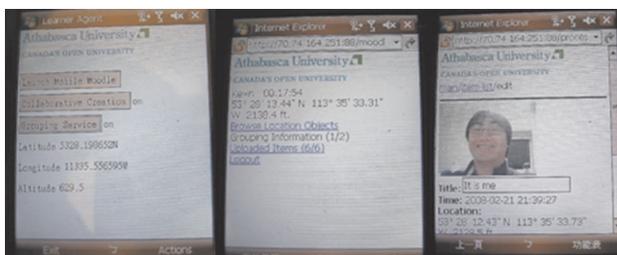


Figure 2. System snapshots.

### 3. Work in progress

With regard to the working progress, the prototype of the ubiquitous collaborative creation environment is done. Authors are now trying to develop a flexible way to connect existent LMS (e.g. Moodle) and the collaborative creation environment. After all preparations are done, this system will be conducted in the Athabasca University for real testing. Finally, the portion results of this research have been presented and published in IADIS e-Learning 2008 international conference [2].

### Acknowledgements

This work was supported by the National Science Council (NSC), Taiwan, ROC, under Grant NSC 95-2221-E-006-307-MY3 and NSC 95-2221-E-006-306-MY3. The authors wish to acknowledge the work of this research would not be possible without gift funding provided to the Learning Communities Project by Mr. Allan Markin.

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