# The Post-MOOCs Era--An Application of SPOCs in Accounting Education

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*Abstract:* With the advancement of technology, the e-learning market has grown rapidly. E-learning courses, no matter offered through distance learning, online learning or other modes of learning, have also advanced with the times. The government, schools, and corporate organizations have an increasingly higher demand for high-quality e-learning courses. MOOCs which stands for massive online open courses was first introduced in 2008. In the learning model of MOOCs, thousands and even tens of thousands of learners are allowed to directly enrol in and take an online course. Compared with the conventional classroom learning model, MOOCs has enormous potential for educational applications. Despite the global popularity that MOOCs has gained since 2012, a number of recent scholars have voiced their concerns about MOOCs, especially over the low course completion rate and lack of learning portfolios. A Harvard University Professor, Robert Lue, has stated straightforwardly that we are now in the post-MOOCs era. The objective of this research is to develop a SPOC model for accounting education in order to further improve the learning effectiveness of MOOCs for learners.

*Key-Words:* E-learning, MOOCs, Business Education

## 1 Research motivation and objective

To date, the didactic method remains the most commonly used teaching approach among teachers. When time is limited and pressure is high, this method allows teachers to effectively deliver professional knowledge and key points in the lesson to students. In this approach, it is common that the teacher actively disseminate information and students passively absorb what is being taught, and the teacher is also unable to adjust his or her teaching strategies based on students' individual needs[1]. The "flipped instruction" is a recent teaching method that uses digital technology to improve the drawbacks of the didactic method [2]. When the class hours are limited and the class is large, it is indeed not easy for teachers to ensure that all the students are keeping up with the lesson while seeking to provide adaptive instructions to facilitate higher-order learning. The flipped instruction may offer an alternative path to this goal [3].

The flipped instruction involves a "flip" of the traditional model of learning where the teacher dominates the students' learning process and students passively receive the lessons. In this model, students are required to engage in self-directed learning prior to the class. They can use computer, smartphone or other kinds of mobile devices to view a number of short instructional videos or learning materials recorded or prepared by the teacher [4]. During the class, the class time previously used by the teacher to explain the learning materials can then be utilized for other instructional activities, such as discussion or exercises. In this way, students are allowed to have more opportunities to ask questions and interact with peers and also achieve higher learning outcomes, especially in higher-order learning.

The term "MOOCs (Massive Open Online Courses)" was coined in 2008 by George Siemens and Stephen Downes when they collaborated to open the first online course called "Connectivism and the Connective Knowledge" in 2008. Although only 25 students attended the course on the campus, about 2300 learners from around the world participated in this course online [5]. The information technology offers more possibilities to the flipped instruction and also supports the MOOCs online learning environment, allowing learners from around the world to sign up for courses they are interested in and take the courses at anytime and anywhere for free. Since 2012, the

trend of MOOCs created by Udacity, Coursera, and edX has swept through the globe [6]. By the first season of 2014, more than 700 courses have been made available online by these three institutions, with Coursera accounting for 570 courses. Because of the astonishing achievement made by these three institutions, New York Times heralded year 2012 as the Year of MOOC [7]. However, with the spread of the views supporting MOOCs, a number of scholars have expressed their concerns about MOOCs. Harvard University Professor Robert Lue, for instance, bluntly stated that we are already in a post-MOOC era [6].

Despite the increase in "anti-MOOC" and "post-MOOC" views, many cases have shown that the rise of MOOCs has motivated educational institutions at all levels to seek the no-geographic barrier, high-quality, free-of-charge, and allied diffusion benefits of online courses. Instead of reaching the point of blasting of a bubble, MOOCs is better described as coming to the right time for re-optimized adjustment [7]. Regarding the major problems with MOOCs, including (1) low completion rates[8], (2) lack of learning portfolios[9], and (3) deficiency of funds and resources [10][11], there are bipolar views in the education field. As a result, the focus of educators' attention has gradually shifted from MOOCs to SPOCs [6]. SPOCs (Small Private Online Courses) refers to online courses that are smaller in scale and available only to a specific group of learners. As an extension of MOOCs, SPOCs is an information technology-integrated instructional model that preserves the advantages of MOOCs and integrates online courses into traditional campus courses. In other words, SPOCs is an instructional model that combines MOOCs with in-class courses and also supports the flipped instruction [12][13][14]. In order to improve the numerous drawbacks of MOOCs when applied in instruction, this study attempts to use SPOCs as a substitute for MOOCs. The main objective of this study is to develop a flipped instruction model that integrates MOOCs into SPOCs on accounting courses.

## 2 Literature Review

The flipped instruction refers to flip the steps of education. Specifically, it turns the traditional process of "the teacher giving lectures during the class first and students doing homework at home later" into "students engaging in online learning in their spare time first and the teacher guiding students to have higher-order discussion during the

class" [1]. In this model, lower-order learning, such as knowledge acquisition and comprehension, can be done by students based on self-directed learning. The higher-order learning, which includes application, analysis, evaluation, and creation, is achieved through interaction and collaboration among students and under the teacher's guidance [15]. In other words, through the flipped instruction, students have more opportunities to develop higher-order abilities, such as evaluation and creation [3].

A considerable number of studies have probed into issues related to the flipped instruction after this concept was introduced. Most of these studies showed that the flipped instruction has a significant effect on students' attitude toward learning, interest in learning, and learning outcomes[16] [17] [18] [19] [20] [21]. However, a number of studies have pointed out that the flipped instruction cannot lead to higher learning effectiveness [22][23]. These studies differ greatly in research field, the educators and students involved, and also focus more on application of the flipped instruction in mathematics, physics, and engineering domains. Studies investigating its application in the business administration domain are relatively rare. Therefore, this study attempts to apply the flipped instruction in "accounting education".

MOOCs is a new e-learning model based on the flipped instruction. It enables learners to learn online and have total control over their learning. Teachers also teach online (Ho, 2014; Huang, 2015). Because MOOCs are complete and continuous courses, learners can preview and review lessons at anytime and anywhere based on their needs and preferences. Because of the tremendous convenience for learners, MOOCs has gained high popularity and business value within a short time. However, its features of being "massive" and "open" has resulted in a few fatal problems, including low completion rates[8] and lack of learning portfolios [9]. To address these problems, many scholars in the education field have begun to seek solutions that target the scale or openness of the courses, in hope of creating a better instructional model than MOOCs. Therefore, as a solution and alternative to MOOCs, SPOCs began to draw people's attention [6]. SPOCs, short for small private online courses, was proposed by California University Professor Armando Fox in 2013[25]. While MOOCs is intended to provide online instructions to off-campus learners, SPOCs is meant for providing the flipped instruction to campus students. SPOCs also offer lessons online. Students are required to

browse videos, do homework, and engage in discussion online prior to the class. When they are in the classroom, they will engage in various activities arranged for by the teacher, including quiz, discussion, reporting, midterm exam, final exam, and so on. SPOCs differs from MOOCs in several aspects. Whereas MOOCs is intended for massive groups of learners, SPOCs is targeted at smaller classes. Whereas MOOCs is open to the public, SPOCs is usually private and available to a certain group of learners [7] [26]. Simply put, SPOCs integrates the concept of MOOCs into classroom instruction. It retains the benefits of MOOCs in a flipped instruction model [7] [12] [25].

# 3 The SPOC development model

There are numerous models for developing an online course. In this study, the most common ADDIE instructional systems design model, which consists of five steps, including analysis (A), design (D), development (D), implementation (I), and evaluation (E), is adopted to develop an accounting course integrating SPOCs[27][28]. This course is intended to introduce the structures of balance sheet, profit and loss statement, and cash flow statement, as well as the important concepts about receivables, fixed assets, inventory, intangible assets, sales revenue, sales return, and gross profit. The course will be progressively developed in the following steps: needs analysis, goal setting, design and adjustment of teaching materials, compilation and assessment of teaching materials, and outcome evaluation.

## 3.1 The analysis stage

This stage is critical to the course design, because the analysis result affects how the course will be designed. The analysis covers three aspects, including (A) the teaching context, (B) learners, and (C) learning tasks.

(1) Analysis of the teaching context

The media, resources, and limitations are analyzed. The media and resources available for use, and the limitations will be examined so as to determine a suitable online learning model.

(2) Analysis of learners

In-depth interviews with learners will be conducted to survey students' impressions about accounting, whether they have taken any accounting lessons before, and their needs and expectations.

(3) Analysis of learning tasks

The goal of this analysis is to clarify the duties and tasks performed by accounting practitioners and then identify the knowledge, skills, and attitude required in this profession [29]. Through interviews with accounting practitioners, their duties and tasks can be confirmed, and the originally planned teaching concepts and topics can be modified accordingly.

## 3.2 The design stage

After the analysis stage is completed, it is necessary to design and adjust the teaching materials based on the analysis results. In this stage, several experts in accounting and e-learning will be invited to review the course content. The teaching plan and materials will be designed and adjusted based on expert opinions.

## 3.3 The development stage

The goal of this stage is to build an e-learning environment, develop and implement a SPOC teaching model, and design the instruments needed for this research and a formative evaluation. This stage is also carried out with the assistance of "expert review". The experts invited to assist in this stage are the same as those involved in the "design stage". The accounting experts will be selected from high-ranking managers in the industry and accounting scholars. They will evaluate whether the course content conforms to industry needs and general accounting principles. The e-learning experts will be selected from scholars of e-learning and multimedia. They will evaluate if the learning environment and the teaching model conform to the principles for developing an e-learning course. The relationship among the education administration system database, e-learning platform, and the learning portfolios is as illustrated in Figure1.

## 3.4 The implementation stage

Prior to implementation of the SPOCs, the entry abilities of learners will be evaluated (placement evaluation). During implementation of the SPOCs, continuous and non-regular observations will be carried out. By observing the dialogues among learners, learners' opinions about the course can be collected to help improve the instruction. This procedure ensures the effectiveness of the formative evaluation and can lead to higher learning effectiveness.

### 3.5 The evaluation stage

After the instruction is completed, an evaluation of the students' learning outcomes will be conducted, and the learners' portfolios in the Internet environment will also be analyzed to determine the overall learning effectiveness of this course.

The structure of the SPOCs development model is as illustrated in Figure2.

## 4 Conclusion

Among the various teaching and training approaches, e-learning has become a main instrument used in the industry for assisting employees to acquire industry-specific knowledge and skills. As businesses may experience difficulties or bottlenecks in developing e-learning, they need to rely on academia-industry collaboration to build a solid foundation for developing e-learning. If the proposed innovative paradigm of SPOCs for accounting education can be successfully implemented, this model can be replicated for application in other industries to help firms solve the problem of preserving and passing on core abilities using a low-cost, convenient, and flexible instructional approach.
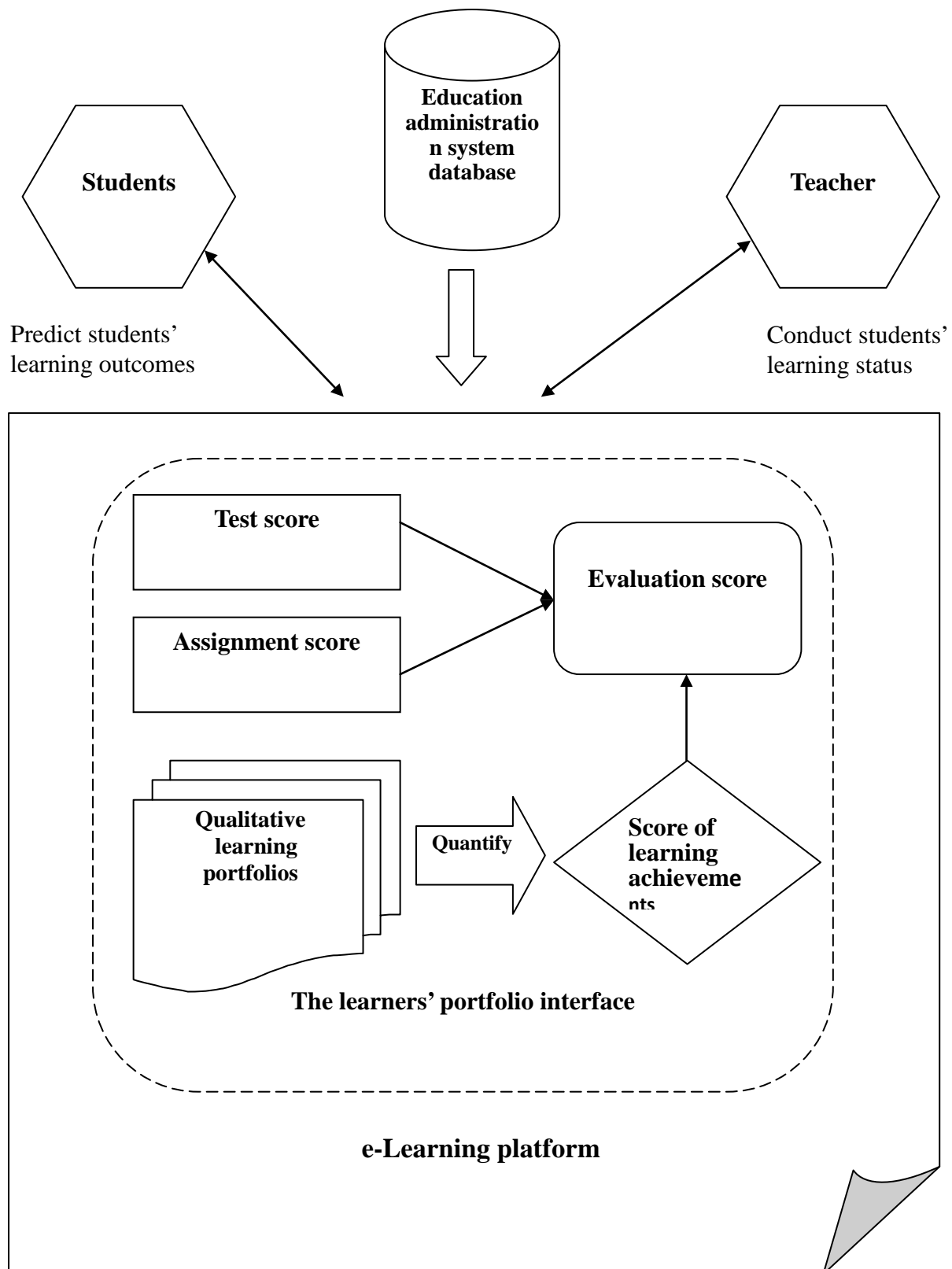
**Figure 1. The relationship among the education administration system database, e-learning platform, and the learners' portfolio interface**
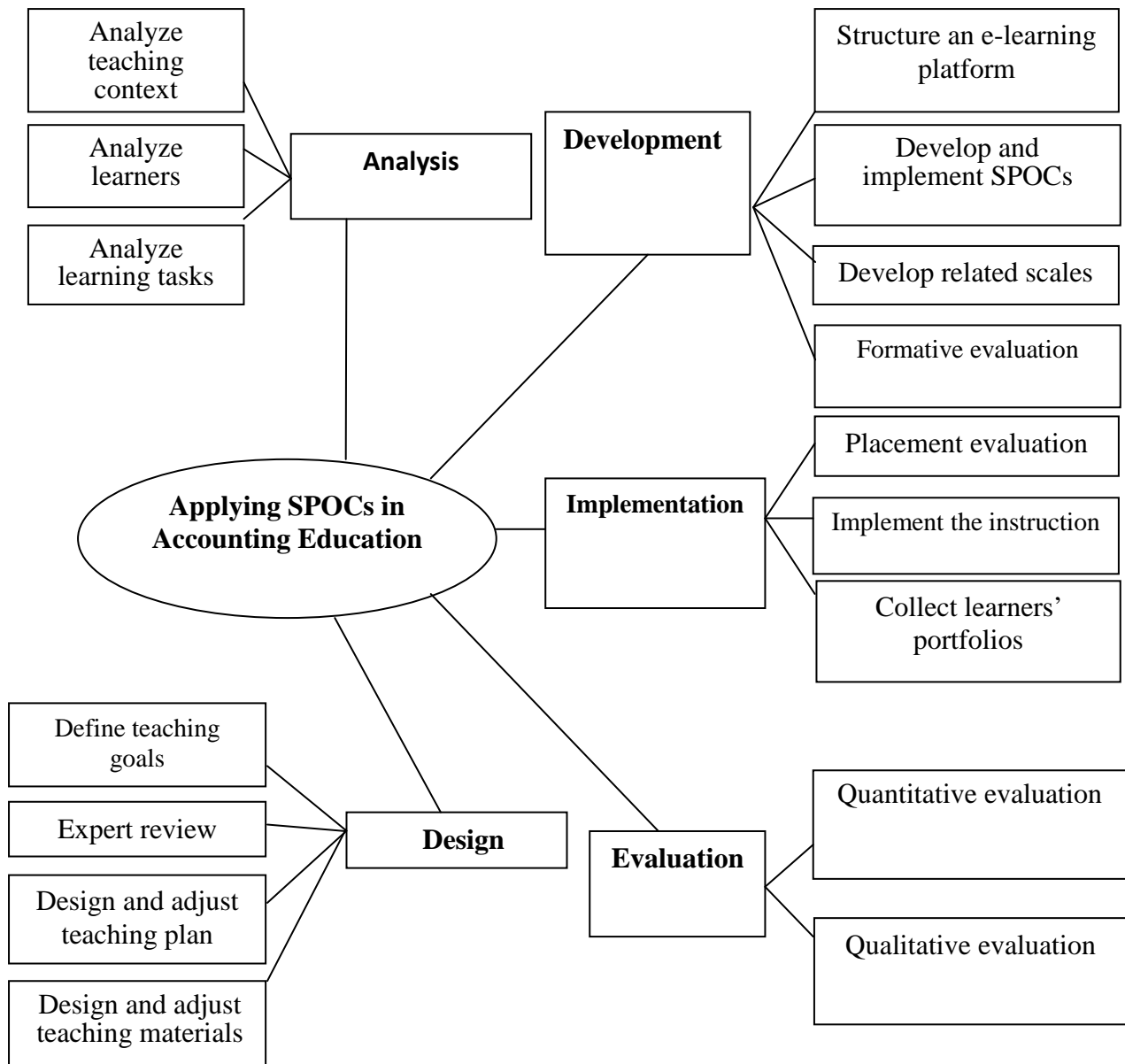
Analyze teaching context

Analyze learners

Analyze learning tasks

**Analysis**

**Development**

Structure an e-learning platform

Develop and implement SPOCs

Develop related scales

Formative evaluation

**Applying SPOCs in Accounting Education**

**Implementation**

Placement evaluation

Implement the instruction

Collect learners' portfolios

Define teaching goals

Expert review

Design and adjust teaching plan

Design and adjust teaching materials

**Design**

**Evaluation**

Quantitative evaluation

Qualitative evaluation

**Figure 2. The structure of the SPOCs development model**

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