

# **EXPLORING SUBJECTIVE EVALUATION OF STUDENT LEARNING EFFECTIVENESS WITH THE USE OF LEARNSMART**

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## **EXTENDED ABSTRACT**

With the popularity of online education, universities have started to integrate online learning tools and courses into traditional classroom setting. In this way, the professors could better balance the advantages of online education versus traditional face to face teaching to enrich student learning. The effectiveness of face to face teaching was found to be related to appropriate instructional design and instructors' subject knowledge and capability to communicate clearly with the students, to create rapport with the students, and to deliver the course enthusiastically [11]. By comparison, the online practices could facilitate the teaching in classroom [2]. With the complement of technological tools, experiential learning can be promoted by interactive online teaching, which conforms to the requirements of the Association to Advance Collegiate Schools of Business (AACSB) International to increase the flexibility and responsiveness to student needs [1] [6]. For example, professors can use discussion forums, messaging and emails to create an interactive community to facilitate and encourage experiential learning among students [12].

Against this backdrop, it is critical to understand the impact of interactivity on student learning effectiveness. In particular, we intend to examine how the integration of an online interactive tool (i.e. LearnSmart) could enhance the student learning and thus learning effectiveness. To the best knowledge of the authors, few studies have been conducted to examine this new learning tool in the business fields. In this study, the authors will describe the implementations of LearnSmart in some business courses at a west coast public university.

LearnSmart is an interactive study tool that evaluates students' knowledge levels by tracking the topics students have mastered, and identifies the areas that need further instruction and practice. Depending on student progress, LearnSmart automatically adapt the learning contents based on their knowledge strengths and weaknesses, and their confidence level around that knowledge [8]. LearnSmart also generates dynamic reports to document progress and areas for additional reinforcement, offering students real-time feedback on their content mastery. By monitoring student progress, instructors can instantly assess the level of understanding and mastery for an entire class or an individual student at any given time [8].

Student learning has been the central focus of higher education. Student learning is context dependent, and various factors influence student learning effectiveness such as students' own motivation, classroom climate, and teaching methods [3]. In particular, interaction is considered as a determining factor to promote student learning effectiveness, not only in traditional classroom setting but also in online education [9] [10]. Student learning effectiveness refers to the learning value as perceived by students [5].

Constructivism posits that students who are engaged with interactive activities will have more effective learning than those who are not [7]. Therefore, it is important for the instructors to emphasize the engaging learning experience among college students. LearnSmart offers a way for students to read digital textbook chapters, and then apply this new knowledge to homework problems and quizzes.

Measurement of student learning effectiveness can be assessed based on the objective performance such as course grades, as well as subjective evaluation such as student perception of LearnSmart and their satisfaction with its use [10]. In this study, we focus on the subjective evaluation by examining student perceived competence, perceived value and perceived challenge with using LearnSmart, as well as their satisfaction with LearnSmart.

The research context for this study was four undergraduate marketing and management courses, offered at a major public university in the southwestern USA. LearnSmart is a part of McGraw-Hill Connect course, which is required for the students to study each chapter of this course. It is designed to improve students understanding of course contents through this interactive platform. The students were asked to do LearnSmart either before or after the instructor finished the lecture in class. They were given one week to finish LearnSmart and then take the Connect quiz for that chapter. The instructor can check the assignment statistics to get details on student performance and the time each student spent to finish LearnSmart.

Data for this research was collected using an online survey. Students were offered a course grade incentive for their voluntary participation. This hardly made any difference to the grade outcome, yet was spectacularly successful in encouraging response [5]. About 215 students were invited to participate in this study and we received 197 valid responses.

The confirmatory factor analysis (CFA) for the constructs was conducted to evaluate the reliability and validity of each construct. Based on the Cronbach's Alpha values for the constructs in this study, ranging from 0.818 to 0.943, all latent constructs used in the hypothesized model have acceptable reliability [4]. The hypothesized relationships were tested using multiple regressions. The results confirmed the hypotheses that perceived competency ( $\beta=0.552$ ;  $p=0.000$ ) and perceived value ( $\beta=0.412$ ;  $p=0.000$ ) are positively related to students' satisfaction with LearnSmart while perceived challenge negatively impacts satisfaction with LearnSmart ( $\beta= -0.129$ ;  $p=0.002$ ). Therefore, H1, H2 and H3 are supported in this study. The inclusion of the control variables, that is, the course delivery format and the student experience with LearnSmart, did not change the results, thus showing the robustness of the findings.

This study intends to examine the influence of an online interactive learning tool LearnSmart on student evaluation of this tool and their learning effectiveness. Perceived competence, perceived value and perceived challenge are also investigated in this study to test their potential impact on student satisfaction with using LearnSmart. The results of this study help evaluate the effectiveness of using LearnSmart to enhance student learning and make recommendations on the future use. The results also add new knowledge to business education literature regarding the employment of a new information technology in the course design.

This study focuses on the subjective measure of student learning effectiveness. In order to better evaluate student learning through LearnSmart, student quiz performance and final grades need to be considered in the future to evaluate the objective aspects of student learning effectiveness. In addition, the course delivery format and student experience with LearnSmart did not show any significant impact on student satisfaction with LearnSmart, which is not consistent with existing literature regarding the impact of course delivery format on student learning [5]. Additional data can be collected over semesters to evaluate the effectiveness of using LearnSmart as a teaching tool.

**References available upon request from Qin Sun at [qin.sun@trident.edu](mailto:qin.sun@trident.edu).**