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*Book Review*

# Higher Education 4.0: The Digital Transformation of Classroom Lectures to Blended Learning

*by Jones Kevin Anthony, Ravi S. Sharma, Springer, Singapore, 2021, X+279pp.,180 (pbk),* ISBN: 978-981-33-6682-4

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Published by the Springer Nature Singapore Pte Ltd. in 2021, the book entitled "*Higher Education 4.0 : The Digital Transformation of Classroom Lectures to Blended Learning*" by Kevin Anthony Jones and Ravi S. Sharma presents an enlightening research for seeking out the impact of changing the instructional design from traditional lecturing to blended learning on the students' academic achievements. As professional teacher and researchers of English in education, we read this book with particular interests, believing that it is a well-timed international publication under the global effects of the Covid-19 pandemic on teaching forms. The book under review exhibits a well-organized research project based on scientific experiment model, indicating the objectives, scope, methodology and findings of the research through 7 chapters. It provides readers with a thrilling opportunity to dig out the influencing factors in academic performances of students due to the teaching design transition. Besides, the significant findings can help improve the blended learning model. We believe this book is an essential guidance for future digital teaching and would appeal to educators and researchers.

The book is logically composed of 7 chapters which are all around this research. The first chapter offers a panoramic outline of this educational research, starting with a thesis paper about personal motivations. According to the Unified Modeling Language (UML) Class Diagram that was slightly adjusted for practicability, the authors elaborate the study's complete scope of literature search, planning, conduct, and analysis. Firstly, to figure out the underlying influences, the research question is segmented into two parts: effect and problem-solution. The former is reflected by scores and the latter concerns the problems in traditional lecturing. Secondly, in line with the detailed information of venue and

participants, the Literature Class, the design-based methodology and the Platform Class are determined. Finally, what is concluded from scientific analysis of data has brought readers enlightenments about digital transition in instruction, the knowledge system and future relevant study.

The second chapter discusses the existing knowledge in learning and teaching about this study, especially the instruction theory by a case of instructional design. Initially, the authors point out the setting of formal learning is unrestrained and accidental. Then by explaining its didactic model which depicts the relation among teacher, student and content, the development theory and learning strategy are introduced. In doing so, the authors indicate that the main "isms" in strategy and theory are coexisting rather than contradictory. Secondly, based on the UML Class Diagram of relation of existing knowledge, the authors clarify respectively the instruction theory by Gagné's nine events and Chickering and Gamson's seven principles, and the related choice of teaching design. Finally, the seven learning strategy taken into study and a citation of publication in blended learning are presented for better understanding.

The third chapter explains the methodology applied in the system of the research platform and the conduct of the experiment. In first three sections, the authors make it clear that the instructional design of "blended learning" is deployed by scientific high-level plan, principles, six-step method and nine steps of instruction, determining it as the archetypal "40% eLearning plus 60% F2F". In last three sections, being consistent with the mentioned technical procedures, some experiment details are displayed for closer comprehension, including weekly learning activities, the learning journey and educational technology in which items are arranged by UML model and COTS is focused as new technology.

The fourth chapter elaborates the first tier of the "two-tier composite model", the learning model, which is fixed by the reputed Prosser and Trigwell model of learning and teaching of higher education students. The learning model is used for data requirement and theory explanation which are two key procedures. Therefore, detailed model design is made known to readers. To begin with an overview, three adjustments of the Prosser and Trigwell model are made including diagram replacement, term rejection and learning approach change. Then structure diagram and behavioral diagram are presented. The former is UML "Class" with no overlapping and the latter is UML Activity showing behavior sequence. Lastly, the authors give some information of concepts in two diagrams such as prior experience, learning situation, learning approaches, learning outcomes and model traceability.

The fifth chapter clarifies the second tier of the "two-tier composite model", the data model, which maps to the conceptions in the learning model and offers the amplification of data in statistical testing. The authors first introduce the content of the data model: a diagram, explanatory words and a data dictionary pertaining to all the 27 variable Classes, and make an interpretation of diagram. Then they give an elaboration of the associated variables. By the combination of texts and tables, variable-controlling approach and Bloom's taxonomy are prominent in whole research design. To end

with, they present the mapping between data and learning model elements, the methodical data collection by time and source classification, and auditability and verification of data by rigor processes.

The sixth chapter provides a summary of statistical analysis results of data set in accordance with the afore-mentioned data model. At first, the main structure of the analysis is depicted based on non-UML form, and the authors specify the research question into three detailed questions which contains advantage, disadvantage and predictions in blended learning. Then descriptive statistics is demonstrated according to the involved variables by "count", "summarize", "T test" and Wicoxon (Mann-Whitney). The authors also scrutinize the influence of prior experience and learning approach to blended learning, dealing with the three questions. Finally, a congruity check is made to marks of every semester.

The last chapter purposes all exploratory conclusions, contributions to existing knowledge, limits and advices to future research. Firstly, conforming to the didactic triangle of formal education, eleven broad conclusions are classified into three categories including "student and learning", "teacher and teaching" and "curriculum and organization". It points out what contributes to the improvement on marks and how can the blended learning be enhanced. Secondly, the authors indicate the contributions and limits according to the real situation of the research. Lastly, they suggest the future direction of blended learning in higher education.

The main contribution of the book is that the authors make an exploratory analysis of the research problems "the impact of the change of teaching design from traditional lectures to blended learning on students' academic performance" through the design-based method, which is of great research significance under the background that blended learning is about to become the mainstream in the Covid-19 pandemic. This study investigates the learning of higher education students in Asia by using scientific UML diagrams, research platforms and models. Besides, the conclusions have referential significance for the teaching transformation all around the world. It can not only help researchers and teachers to check students' adaptability in new teaching design and find effective methods in learning and teaching, but also guide schools to make continuous improvements in teaching arrangements.

In this research, the author makes a scientific transition between traditional teaching and blended learning according to the design-based research method. As researchers, from the perspective of solving problems, they explore the specific influencing factors of teaching design change on students' performance, so as to improve the current teaching effects and provide reference for the future promotion of blended learning. In addition, the author makes further cooperation between the learning model and the data model through the two-tier composite model, and obtains the conclusions about the influencing factors. Through this approach, the authors describe and explain the possible reasons for these conclusions in three aspects, and how to delineate the impact of this teaching design reform at the theoretical level. Under current teaching and learning environment, this kind of research helps to provide timely and strict reference, so that teachers and researchers can benefit. Therefore, the value of this research can encourage all related teachers and researchers to explore the possible problems and

solutions of blended learning replacing traditional teaching.

The book would be more comprehensive if it adds more cases from different regions and nationalities, which can increase the diversity and hence conduce to the accuracy of research results. Yet, the book is of great benefit for higher education institutions and teachers who need to put forward a transition from traditional teaching to blended learning, because it has lead a prospective investigation for future research and practice. This monograph is an academic exploration of learning and teaching in higher education. The book review paper acknowledges that it will not only guide students to make perceived efforts in specific aspects, but also provoke teachers, researchers and universities to develop all involved processes in blended learning.

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