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STUDENT READINESS FOR CO-CREATION: ENHANCING ACTIVE LEARNING FOR STUDENT-STAFF PARTNERSHIP IN HIGHER EDUCATION

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Abstract

Pedagogical innovations that center on co-creation with students for active learning are imperative in the higher education sector. Student co-creation can take different forms including, but not limited to, co-designing assessment components, courses, and curricula, to the even smaller scale of student-authored multiple choice questions. Empirical research suggested many positive outcomes that benefit students in the partnership relationship such as enhanced metacognitive awareness of learning, improved higher-order thinking skills, increased autonomy and self-regulation capabilities, student engagement, and academic performances. Students participating as partners in a constructivist learning paradigm for meaningful co-creation requires a much deeper level of student involvement throughout the process. Before conducting the co-creation activities, students' strong willingness to participate, engage, and make contributions will increase the likelihood of the positive outcomes of co-creation. On the other hand, the partnership results of co-creation can be largely constrained by insufficient clarity of the students' roles and low perceived confidence in their ability to perform in it. Students who are not induced to make a respective contribution are another source of hindrance. Given the potential learning advantages in co-creation, the attitudinal construct of student readiness in student-staff partnership literature is limited. Therefore, this study aimed to explore factors of student readiness for co-creation and simultaneously pilot-tested an inducement factor as a predictor of deep learning. The results of exploratory factor analysis suggested that student readiness for co-creation comprised of two factors namely perceived role clarity and capabilities, and student inducement for motivation. Based upon the contribution-inducement model, this study shed light on the roles of instructional designers and teachers in stimulating students' readiness for active collaboration for the successful co-creation learning experience.

Keywords: Active learning, co-creation, student-staff partnership, student readiness, motivation

1 INTRODUCTION

Student readiness to engage in co-creation activities can increase the likelihood of the success of student-staff partnership. When an academic staff intends to partner with students to enhance active learning, it is imperative to examine students' psychological state of mind before the commencement of any form of co-creation. Co-creation in higher education has different types such as students co-designing courses, and curricula with teachers. Student representatives collaborate with university staff on committees for quality assurance (Luescher-Mamashela, 2013). There are also examples of student-centred assessments such as student-authored multiple-choice questions, or project-based study and scholarship projects (Bovill, 2020).

According to Bloom's (1956) taxonomy, students who achieve lower-order learning means that they can remember and understand the knowledge learned. Students who are prompted to answer multiple-choice questions (MCQs) to test their knowledge involve higher-order thinking skills as they need to go through the process of applying, analyzing, and evaluating the concept learned. Furthermore, students can extend their learning to new heights if they are required to synthesize all knowledge learned and use their critical thinking skills to generate content, i.e., design and develop MCQs. This type of cocreation context is a means of fostering deep learning and increasing student engagement (Doyle & Buckley, 2022).

Given the benefits of cocreation, previous research emphasizes the outcome variables such as enhanced metacognitive awareness of learning, improved higher-order thinking skills, increased autonomy and self-regulation capabilities, student engagement, and academic performance. However, students participating as partners in a constructivist learning paradigm for meaningful co-creation require a strong willingness to participate and engage. Therefore, their readiness to engage in such a process is a predetermined factor to success.

The concept of student readiness for cocreation was adopted from the customer readiness for cocreation to engage in cooperative behavior (Lengnick-Hall, 1996). Student readiness is defined as "the extent to which a student is prepared and likely to cooperate with his/her tertiary institutions or instructors in value co-creation" (Mostafa, 2015, p. 147; Wang et al., p. 136). The literature review suggested that role clarity, ability, and motivation are the components of the latent concept of readiness for co-creation. Role clarity refers to the degree to which an individual is aware of what is expected from him/her. Ability explains the degree to which an individual is capable of engaging in it based on their knowledge, skills, experience, energy, effort, time, etc. Motivation is the intrinsic or extrinsic reward expected by them (Mostafa, 2015). Based upon the contribution-inducement view of organizational membership (Barnard, 1947; March & Simon, 1958), the authors used the term members to refer to those groups without which the organization could not be operated. In this study context, students are considered the key member group. They will put in efforts and contribute to their peer group on cocreation tasks on the condition that their expected inducement will be achieved. Inducement includes incentives offered by the instructors or achieving a deeper level of learning. To help instructors to design better pedagogical model to enhance active and deep learning, this study aims to explore factors of student readiness for co-creation and pilot test the inducement factor as a predictor of deep learning.

2 METHODOLOGY

This study was held in a public university in Hong Kong in September 2023. Students came from accounting and finance programs. The instructor provided a briefing about the cocreation activity, which is designed as a mandatory task in the subject of company law, aiming to improve students' subject knowledge through applying higher-order thinking skills, thereby enhancing active and deep learning. Students were formed into groups to develop MCQs together. Half of the class had no experience in partnering with peers and instructors on this type of co-creation activity. To gauge understanding of their readiness to cocreate the MCQs together, a pre-survey was developed. A 7-point Likert scale was used.

The survey comprised 29 statements including the three components of student readiness. The measures used in this study were adapted from Mostafa (2015) and previous literature (Dellande, Gilly, & Graham 2004, Meuter, Bitner, Ostrom, & Brown, 2005, Wang, Hsieh, & Yen, 2011). Role clarity and ability were measured by five and six statements respectively. While motivation was measured by 8 statements including an additional statement of incentives for students. With regard to the variable of deep learning (Draper, 2009), it was measured by five statements namely: "Co-creation of MCQs will foster deep learning as I can understand the relevant topic in another way", "Co-creation of MCQs will foster deep learning as I can apply the relevant concepts and/or principles of law to given facts", "I believe the co-creation of MCQs among my group members and I will elicit productive discussions", "I believe that the teachers' willingness to advise and guide my group members and me prior to the co-creation of MCQs will foster an interactive environment where we will be able to receive constructive advice", and "Co-creation of MCQs will help my group members and me to learn how to give good reasons why each answer option within the MCQs is right or wrong". Face validity of all the statements was confirmed by academic staff. A trial run of the questionnaire was performed by five students who had previous experience in co-creation activity. The demographic data of gender, age, program, year of study and experience in cocreation was included.

Data was analyzed using SPSS version 27. Housekeeping procedure was carried out including reverse coding of 4 statements that were designed in negative meaning as compared to all other statements. The data were recoded from values "1" to "7", "2" to "6", "3" to "5", "4" to "4", "5" to "3", "6" to "2" and "7" to "1". Exploratory factor analysis using Principal Components Analysis with Varimax rotation method was used. An internal reliability test was conducted. The factors were then examined by a regression analysis on deep learning.

3 RESULTS

3.1 Profile of the Respondents

The valid responses were 101. Male and female respondents were similar at 50%. The majority of the respondents (92%) were between 20 to 22 years old. 61% of respondents are studying in the Accountancy program while 36% are in the Accounting and Finance program. Year 3 and year 4 students contributed 61% and 39% respectively. About 48% had some experience in the co-creation of assessment.

3.2 Mean Ratings of Role Clarity, Ability and Motivation

Among the 19 statements of student readiness for cocreation, the highest mean rating recorded is a statement in motivation namely “I feel motivated to receive the incentives (e.g. marks) given by the subject lecturer after co-creating the MCQs”. These findings suggested that students considered receiving extra marks as an important inducement factor to engaging in the co-creation. Table 1 below depicts the mean ratings of all the statements.

Table 1. Mean ratings of role clarity, ability and motivation

Statement Items	Mean	Standard Deviation
RC1 I feel confident about how to co-create the MCQs effectively for deep learning purposes.	5.11	0.989
RC2 I am not sure how the co-creation of the MCQs can be used properly for deep learning purposes. (R)	3.66	1.283
RC3 I know what is expected of me to gain from the co-creation of MCQs for deep learning purposes.	5.04	0.958
RC4 I am clear about the process involved in the co-creation of MCQs for deep learning purposes.	4.87	1.128
RC5 I believe there are only vague instructions regarding how to co-create the MCQs for deep learning purposes. (R)	3.24	1.242
PA1 I am fully capable of co-creating the MCQs.	5.03	0.974
PA2 I am confident in my ability to co-create the MCQs.	5.01	1.005
PA3 Co-creating MCQs for deep learning purposes is well within the scope of my abilities.	5.06	1.018
PA4 I do not feel I am qualified for co-creating the MCQs. (R)	3.95	1.499
PA5 My past experiences will increase my confidence to successfully co-create the MCQs.	4.92	1.102
PA6 Overall, co-creating the MCQs for learning purposes on this subject sometimes involves things that are too difficult for me. (R)	3.46	1.213
PM1 I feel motivated to co-create the MCQs for deep learning purposes.	4.98	1.104
PM2 I feel motivated to share information with teaching staff in the process of MCQs co-creation.	5.12	1.003
PM3 I feel motivated to share information with my group members in the process of MCQs co-creation.	5.28	0.981
PM4 I feel motivated to obtain information from ChatGPT to get started with co-creating the MCQs.	5.07	1.160
PM5 I feel motivated to receive comments from teaching staff in the process of co-creating the MCQs.	5.25	0.984
PM6 I feel motivated to receive comments from other student groups in the process of co-creating the MCQs.	5.28	0.971

PM7 I feel motivated to read the course notes and/or learning materials provided by the teaching staff to help me co-create the MCQs.	5.33	1.096
PM8 I feel motivated to receive the incentives (e.g. marks) given by the subject lecturer after co-creating the MCQs.	5.39	1.039

3.3 Exploratory Factor Analysis of Student Readiness to Cocreation

The 19 statements were factor analyzed by the Principal Component Analysis with the Varimax rotation method. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .92 and the Bartlett's Test of Sphericity was 997.846 with a significance level of .000. The results implied that the data matrix had a sufficient correlation to the factor analysis. The study followed the rule of thumb (Hair et al., 2005) that (a) the eigenvalue of the factor must be higher than 1.0; (b) the factor loading of each statement needs to be greater than 0.5; (c) the alpha value obtained from the reliability test should be greater than 0.5, and (d) the total variances must be higher than 50%.

A reliability test was conducted. The Cronbach alpha of role clarity is .813, ability is .872, and motivation is .929. Five statements were subsequently deleted due to double loadings. They are "RC I am not sure how the co-creation of the MCQs can be used properly for deep learning purposes. (R)", "RC5 I believe there are only vague instructions regarding how to co-create the MCQs for deep learning purposes. (R)", "PA4 I do not feel I am qualified for co-creating the MCQs. (R)", "PA6 Overall, co-creating the MCQs for learning purposes on this subject sometimes involves things that are too difficult for me. (R)" and "PM4 I feel motivated to obtain information from ChatGPT to get started with co-creating the MCQs." All items attained the statistical requirements as mentioned. Two factors were derived. Factor 1 is perceived role clarity and capabilities, and factor 2, is inducement for motivation.

3.4 Regression Analysis of Student Readiness to Cocreation and Deep Learning

Stepwise estimation was applied to uncover the relative weightings of these factors and to determine the best predictor of the dependent variable, i.e. deep learning (Sig. <.001). The results showed that a two-factor model exerted positive influences on the dependent variable of deep learning. The overall regression model was significant, $F(1, 99) = 185.997$, $p < .001$, $R^2 = .666$. The equation in this multiple predictor model is that "Y (Deep Learning) = 1.095 + 0.673 (Inducement for Motivation) + 0.162 (Perceived Role Clarity and Capabilities)".

4 CONCLUSIONS

This study examined the factors of student readiness in co-creation. This is an important attitudinal construct to understand if students are prepared to be involved in the cocreation activity. The results of the Exploratory Factor Analysis confirmed the factors that are aligned with the previous literature (Meuter et al., 2005). First, the construct of student readiness includes role clarity and capabilities. In this study context, this refers to the perception of students whether they feel confident and capable of developing MCQs and if they are clear about the process involved. Second, inducement for motivation refers to the inducement such as the incentives offered by the instructors after developing the MCQs, and feedback from the instructors and peers in the exchange process, etc. In order to increase the likelihood of success in partnering with students for cocreating tasks, incorporating the construct of student readiness for cocreation in pre-survey is highly recommended. Instructors can then provide additional information, feedback, and support to keep a motivated momentum throughout the process.

Another interesting finding from the regression analysis is that deep learning can be achieved by these two factors, especially inducement for motivation. Students can achieve higher-order thinking skills by developing MCQs with their group members if the inducements are clear to them. Hence, instructors can solicit feedback from participants to improve the inducement factors. All in all, the process of meaningful cocreation requires a concerto effort between the academic staff and students. Understanding the important psychological state of mind that prepares students before the cocreation activity is imperative in the design process.

4.1 Limitations

The design of the study is cross-sectional. The participants were third year and fourth year students from Accountancy and Accounting and Finance programs in Hong Kong. As this is a pilot study to validate the construct's reliability of student readiness in cocreation, further research with a larger sample size is suggested.

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