THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

COLLEGE OF PROFESSIONAL AND CONTINUING EDUCATION
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Centre for Pedagogic Research

Does learner generated video matter? Student engagement and learning effectiveness in learning computer software

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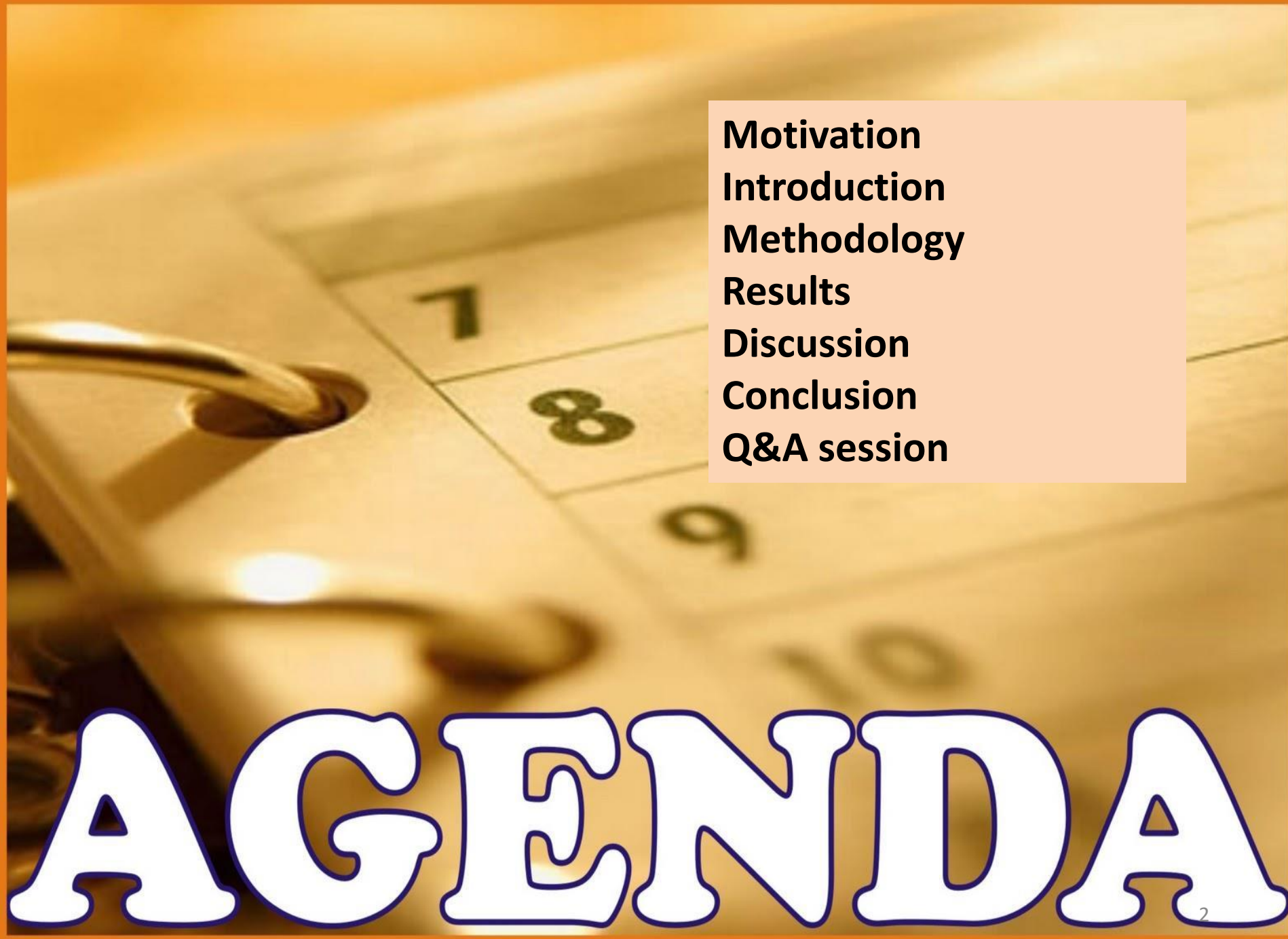
16 January 2023

The work described in this presentation was fully supported by a grant from the College of Professional and Continuing Education, an affiliate of The Hong Kong Polytechnic University.

This event is funded by the College of Professional and Continuing Education (Project No.: 13/CPCE/2021)



- Motivation
- Introduction
- Methodology
- Results
- Discussion
- Conclusion
- Q&A session

Abstract

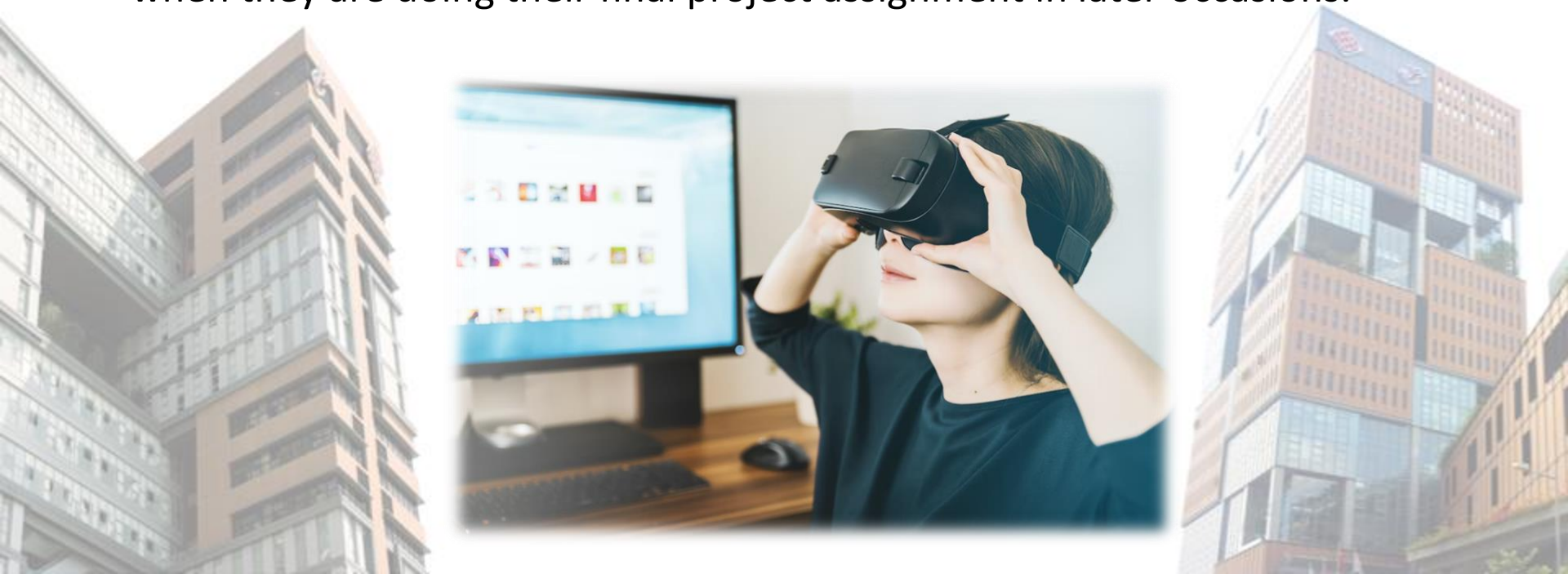
Purpose: The purpose of this study is to test whether learner generated video (LGV) could enhance the effectiveness of the learning.

Finding: It was found that the experimental group of students recall what they have learned.

Contributions: This is a pioneering study examining the effect of learner generated video in learning software. This study provides an empirical evidence of Stimulus-Organism-Response theory. Students learn the software when they construct their own representations.

Motivation

Students usually forget what they learned in using the software. In the past, students were asked to practice many times before they really remember and master the steps in doing something. In my marketing research courses, students need to use the software SPSS. Although students have some practices in the computer laboratory, they need to ask the teacher in details when they are doing their final project assignment in later occasions.



Motivation

CPCE teachers are asked to make videos for lectures. Why not for students making their own video?

Introduction

Making a video is not a new thing. It is quite common as people always have a smart phone in his or her hand.

Introduction

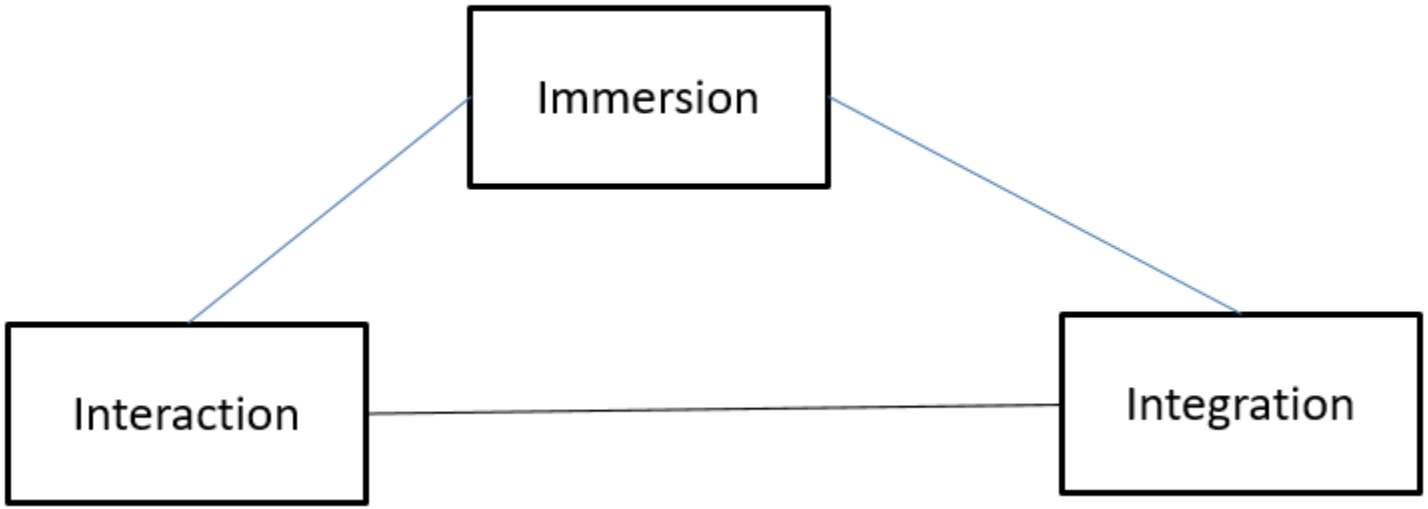
It was argued that student generated video could help them to reach higher level of learning, not confined to the understand the material (Marley, 2014).

Theoretical foundation and development of hypotheses

Stimulus-Organism-Response theory

The stimulus-organism-response (SOR) theory is a well-known method to analyse various variables into three categories: stimulus, organism and response. Stimulus is external or environmental shock that affecting some other constructs. Organism represents intermediate state and response is represented by a behaviour. It would be similar to the logic of input–process–output. It was a popular psychology theory to explain customer behaviour. It has been used in other management and human resources fields.

Literature review



Immersion

Immersion is a major advantage when students are asked to make a video. Students are much more involved in the session. It is related to behavioral engagement.

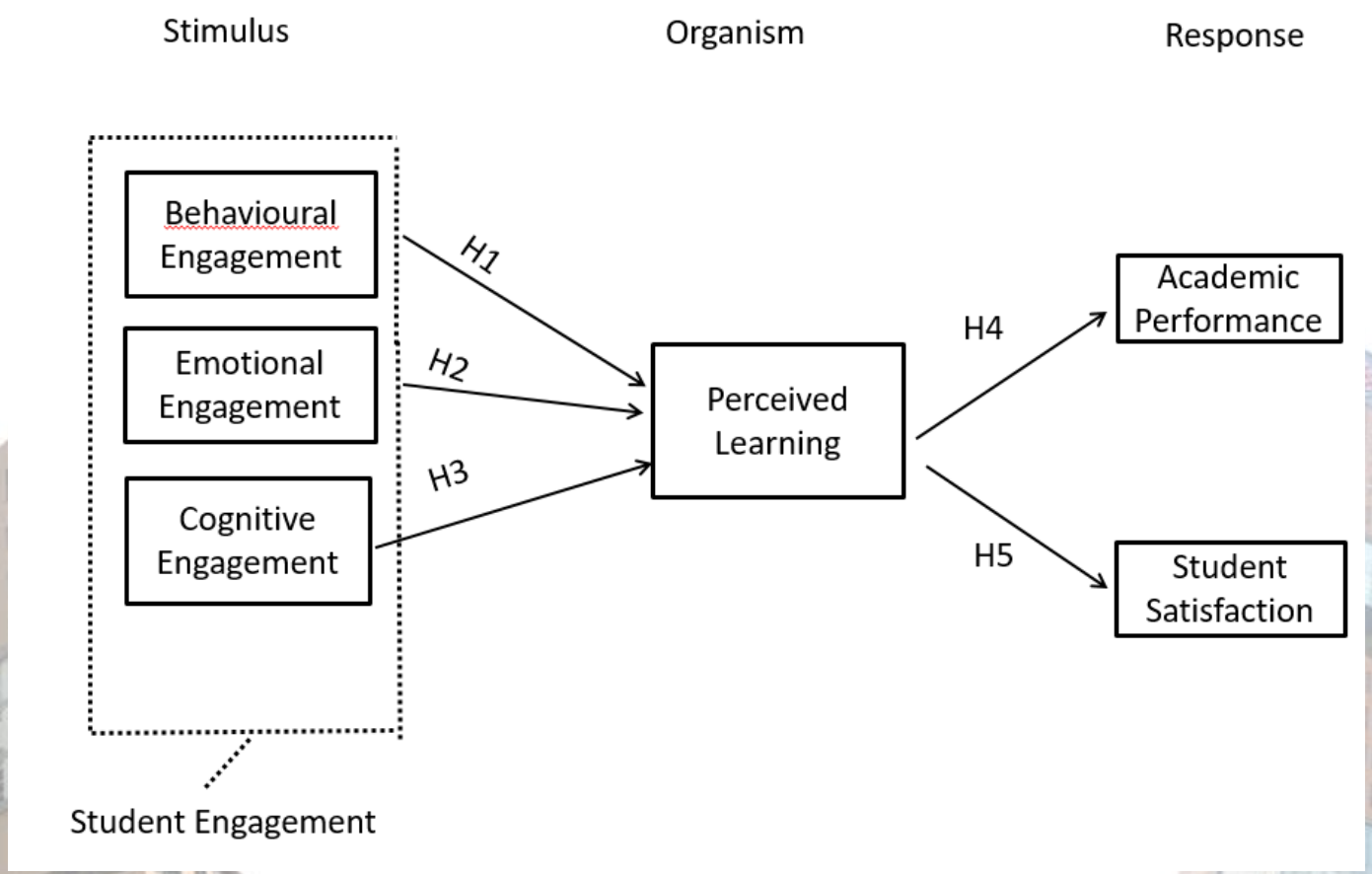
Interaction

More student to student interactions and student to teacher interactions. It is because students are presented with a problem they have to solve. That is why they might need to ask their fellow classmates or teachers. Also, they are also need to teach their fellow classmates. It is related to emotional engagement (Wut & Xu, 2021).

Integration

Integration of subject matter to a practical exercise using student generated video (SGV). For example, we incorporated marketing research in student generated video exercise. It is related to cognitive engagement (Dubovi, 2021).

Research model



Hypotheses

- Hypothesis 1: behavioral engagement in SGV will positively associate with perceived learning
- Hypothesis 2: emotional engagement in SGV will positively associate with perceived learning
- Hypothesis 3: cognitive engagement in SGV will positively associate with perceived learning
- Hypothesis 4: perceived learning in SGV will positively associate with academic performance
- Hypothesis 5: perceived learning in SGV will positively associate with student satisfaction

Methodology

An empirical, positivist, cross-sectional approach was used in this study. Our sampling method is by a judgmental sampling. This is a form of convenience sampling in which elements are selected based on the judgement of researchers. My target population is college students studying in a tertiary institution.

Data collection

Three classes of marketing students are respondents of our survey. They are studying Marketing Research subject in semester 1, 2022/23.

A record of briefing how to do a recording using a software called Screen-O-matic was presented. Then students were asked to complete a making video exercise (max 4 min) using the software or otherwise. At the end they were asked voluntary in fill in the survey. Total 32 students responses were recorded.

Scenario

In doing Chi-square test, we should not proceed if more than 20% of the cells have the expected count is less than 5.

There is a need for to do the recoding. We try to combine some columns into a single column.

Have you heard about EW's recent "Gift Redemption Programme" * How often do you make purchases in any convenience stores? Crosstabulation

Count

		How often do you make purchases in any convenience stores?					
		Never	Almost never	Occasionally	Often	Very often	Total
Have you heard about EW's recent "Gift Redemption Programme"	Yes	0	0	80	172	118	370
	No	1	1	21	5	2	30
Total		1	1	101	177	120	400

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	61.851[a]	4	.000
Likelihood Ratio	43.979	4	.000
Linear-by-Linear Association	38.638	1	.000
N of Valid Cases	400		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .08.

Important Note!! As a general rule, you should not use the chi-square test if more than 20% of the cells have expected values of less than 5 or if the minimum expected frequency is less than 1

The use of "Re-code" Function

Have you heard about EW's recent "Gift Redemption Programme" * How often do you make purchases in any convenience stores? Crosstabulation

Count

		How often do you make purchases in any convenience stores?					
		Never	Almost never	Occasionally	Often	Very often	Total
Have you heard about EW's recent "Gift Redemption Programme"	Yes	0	0	80	172	118	370
	No	1	1	21	5	2	30
Total		1	1	101	177	120	400

- By regrouping the categorical variables in a crosstab, the previous problem can be solved.
- ***But, excessive /abusive use of "re-code" may cause serious biased results !***

Command: Transform / Re-code / into different variables

Analysis

Partial least squares structural equation modelling (PLS-SEM) was used in the data analysis. The PLS-SEM method is to explain the variance of dependent variables, which fits the purpose of this study. This method is suitable for non-normal data and small sample sizes. With minimum path coefficient of 0.21 to 0.30 and significant level of 5%, the minimum sample size is 69.

This method entails two steps, which firstly tests the reliability and validity of the measurement model and secondly tests the structural model (Hair et al., 2022). The sample size of our study might not fulfil the analysis requirements.

Measurement

Measurement items from five established, self-reported scales.

Construct Name and abbreviation	Items	Adapted from
Behavioral Engagement (BE)	I follow the rules of supply chain software in class I am able to consistently pay attention when I am using supply chain software I complete supply chain assignment on time	Sun & Rueda (2012)
Emotional Engagement (EE)	I like using supply chain software in class I feel excited by my work using supply chain software Using supply chain software is fun I am interested in the work using supply chain software I feel happy using supply chain software	
Cognitive Engagement (CE)	I study at home even when I do not have a test I try to look for some course-related information on other resources such as television, journal papers, magazines, etc. When I read the course materials, I ask myself questions to make sure I understand what it is about I read extra materials to learn more about things we do in the online class If I do not know about a concept when I am learning in the software class, I do something to figure it out	
Satisfaction (S)	Overall, I am satisfied with this class This class contributed to my educational development This class contributed to my professional development I am satisfied with the level of interaction that happened in this class In the future, I would be willing to take use supply chain software again	Kuo et al. (2014)
Academic Performance (AP)	I am confident about the adequacy of my academic skills and abilities I feel competent conducting my course assignments I have learned how to successfully perform my coursework in an efficient manner	Yu (2010)

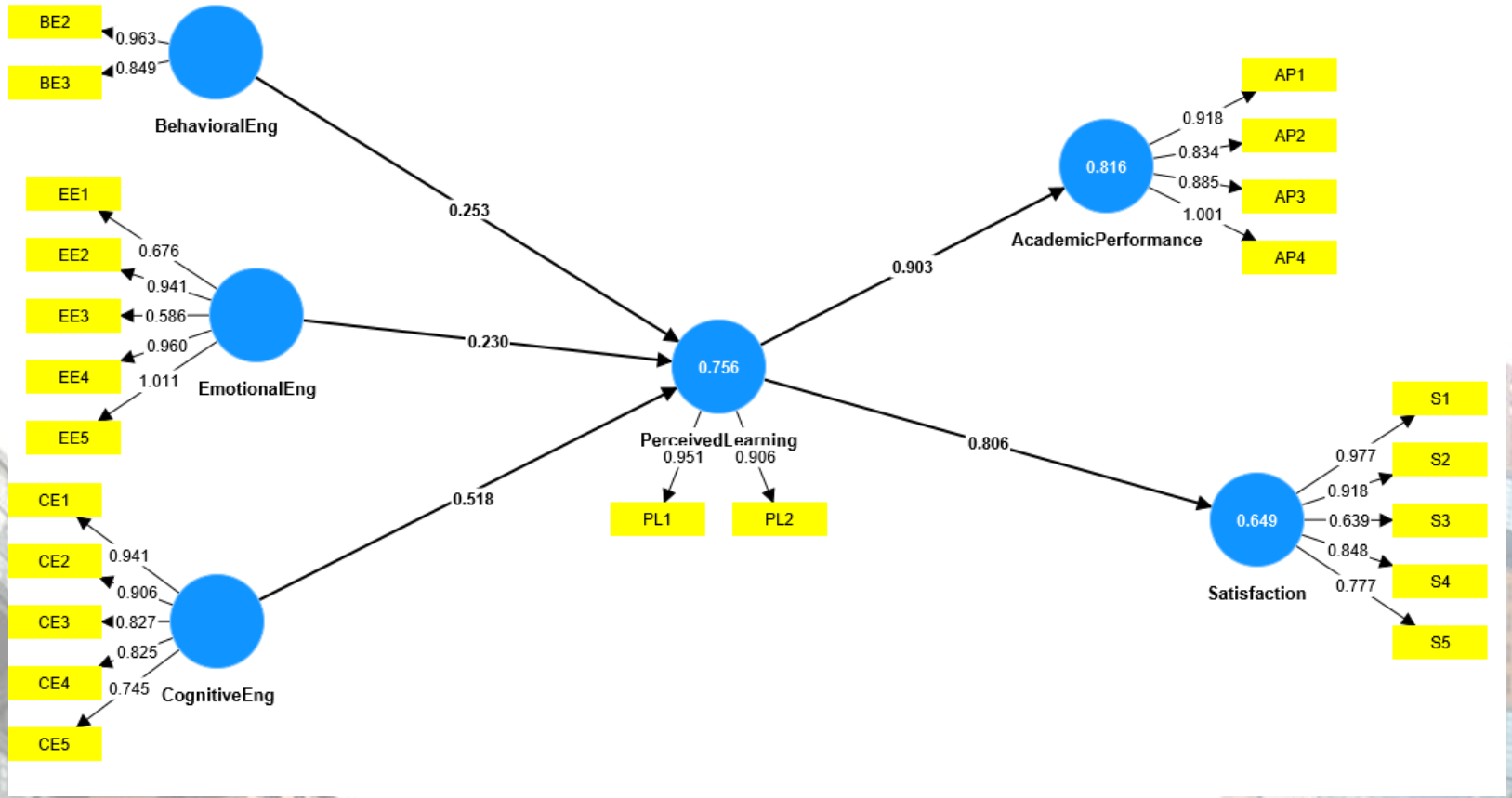
Reflective Measurement Model

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AcademicPerformance	0.951	0.956	0.952	0.831
BehavioralEng	0.900	0.910	0.903	0.824
CognitiveEng	0.930	0.934	0.929	0.725
EmotionalEng	0.933	0.955	0.927	0.726
PerceivedLearning	0.926	0.927	0.926	0.863
Satisfaction	0.927	0.935	0.922	0.706

Assessing Discriminant Validity

	AcademicPerformance	BehavioralEng	CognitiveEng	EmotionalEng	PerceivedLearning	Satisfaction
AcademicPerformance	0.912					
BehavioralEng	0.647	0.908				
CognitiveEng	0.840	0.539	0.852			
EmotionalEng	0.639	0.619	0.662	0.852		
PerceivedLearning	0.903	0.674	0.806	0.729	0.929	
Satisfaction	0.779	0.795	0.825	0.720	0.806	0.840

PLS model


BE2
BE3
0.963
0.849
BehavioralEng
EE1
EE2
EE3
EE4
EE5
0.676
0.941
0.586
0.960
1.011
EmotionalEng
CE1
CE2
CE3
CE4
CE5
0.941
0.906
0.827
0.825
0.745
CognitiveEng
0.253
0.230
0.518
0.756
PerceivedLearning
0.951
0.906
PL1
PL2
0.903
0.816
AP1
AP2
AP3
AP4
0.918
0.834
0.885
1.001
AcademicPerformance
0.806
0.649
S1
S2
S3
S4
S5
0.977
0.918
0.639
0.848
0.777
Satisfaction

Hypotheses testing

Table 4: Results of Hypotheses Testing

Hypothesis	Item	(β) Path Coefficient	*p*-value	Result
H1	Behavioral engagement >> Perceived Learning	0.253	0.000***	Supported
H2	Emotional engagement >> Perceived Learning	0.230	0.000***	Supported
H3	Cognitive engagement >> Perceived Learning	0.518	0.000***	Supported
H4	Perceived Learning>> Academic Performance	0.903	0.000***	Supported
H5	Perceived Learning >> Satisfaction	0.806	0.000***	Supported

(Bootstrap samples = 5000, $n = 32$ cases)

***$p < 0.001$.

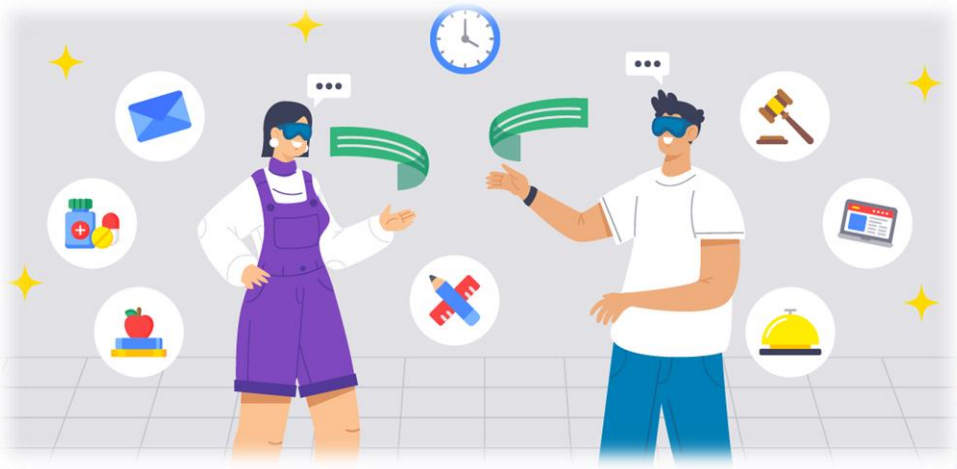
Discussions

- Our research concurs previous research (Orus et al., 2016) between student engagement and perceived learning during the pandemic.
- Also, in line with results by Duque (2014) regarding perceived learning and satisfaction; by Togaibayeva et al. (2022) regarding satisfaction and academic performance.

Managerial implications

Provide an empirical evidence on SGV could enhance the student engagement.

Students' attention can be improved and they could check back their video for their own project.



Conclusion

Student generated video can increase quality of education by enhancing student satisfaction and academic performance.

Future research directions

Future research directions are on combination of gamification or simulation and SGV; other topics including accounting, financing, management and human resources management can be explored.

Limitations

- Control group should be introduced
- Rely on self-report data
- Quiz could be introduced to test the effect of memory

Questions

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THANK YOU