

Undergraduates Academic Performance on Digital Curation in Open Distance Learning (ODL) during COVID-19

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Abstract

The main objective of this study to define the curation contents as a new mechanism in teaching during Covid 19 in Open Distance Learning (ODL) and forecast precondition of new generation way of learning and as alternative methods in delivering information and knowledge. The goal of this investigate is to interpret the curation cast by assembly “digital teaching displays” in an Open Distance Learning provided during study from home, the theory of engagement been used which have five items; behaviour engagement, cognitive engagement, emotional engagement, and agentic engagement that considered the students’ academic accomplishment. The research respondents were first year semester diploma students from Universiti Teknologi MARA Melaka and 85 students willing to participate with purposive sampling method technique which apply judgment to participate in the study. The quantitative will be executed for the data, the study framework was assessed by utilizing Smart PLS 3.0 (Partial Least Squares Structural Equation). The expected research states a categorization contained in the curation contents, to improve students’ commitments in education. The discovery offers to the educational structure a valuable input while producing an actual learning familiarity where expertise knowledgeable can be 'planned' to assist students. The finding strengthens the newest generation students’ understanding which demand individual and outgoing skills, e.g., cognitive, and meta-cognitive skills from a personal and community point of view.

Keywords: Digital Curation Contents, Open Distance Learning, Engagement Theory, Students Achievement.

1. Introduction

The encouragement for this research derived from thoughtful discussions of open distance learning movement forced by COVID-19. The curation moves were the switches in delivering education in reaction to COVID-19 apart from wide-ranging issues of technology utilization,

but also on the teaching issues for lecturers. For instance, course books have made the academic essentials for universities for years, the first curated libraries for academics. Books in the library as curators have the influence to lead students focus on ways found out through exploring book contents how many are relevant, or not related. The deliberate of open distance learning during Covid 19 unfavourably generated the library operation to closed temporarily. The digital curation alternative makes substantial content that suits what students need to learn, while lecturers at the same time possessing that curation in Rovai, A.P. & Jordan, H.M., (2004).

As lecturers or teachers, they should get “recognition” for the originality and input of digital content because of the time consuming and currency cost of producing the contents. The optimistic intuition of creating digital contents that will lend to student engagement is hard to abandon, educational curating interrupts old version of common course preparing method. Now most of the lecturers and teachers become curators shifted beyond, adapting from previous method of teaching preparing set of teaching materials; published teaching textbooks, for instance, provide teaching slides, oral presentation, tutorial session within familiar limits of the present textbook’s gathering.

As curators request extensively and widely multi-task and skills demanding more than learning materials. The emotional part of digital curation the contents development, the lecturers should focus their teaching audiences for general or specific groups it can be an underestimated form of creativity, perhaps because of the universal lens of intellectual openness and its concentrate on ensuring what lecturers do in each of classrooms as mentioned by Haughey, D. J. (2007).

2. Literature Review

2.1 Curation

The definition of curation can be best defined as finding out, assembly, and displaying to the viewers on the specific contents, theme, subject or message. The initial stage of curation derived from a collection in a museum which worked as a protected and preserved the cultural heritage evidence, and the curators are the specialist with skills and knowledge who involve in interpretation of the heritage contents and responsible to maintain the condition of the materials of some categorize of tangible of historic entities. The curator makes choice to select, packaging, kept and share to the public or visitors of the museum. The curator skills include exhibit the information to the viewers responsible to conceive to influence the contents works of arts as mentioned by George, A. (2015).

2.2 Digital Curation

In recent times, boosts in contemporary technology have resulted in a greater the function of curator. The way of thinking that curation only limit in the art galleries or museum have changed into a wider scope, the advancement of technology has created an impact of the method of interpretation and the public the existence of technology curators expanding the number of audience or viewers and easily accessible in media largely in social media. The main objective curation digital is more on interactive purposes attracted more of influences beyond in the same place and spot (Bernard, H. R. 1996). This including other industry in banking, religion, marketing, and education. The curation innovation has changed the traditional approach as digital and public also embrace with this shifted with the multiple computer soft for video editing such as flipboard, pocket, newsletters and many more. The public able to self-educated

with the sparked of YouTube and editing software rather than become the audiences as said by Arnold, K. (2009).

2.3 Benefits of Digital Curation Approach

The benefits of digital curation to world of technology depend on the objectives of the curators, and the target audiences. The reflective of the depend on the curators on the expertise, experience, and capabilities in influencing the viewers and the benefits as viewing audience depends on the filter the contents of the digital and determine the content is useful to them. The viewer knowledge and critical thinking is essential to describe the relevancy of the contents. The human intelligence connected between stories or events. Continues from the critical thinking and the next behaviour of human is the intention of sharing the contents. The emergence of online community, the organizer, the influencer normally expecting the increasing number of followers on the blog and the benefit of digital curation planned the important element that needed to add and shared with followers even the personal contents. The expectation of sharing is to circulate quickly with positive impacts cited by Belcher, M.C., (1991).

2.4 Digital Content for Education

The digital content really in demanding during movement control order (MCO) in March 2020, the educators are struggling finding ways to teach their students who stay at home. The initial stage of open distance learning in Malaysia with the objective to enhance students to access to learning material and communitaie with the educators. The initial opportunities thye objective to increase opportunities for students makingt education accesible in a timely manner anywhere. The educators skills on designing digital contents in adequate number is critical because to development the contents need few procedures including hardware. There are few steps; writing script, guiding, executing, editing, audio recording and presenting the gathering facts with a outline, narrative and themes. The curation derived from the history of exhibitions, the rising visuality and adaptation of the exhibition since the 1960s has driven a further involvement with its memoirs history. An imaginative engagement with the gathering has turn nearly a need for art museum, while this advances are always founded on the eternal collection, the shapes of demonstration progressively take after those of the exhibition, exchanging the supposedly firm, and timeless collection display. At another level, the exhibition is converting itself to the curation attributes that break up the traditional formats of numerous thematic demonstrates in Schott, M., Chernish, W., Dooley, K.E., & Linder, J.R., (2003). The curation contents have a significant modernization since early 1990s, but more comprehensively since the early 2000s, appeared not simply on the fundamentals of the latest and enhanced operation of the demonstration, but also considered it, in a reason needed a expertise of the subject of study in sequence to build the commercialisation and understandable interpretation of the curatorial area in Baker, R. K., (2003). The overall process of advanced curation contain idea of demonstration, drafting for manuscripts, classifying, assembling, composing, evaluating and highlighting. The difficulty of COVID 19 pandemic in Malaysia education system makes the curation display is vital to enhance the learning obstacles and diverse and reinforce in providing information. Based on Antonio, A., & Tuffley, D. (2015), the curators assists the viewers by lessening the intricacy of examining piece of information . In education it is very convenient for the learners if the content curation among the target to expand students studying technique. The curation way has been enhance in the 2010's by the expansion of digital mechanism and

the triggered of Youtube made up of the increase of music business, low-cost appliances and softwares have transformed curation production by permitting recording, transcript, editing and controlling by particular softwares. The curation is beneficial tool to help students in studying because it offers the chance to screen the learning details within to the students common sense, learning abilities and interest about the classes.

Table 1: Curation Content Taxonomy

Timeframe	Basic ideas	Type of Organisation	Type of Structure	Result Contents	Share
Eternal	Proposals	Non-profit sources	Homepage	Learn	Simplify
Current	Beliefs	Corporate sources	Blogsphere	Link	Transform
Contemporarily	Notions	Broadcasting	Social networking	Manage	Transfer
Actual time	Thoughts	Public	Tertiary source	Organize	Transmit

Source: Author

2.5 The Benefits of Digital Curation Education during Covid19

Presently, in the domain of transmission capacities and equipment, learners are congested with information and the signs of the network are just too massive. The educational institution proposed Open Distance Learning is form of database system (DS), notably a training option to students to study topic of topic during Movement Control Order since year 2020 because of infectious of COVID 19, the need for supportive learning environment obtainable without constraints regards place and schedule. Consequently, it is a vital to investigate explanation on curation contents in open distance learning based on learners experience to motivate the application of Open Distance Learning Hazari, S., North, A., & Moreland, D. (2009). For this reason, required to classify the main causes curation contents to captivate students to encourage to benefit Open Distance Learning. The content of curation is the new concept this leads to Open Distance Learning to work. It is important to take the involvement and curiosity to students and affection to study and students obtain the info and obviously the contents procedure is vital to seize useful resolution based on excellence info. As lecturers, the ability of where to reach, communicate and distribution content that useful in inspiring work is crucial. As stated in YongqiangSun *et. al.* (2020), exist in the first-place rules of the curation, students want less on content, because students are overburden in background data, filter-free, context-in general form, the second part the curation contents have three approaches, educators whose experience for training skills such as lecturers from graphic designers, have depth experience makes their curatorial choices easier and less time consuming. The curation is not a straightforward activity, the process needs a training, need to be remunerated and expertise relies on output productions.

2.6 Digital Curation Content and Theoretical

The students' ccompetency normally refereed in multiple aspects and factors and frequently very broad to discuss. The students ability can be as professionalism in occupational competence. The education system the educators look for students generic and transferable skills to gain positions. In education system, the students achievement will be measured in

different role particularly in the technical skills, leadership skills required to perform a specific job. This study focusing on the micro-level of students achievement related to the digital content in education. As mentioned by Henseler, D. (2015), the students achievement can be measured based on the reflective approach and it goes beyond the individual intelligent, skills and competency. The tacit knowledge such as behaviour, is part of engaging in digital contents, the cognitive engagement, team engagement to measure the level of students achievement and training than the single-dimension model.

Students to involve in learning during movement control order has originated from oneself experiences in teaching during open distance learning context. The basic notion primary engagement theory this students suppose to be significantly engaged in education operations through connection with another person and rewarding assignments. Engagement theory is planned to be a conceptual framework for this research determined through technology-based learning. Its focus on significant education, it is very persistent with realistic approaches. It underlines cooperation among peer group and peer group of learners, it can be in line with situated learning theories. Since its emphasis on experimental and self-motivated study, it is same naturally to theories of mature learning. The appropriateness this research problem, the researcher applied self-acquaintances in digital curation and opinions of the expression of “engagement,” as study framework. In accordance to an idea’s Reeve and Tseng’s (2011) the student engagement is based by four elements; behavioral engagement, emotional engagement, cognitive engagement, and agentic engagement. The components of physiological engagement describes on hard work, courage, participation, and conformity with the course of study (Wentzel, 2003; Reeve & Tseng, 2011).

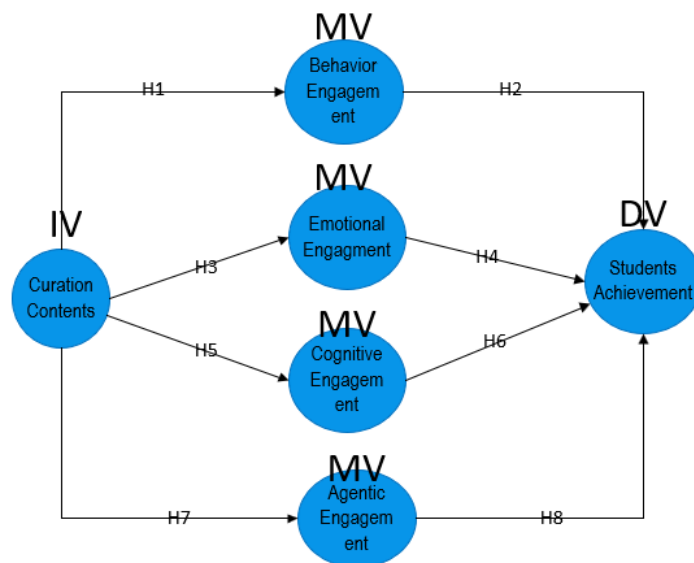


Fig. 1: Study Framework Reflective Engagement Model adapted from Wentzel (2003); Reeve & Tseng, (2011)

Note. IV: independent variable; MV: mediator variable; DV: dependent variable.

The effort usually assessed according to intellectual in movement between up and down endeavor reflection. The decision usually explain the person desires, requirements, motivation within the people environment. The attribute of person achievement comprise the choice then direct to individual’s behavior. The decision, is a mind of direct behavior, the ability is sense of belief which concerns with class responsibilities to complete on time and the element is connectedness the feel of been committed, attached and joined with other followers in the class.

The emotional engagement as mentioned by Wentzel, (2003), Reeve & Tseng, (2011), as the level students trust a sense of relationship and “the level to which care and attention obtained” and different author outlined emotional engagement as individual feelings of matter, pleasure, worry, and irritation during attempts towards completion. Practically, cognitive engagement integrates with students’ integrate, abilities and styles to enhance their homework and projects (Metallidou & Viachou, 2007; Reeve & Tseng, 2011). The agentic engagement be possible determined as students’ effectiveness, beneficial, sensible participation into the command given by lecturers. For this investigation, one subject has been chosen the research purposes known as Introduction of Tourism Management to assess the curation contents and the subject was proposed under Open Distance Learning (ODL) and the the curation contents offers preliminary courses for Faculty of Tourism Management. The curation contents was develop by the assist of softwares create and design by the researcher known as Filmora movie maker version 10.0. The goal of the assessment of information was to assessment of information the impactof curation contents under the Open Distance Learning and the target constructs, will be the students accomplishment result. Therefore the following hypotheses are composed:

H1: There is a significant relationship between the digital curation contents and behaviour engagement effect of students achievement.

H2: There is a significant relationship between the behaviour engagement and students achievement.

H3: There is a significant relationship between the digital curation content and emotional engagement.

H4: There is a significant relationship between the emotional engagement and students achievement.

H5: There is a significant relationship between the digital curation contents and cognitive engagement.

H6: There is a significant relationship between the cognitive engagement and students achievement.

H7: There is a significant relationship between the digital curation contents and agentic engagement.

H8: There is a significant relationship between the agentic engagement and students achievement.

3. Method

3.1 Data Collection Procedure

The sample for this study were a number of 85 diploma students, semester one Diploma in Tourism Management from Universiti Teknologi MARA, Melaka. The curation content was display for 30 minutes, once they have completed viewing the contents, 25 questions were distributed and students were required to answer on google form. For data assessment, the PLS SEM at has been at and this assessment enables researcher to examine the study framework, at the simultaneously evaluate the data collected. The research is assumed correlations between variables; behavior engagement, emotional engagement, cognitive and agentic engagement and construct students accomplishment. The items in study were assessed with validity as stated in table 2. For the level of knowledge, the explaining on were based on the cognitive perspective the items measure the degree to which students has engagement ranging from various domains, behaviour, cognitive, emotional, and agentic perspective. Among all these the indicators of

engagement items are reflective indicators, affected by a basic latent construct predictable. The sampling method for the participants was purposes sampling who registered for the subject HTT451 (An Introduction of Tourism Management). This examine curation contents contribution to students' academic achievement and respondents were enlisted through researcher students, the curation content was developed based on the researcher effort, the contents were a one-hour presentation, the students were required to fill up the survey after completed viewing the contents, Puteh and Azman Ong (2017) . The questionnaire asked respondents to signify the forms of information system used to answer the survey, the next stage respondents to aware of the existence of curation contents, and 85 students were completed the questionnaires. The quantitative employed a 7-point Likert Scale which 1 as strongly very disagree and 7 referred as strongly very agree and all questionnaires were returned.

Table 2.0 Demogarpic Descriptive

Construct	Frequency	Percentages
Gender		
Male	15	17%
Female	70	83%
Total		
Age		
18-19	52	62%
20-21	28	33%
22-23		3%
24-25	2	
26+	1	2%
Not Specified		
Ethnicity		
Malay	85	100%
Others		
Total		
Marital Status		
Never Married	85	100%
Married		
Divorced/Separated		
Total		
Highest level of Education		
SPM	42	50%
STPM/Matriculation	25	30%
Diploma		
Others	18	22%
Total Respondents	85	

3.2 Data Analysis Process

To examine the gathered information, the researcher employed IBM SPSS 23 software, for PLS-SEM was selected to check the study model by evaluating a structural model (Fornell & Larcker, 1981) using the SmartPLS 3.0 software. PLS-SEM was utilized to investigate a theoretical model by evaluating latent factors with various observed variables using regression-

based methods. For the procedure of PLS-SEM analysis the exploratory process and understanding path coefficients, variance of variable and the goodness of fit. The reason of this research applied PLS-SEM because of the smaller sample sizes, residual allocation, and estimation scales than AMOS SEM structural equation modeling (CB-SEM) (Zainuddin Awang (2012a, 2012b) . The list of requirement for estimating the measurement such as reliability, discriminant validity, and convergent validity of the data Hair, J. F.,(2012). The acceptance level of reliability using Cronbach’s alpha and composite reliability value is 0.7 and 0.8 or higher and this research carried out the discriminability analysis to prevent unnecessary redundant, value should lower 0.85. The factor analysis procedure is accomplished when the measurement components have satisfactory factor loadings for the individual latent constructs. To ensure a measurement model, a low factor loading should be deleted, this rate can be received from the outer loading shows the factor loading for each indicator included, author has proposed to apply the recent prepared ranges which is 0.50 or higher. Thus, the value below 0.50 should be removed from the measurement models. After the researchers have finished this procedure, the evaluation should be used in arrange to enhance reliability and validity.

Table 3.0 Properties of Constructs

Construct	Items	Loadings	AVE	CR
Digital Curation $\alpha = 0.81$	DC1	0.756	0.79	0.84
	DC2	0.752		
	DC3	0.830		
	DC4	0.810		
	DC5	0.659		
	DC6	0.709		
	DC7	0.712		
	DC8	0.678		
Behaviour Engagement $\alpha = 0.84$	BE1	0.744	0.82	0.82
	BE2	0.800		
	BE3	0.815		
	BE4	0.707		
Emotional Engagement $\alpha = 0.79$	EE1	0.553	0.82	0.73
	EE2	0.766		
	EE3	0.500		
	EE4	0.821		
	EE5	0.742		
Cognitive Engagement $\alpha = 0.82$	CE1	0.718	0.83	0.77
	CE2	0.738		
	CE3	0.802		
	CE4	0.755		
	CE5	0.785		
Agentic Engagement $\alpha = 0.72$	AE1	0.521	0.69	0.68
	AE2	0.512		
	AE3	0.503		
	AE4	0.578		
	AE5	0.502		
	AE6	0.500		
Students Achievement	AS1	0.634	0.66	0.79

$\alpha = 0.70$	AS2	0.735
	AS3	0.742
	AS4	0.756
	AS5	0.765

CR= Composite Reliability; AVE= Average Variance Extracted;
* All item loadings were significant $p < 0.001$

In Table 3.0, the convergent validity is the assessment to evaluate the degree of correlation of degree indicators of the similar construct that are in study framework. To set up convergent validity, the factor loading of the indicator, composite reliability (CR) and the average variance extracted (AVE) must be considered in Zainudin Awang, (2010). The value ranges from 0 to 1. AVE value should more than 0.50 so that it is sufficient for validity. Discriminant validity is divergent from one another. It also estimates the degree of differences between the duplication constructs. The discriminant validity can be provision by cross-loading of indicator. By looking at the cross-loading. The research model has five exogenous (DC, BE, EE, CE, and AE) and one endogenous construct (SA). The bootstrapping procedure with a resample of 1000, as recommended by Hair Jr. *et al.* (2014), the coefficient of determination (R^2) values for BE, EE, CE, AE, and SA were 0.511, 0.651, 0.498, 0.025, and 0.598, respectively refer to Figure 2.0.

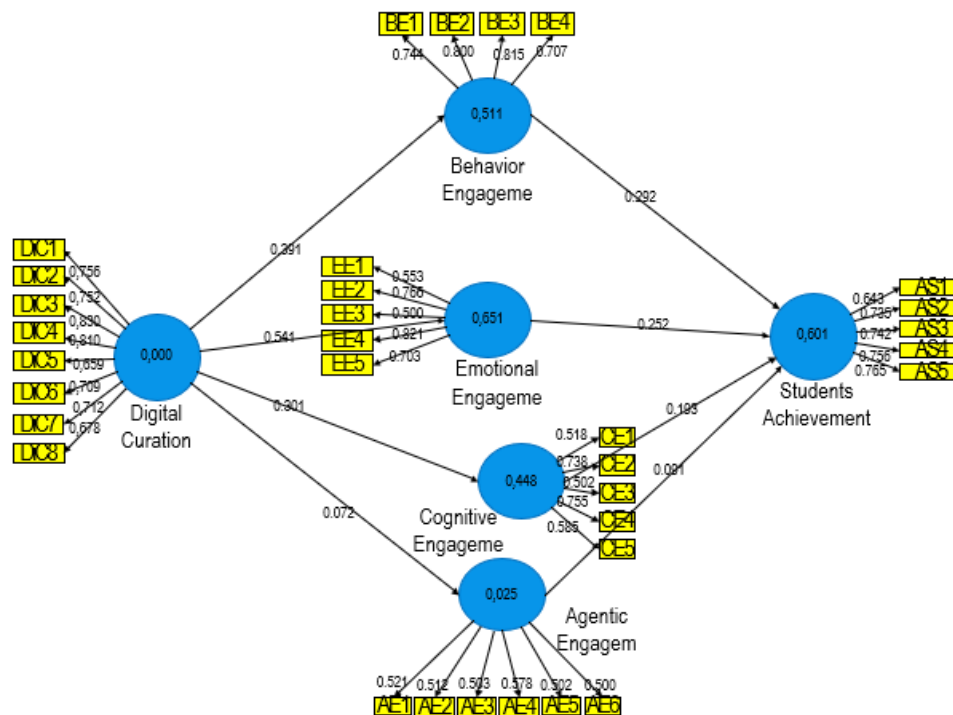


Figure 2.0: Result of Reflective Structural Model

Table 3.0: AVE value based on fornell-larcker test of discriminant validity

Variables	Curation contents	Behavior Engagement	Cognitive engagement	Emotional engagement	Agentic engagement	Students Achievement
Curation contents	0.791					

Behavior	0.690	0.812				
Engagement						
Cognitive engagement	0.258	0.229	0.831			
Emotional engagement	0.253	0.297	0.390	0.821		
Agentic engagement	0.478	0.237	0.231	0.261	0.691	
Students Achievement	0.030	0.447	0.251	0.211	0.251	0.662

Note: AVE values are in bold

5.0 Result of Hypotheses Testing

SmartPLS 2.0 was used to test the structural model and hypotheses (Ringle et al., 2005). A bootstrapping procedure with 300 iterations was performed to examine the statistical significance of the weights of sub-constructs and the path coefficients (Chin et al., 2008). Figure 1 shows the results of the analysis. The corrected R2s in Figure 1 refer to the explanatory power of the predictor variable (s) on the respective construct.

Table 4.0: Hypotheses, path coefficients, and results

	Hypotheses			Path	t-stat	p-value	Results	
				h				
H1	Curation engagement	Contents	>	Behavior	0.39	7.24**	0.001	H1 is supported
H2	Behavioural engagement		>	Students' achievement	0.29	4.12**	0.001	H2 is supported
H3	Curation engagement	Contents	>	Emotional engagement	0.54	8.35**	0.001	H3 is supported
H4	Emotional engagement		>	Students' achievement	0.25	2.80*	0.01	H4 is supported
H5	Curation engagement	contents	>	Cognitive engagement	0.30	5.66**	0.001	H5 is supported
H6	Cognitive engagement		>	Students' achievement	0.19	3.46*	0.01	H6 is supported
H7	Curation contents		>	Agentic engagement	0.07	0.17	<0.001	H7 is not supported
H8	Agentic engagement		>	Students' achievement	0.09	0.12	<0.001	H8 is not supported

*Significant at $p > 0.05$, ** $p > 0.01$, *** $p > 0.001$

In table 4.0, the factors directly influencing the actual usage of Open Distance Learning, all hypotheses were statistically significant with a confidence >95%. The hypothesis of a relationship between on curation contents on behavioural engagement directly influencing the behavioural engagement to use Open Distance Learning ($\beta = 0.39, t > 7.24, p < 0.001$), behaviour engagement directly influencing students achievement ($\beta = 0.29, t > 4.12, p < 0.001$), curation contents directly influence emotional engagement ($\beta = 0.54, t > 8.35, p < 0.001$), the emotional engagement directly influence students' achievement ($\beta = 0.25, t > 2.80, p < 0.01$),

the Curation contents directly influence Cognitive engagement ($\beta = 0.30, t > 5.66, p < 0.001$), Cognitive engagement directly influence Students' achievement ($\beta = 0.25, t > 2.80, p < 0.01$). Those hypotheses that were not supported were of relationships between Curation contents directly influence Agentic engagement ($\beta = 0.07, t < 0.17, p > 0.001$), between Agentic engagement directly influence Students' achievement ($\beta = 0.09, t < 0.12, p > 0.001$).

6.0 Discussion

Based on the result the suggested engagement model suggested emotional understanding and confirms the affirmative connections of the engagement theory between curation contents, behaviour engagement, emotional engagement, agentic engagement, and students achievement. This investigation showed a confident connection on the curation contents, behaviour engagement, emotional engagement. The open distance learning program require to firm new strategy and method on planning the curation contents. Currently, components of the contents are quite unclear, and it was performed without an appropriate categorization that can promote the students in study. It is significant to comprehend the degree of students' knowledge on the contents according to their reasoning abilities and it is vital to plan classes that produce possibilities for engagement to occur. The essential is for educational creators to have expertise to assist university, find out how to make classes more attractive for the students. Strengthen Open Distance Learning for group engagement as collaborative learning, team-based learning (TBL), and problem-oriented learning (POL). This method has value, should be incorporate in the curation contents is a blend of educator-student approach. Motivate lecturers to involve curation contents to associate student attentiveness, students are fascinated in subjects that virtual oriented. Grown up students are self-motivated, favour a repetition in the teaching, the subject should according to the students capabilities and abilities. Encourage lecturers to benefit content curation that imitate employment reality. The taxonomy should rely on case-based reasoning dispose to working environment.

7.0 Conclusion

From the finding there is a relationship between the curation contents and emotional engagement in learning. Whenever students are feelingly engaged, the readiness is higher and consequentially to take part in class. Number two, significant effect in finding was the behaviour engagement, how the students communicate with lecturers, discussion during tutorial class, lecturers further describe curation contents, the wonder, react based on display, communicate with friends, based on remarks column. The behaviour engagement separated into the passive, active engagement, chance of students cooperating with other students and interacting with lecturer solely. The finding suggest that curation contents can work an essential role in the learning and benefits as a digital benefits request for knowledge. Replacement curation digital in literacy system further improve by current debates, discourses, consultations, dialogues on digital literacy and academic mechanization. In future, additional study on the industrial requirement, employment competencies of curation contents at universities in Malaysia. However, further consideration on the procedures, policy, and regulations the issue of copyright, patent, and ownership.

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