

Evaluation of Students' Engagement and Motivation to Participate in Virtual Events

Sheikh Ali Azzran Sh Said^{1*}, Farrah Norizzah Mohd Yussof¹,
Shaza Rina Sahamir¹, Julitta Yunos¹, Mohd Afzan @ Noorawavi Mohamed²

¹*Construction Management, School of Construction Management and Quantity Surveying, College of Built Environment, Universiti Teknologi MARA 40450 Shah Alam, Selangor, Malaysia*

²*Faculty of Built Environment, Universiti Malaysia Sarawak (UNIMAS), 94300, Kota Samarahan, Sarawak, Malaysia*

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ABSTRACT

The swift change of physical to online classes has significantly changed the educational landscape in the era of the new normal. The use of the Internet for online learning has soared significantly, and students are highly dependent on it by intensively and regularly attending classes. The development of online learning offers opportunities not only academic but also extracurricular activities such as virtual events to enhance students' engagement and motivation in the online learning environment. By using electronic communication such as Google Meet and WhatsApp, students are able to interact and demonstrate their skills, knowledge and confidence in virtual events regardless of their geographical location. Consequently, students are able to feel motivated and engaged with other students and, thus, build up their morale to participate in virtual events. The purpose of this research is to explore the characteristics of students' engagement and motivation across years of study and gender as factors affecting their participation in virtual student events. The Motivation and Engagement Scale (MES) was adapted, and quantitative analysis of descriptive statistics and an independent t-test were carried out. A simple random sampling of 122 undergraduate students from the construction management course completed the questionnaire. The findings show that overall, students are highly engaged and motivated to participate in virtual events. The research also revealed the underlying key factors of students' engagement and motivation. The contribution of this research reveals that the transition to online learning, including virtual events facilitated by tools like Google Meet and WhatsApp, significantly enhances student engagement and motivation, providing key insights for improving online educational experiences.

^{1*} Corresponding author. *E-mail address:* sheikhali@uitm.edu.my
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INTRODUCTION

The recent Coronavirus Disease (COVID-19) pandemic has precipitated a significant shift in the higher education sector, compelling both students and lecturers to transition from traditional physical classrooms to distance online learning (Sum et al., 2021). While this change was necessary to mitigate health risks, it has adversely impacted student engagement and motivation (Patricia Aguilera-Hermida, 2020). Existing research indicates that students often struggle with disorientation, distraction, and demotivation during continuous online lessons, primarily because their motivation in physical classroom settings is inherently stronger (Kemp and Grieve, 2014). Lecturers, similarly, have faced challenges adapting to the technological demands of delivering online instruction and assessments (Sum et al., 2021).

Despite these insights, a notable research gap exists in understanding how extracurricular activities, specifically virtual student events, can mitigate these challenges by enhancing student engagement and motivation in an online learning environment. Prior studies (Laux et al., 2016; Hersberger et al., 2007) suggest that virtual collaboration and a sense of community significantly influence students' persistence and engagement. However, these studies do not specifically address the role of virtual student events in this context.

Therefore, this study aims to explore how various virtual student events (e.g., kick-off meetings, webinars, e-games) can influence student engagement and motivation in the online learning environment. By focusing on these activities, the research addresses the gap in understanding the potential of virtual extracurricular engagements to support and enhance online learning experiences. This objective is crucial as it seeks to identify practical solutions for maintaining student motivation and engagement, thereby helping both students and lecturers adapt more effectively to online learning tools and platforms

Research Objectives

The aim of the study is to explore the characteristics of students' engagement and motivation across years of study and gender as factors affecting their participation in virtual student events. The objectives of this study are as follows:

- (i) To identify the characteristics of student engagement and motivation based on the 11 sub-factors.
- (ii) To differentiate how students' demographic characteristics, including year of study and gender, affect their engagement and motivation based on the 11 sub-factors.

LITERATURE REVIEW

Student Engagement

Previous reiterative literature has extensively discussed the concept of student engagement over the last decades and have often attributed students' involvement, participation and motivation as contributors to students' academic performance (Fisher et al., 2018). Student engagement is defined as the amount of time and energy spent by students on activities that are measured and tied to the university's desirable outcome, and what makes students motivated to participate in these activities (Kuh, 2009). According to Barkley (2010), student engagement is the on-going activities and outcomes attained from the collaborative interaction between a student's motivation and active learning. The most essential part of students' educational outcome is instilling positive learning becoming students (Reeve and Tseng, 2011). Thus, it does directly affect students' academic performance.

According to Kahu (2013), student engagement is a reflection of students' internal psychological state which consists of behaviour, cognition, and emotion. Fredricks and McColskey (2012) specified that student engagement is a combination of various elements of behavioural, cognitive, and emotional engagements. Behaviour engagement is related to students' presence, persistence and participation throughout the learning process (Fredricks and McColskey, 2012). The notion of participation includes involvement in academic, social, and extracurricular activities (Fredricks and McColskey, 2014). Students' behaviour engagement depends on whether he/she decides to follow the classroom's rules and regulations and resist misbehaving (Fredricks and McColskey, 2014). Meanwhile, cognitive engagement is related to students' reflective thinking, strategy, and also willingness to put in effort to master complex ideas and skills in the curriculum (Fredricks and McColskey, 2012). It is determined by the extent to which students invest in learning. Emotional engagement, on the other hand, emphasises on the level of positive and/or negative reactions towards lecturers, classmates, academics and the university (Fredricks and McColskey, 2012). A student may be emotionally engaged when he/she realises that he/she is an important part of the university environment. As students become physically distanced from the common setting of the university environment, he/she feels that it is becoming difficult to cope and adapt to the new normal of conducting lessons online. Nedelko (2008) argued that the online learning environment is complex as students are accountable for their own learning. Online learning is normally student-centred and requires a certain level of motivation (Nedelko, 2008).

Motivation

Several studies have shown that engagement emerges from students' motivation (Glynn, Brickman, et al, 2011; Patricia Aguilera-Hermida, 2020). Motivation implies students' intrinsic motivation to learn. It constitutes students' satisfaction in the activities they are involved in to achieve the desired goals (Patricia Aguilera-Hermida, 2020). Woolfolk (2016) identified motivation as the inner state that directs, initiates, and sustains behaviour. Patricia Aguilera-Hermida (2020) defined motivation as the behavioural intention or the relevance of an activity that is being perceived. Whenever a student is motivated, he/she will likely engage in activities that are self-regulatory to achieve the desired goals (Kemp et al., 2019). This aligns with a study by Albelbisi and Yasop (2019), which posited that highly self-regulated students exhibit greater positive motivation and self-efficacy in their learning processes by selecting their learning content, setting learning goals, and organising and managing their learning independently. There are two distinct types of motivation namely intrinsic and extrinsic motivation (Ryan & Deci, 2000). The former is associated with the natural interest of students and satisfaction in conducting activities, while the latter is related to conducting activities for a specific outcome rather than enjoyment (Ryan & Deci, 2000).

The global COVID-19 pandemic has impacted students' motivation and attachment to the university (Patricia Aguilera-Hermida, 2020; Parker et al., 2021; Chan et al., 2021). Online learning seems to have become the ubiquitous form of teaching and learning in higher education (Chan et al., 2021). Studies on motivational factors and online learning typically focus on students' learning within the context of formal curricula and learning environments (Parker et al., 2021).

Relationship between Student Engagement, Motivation and Virtual Events

Student engagement and motivation are essentially the crucial predictors of personal growth and learning in university (Kuh, 2009). The Motivation and Engagement Scale (MES) has been developed to measure the extent of student engagement and motivation through their participation in virtual events. The constructs of this scale are underpinned by the Motivation and Engagement Wheel (MEW) framework which is associated with human behaviour, cognition and affection. The motivation component is integrated into the MEW framework to respond better in terms of understanding and studying research engagement (Pintrich, 2003). Based on multiple theories of motivation such as the self-worth motivation theory, the expectancy-value theory and goal-theory, the MES depicts that engagement and motivation can be extended into four important factors which are *adaptive motivation*, *adaptive engagement*, *maladaptive motivation*, and *maladaptive engagement*, and 11 sub-factors (i.e., *self-belief*, *valuuing*, *planning*, *learning focus*, *task*

management, anxiety, persistence, uncertain control, self-sabotage, failure avoidance, and disengagement) (Martin et al., 2017).

The Wheel chart is organised into four (4) main quadrants, (a) adaptive engagement—reflects students' positive behaviours and performance in academic learning which constitute planning, persistence, and task management; (b) adaptive motivation—relates to students' positive attitudes and orientation towards learning, including valuing, learning focus and self-belief; (c) maladaptive engagement—associated with difficulty in students' learning behaviours, includes disengagement and self-sabotage; and (d) maladaptive motivation—connoting students' attitudes and orientations that inhibit their learning, and these include uncertain control, failure avoidance and anxiety (Martin et al., 2017; Yin 2018). All the 11 sub-factors correspond to a study by Fredericks et al. (2014), which also defined the elements of engagement (i.e., *behavioural, cognitive and emotional engagement*). Behavioural engagement is associated with positive (i.e., *planning, persistence and task management*) and negative (i.e., *self-handicapping behaviour and disengagement*) factors in the Wheel. Meanwhile, cognitive engagement is related with motivation factors that positively (i.e. *self-belief, valuing and mastery orientation*) or negatively (i.e. *anxiety, failure avoidance, uncertain control*) influence engagement. In summary, the Wheel chart is extensive and is a theoretically driven model for the understanding of engagement and motivation

The MES constructs have shown consistency and validity in measuring students' engagement and motivation (Fredericks & McColskey, 2012; Martin et al., 2009). Studies at a multitude of education levels including elementary, secondary, and tertiary have been conducted using MES as it is a valid tool for evaluating engagement and motivation across various events, including physical activity, workplace, sports and music (Martin, 2008). Recent studies have also extended the use of MES to investigate Asian students' engagement and motivation in various educational contexts (Yu et al., 2020; Yin, 2018). However, limited research has been done on students' engagement and motivation in the context of virtual extracurricular activities—virtual events.

Therefore, this study focuses on students' engagement and motivation to participate in virtual events. Students' engagement and motivation have multidimensional features that include behavioural, cognitive and affective/emotional, which are particularly relevant to students' participation in virtual events.

METHODOLOGY

Participants

The study was conducted at the College of Built Environment (CBE), Universiti Teknologi MARA. The Construction Management Studies was selected for this study as it is the first time ever it conducted a virtual event (i.e., e-CoMFEST) throughout the semester. A questionnaire designed for student feedback after each event does not require ethics approval but includes a prerequisite question that asks for consent to proceed before completing the questionnaire, Students were geographically dispersed and continued to carry on learning on online platforms. They met their lecturers regularly through online platforms (i.e., Google Meet, Cisco Webex, and Zoom) and communicated through social media (i.e., WhatsApp). A virtual event was conducted almost every week to keep the students motivated and committed to their first-ever virtual event in the new normal. All students from the Construction Management Studies (first-year students to final-year students) were persuaded to be involved and participate in the virtual events. The sample was collected using a targeted sampling technique. Data were gathered through self-administered questionnaires. A set of questionnaires were distributed to the students online using Google Forms. The overall response rate was 100% (122 students).

Instrumentation

To measure students' engagement and motivation to participate in virtual events, the study adopted the Motivation and Engagement Scale (MES) developed by Andrew J. Martin (Martin, 2007; Martin, 2009) that measures respondents' motivation and engagement and include adaptive motivation, adaptive engagement, maladaptive motivation, and maladaptive engagement. The 44-items measure 11 sub-factors that are self-efficacy (Se), valuing (V), mastery orientation (Mo), planning (PI), task management (Tm), persistence (Ps), anxiety(A), failure avoidance (Fa), uncertain control (Uc), self-handicapping (Sh), and disengagement (D). The questionnaire items used a 5-point Likert scale which ranges from 1= "Strongly disagree" to 5= "Strongly agree".

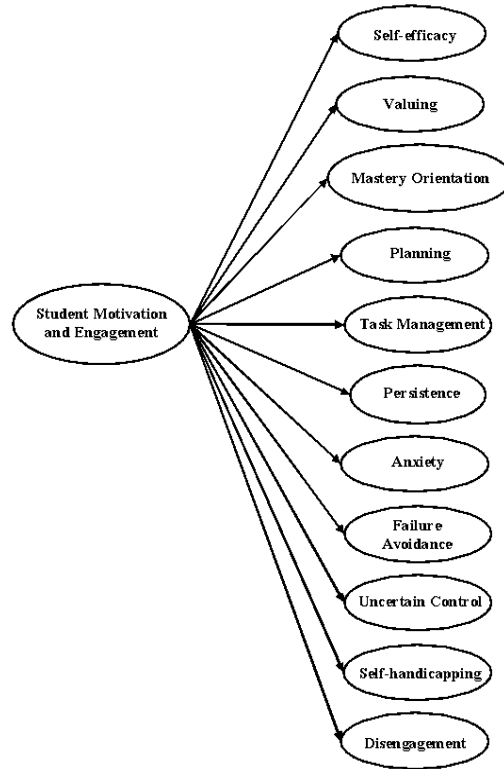


Fig. 1 11 sub-factors of SME (Martin, 2007; Martin, 2009)

The 11 sub-factors shown in Fig. 1 are abstracted variables. For each sub-factor, four constructs were designed and used for analysis. The researchers employed all items in the adopted MES to test its reliability in the Malaysian context. The Cronbach's alpha for the 11 sub-factors of student motivation and engagement are shown in Table 1. A Cronbach's alpha coefficient that is scaled more than 0.7 is of acceptable value (Bryman, 2012).

Table 1 Cronbach's Alpha for Student Motivation and Engagement

Concept	No. of Items	Alpha Value
Student Motivation and Engagement		
Self-Efficacy	2	0.83
Valuing	4	0.89
Mastery Orientation	4	0.88
Planning	4	0.88
Task Management	4	0.86
Persistence	4	0.86
Anxiety	4	0.93
Failure Avoidance	4	0.78
Uncertain control	3	0.89
Self-Handicapping	4	0.91
Disengagement	4	0.96

Limitations

Several limitations were faced in the collection of data. Firstly, the MES is a self-administered instrument which could result in possible distribution errors. The participants were informed during the briefing to reduce the error. Next, the sample of study is rather small, hence the findings are discipline-specific and cannot be over-generalised.

FINDINGS

Characteristics of Student Motivation and Engagement Based on the 11 Sub-Factors

Descriptive statistics were used to analyse the first objective of this study which is the characteristics of student motivation and engagement based on the 11 sub-factors. The overall mean score value for student motivation and engagement is high intermediate ($M = 3.72$) according to the interpretation of the 5-point Likert scale (Bryman, 2012). As shown in Table 2, students scored highest on both sub-factors of "valuing" ($M = 4.15$) and "persistence" ($M = 4.15$), while the lowest on "disengagement" ($M = 2.84$).

Table 2 Distribution of Student Motivation and Engagement

Descriptive Statistics	Variables											
	Se	V	Mo	Pl	Tm	Ps	A	Fa	Uc	Sh	D	SME
Mean	4.10	4.15	4.00	4.09	4.09	4.15	3.55	3.65	3.44	3.07	2.84	3.73
Standard Deviation	0.59	0.59	0.61	0.53	0.54	0.56	0.83	0.74	0.80	0.94	1.03	0.41

Note N=122; Se=Self-Efficacy; V=Valuing; Mo=Master Orientation; Pl=Planning; Tm=Task Management; Ps=Persistence; A=Anxiety; Failure Avoidance (Fa); Uncertain control (Uc); Self-handicapping (Sh); Disengagement (D); Student Motivation and Engagement (SME)

Differentiation in Student Demographics, Including Groups of Semesters and Gender on Student Motivation and Engagement Based on the 11 Sub-Factors

The second objective identified the scores of the 11 sub-factors of student motivation and engagement based on student gender and groups of semesters (i.e., lower and upper semesters) as shown in Table 3. The findings highlight that students scored higher in "valuing" across groups of semesters and gender. The only exception was for male students' rating patterns. They scored high in "persuasion" ($M_m = 4.21$). Other than that, lower semester students scored higher in all attributes of student motivation and engagement, except for the sub-factors of "self-handicapping" ($M_1 = 3.00$; $M_2 = 3.12$) and "disengagement" ($M_1 = 2.80$; $M_2 = 2.86$). Meanwhile, male students overtook female students in most sub-factors of student motivation and engagement. However, these findings appear to contradict those of Liem and Martin (2012), which found that, on average, female students scored higher than male students in motivation and engagement.

Table 3 Scores of the 11 sub-factors of student motivation and engagement based on differentiation

Student Group		Variables											
		SME	Se	V	Mo	Pl	Tm	Ps	A	Fa	Uc	Sh	D
Lower semesters	<i>M</i>	3.77	4.19	4.22	4.10	4.17	4.18	4.22	3.62	3.71	3.58	3.00	2.80
	<i>SD</i>	0.39	0.54	0.66	0.59	0.48	0.52	0.58	0.95	0.72	0.72	0.91	1.10
Upper Semesters	<i>M</i>	3.70	4.05	4.13	4.00	4.05	4.04	4.11	3.50	3.62	3.37	3.12	2.86
	<i>SD</i>	0.43	0.61	0.55	0.62	0.54	0.55	0.55	0.76	0.76	0.83	0.95	1.00
Male	<i>M</i>	3.77	4.17	4.13	4.04	4.16	4.07	4.21	3.45	3.53	3.43	3.23	2.97
	<i>SD</i>	0.39	0.57	0.46	0.45	0.43	0.48	0.48	0.95	0.90	0.82	0.80	1.00
Female	<i>M</i>	3.71	4.05	4.13	3.97	4.05	4.07	4.11	3.60	3.72	3.46	2.98	2.76
	<i>SD</i>	0.43	0.60	0.66	0.70	0.58	0.57	0.61	0.74	0.62	0.79	1.00	1.00

Note N=122; SME=Student Motivation and Engagement; Se=Self-Efficacy; V=Valuing; Mo=Master Orientation; Pl=Planning; Tm=Task Management; Ps=Persistence; A=Anxiety; Failure Avoidance (Fa); Uncertain control (Uc); Self-handicapping (Sh); Disengagement (D); *M* mean, *SD* standard deviation

Furthermore, the findings revealed a comparison between the sub-factors scores of student motivation and engagement across groups of semesters and gender as shown in Tables 4 and 5. The main focus of discussion in Table 4 is on whether there is any difference in the means of student motivation and engagement for the upper and lower semesters. As indicated in Table 3, the mean score for most sub-factors scores of student motivation and engagement for lower semester students are higher than upper semester students, except for sub-factors “self-handicapping” and “disengagement”. A statistical independent-samples t-test was performed to compare the mean of these sub-factor scores for the lower and upper semester students. The result suggests that there is no significance difference in the means of student motivation and engagement score for lower semester ($M=3.77$, $SD=.39$) and upper semester [$M=3.70$, $SD=.43$; $t(120) = 1.054$, $p=.294$] students. Similarly, there were no particularly significant results found in all sub-factors, suggesting no difference in these sub-factors between groups of semesters.

Table 4 Independent sample t-test analysis for student motivation and engagement according to semester groups

		Levene's Test for Equality of Variances				t-test of Equality of Means			95% Interval	Confidence
		F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std Error Difference	Lower	Upper
SME	Equal variances assumed	0.58	.811	1.054	120	.294	0.8306	0.7880	-0.7296	.23908
	Equal variances not assumed			1.068	86.480	.289	0.8306	0.7779	-.07157	.23769

Note: N=122; SME= Student Motivation and Engagement. The 11 sub-factors statistical results are not shown as there are no significant results.

Table 5 shows an independent t-test that was also performed to determine whether there is any difference in the means of student motivation and engagement and sub-factor scores for male and female students. Referring to Table 3, the mean for student motivation and engagement along with all sub-factor scores for male students are higher than female students. However, the statistical results suggest that there are no significant differences in the mean scores of student motivation and engagement for male and female students.

Table 5 Independent sample t-test analysis on student motivation and engagement according to gender

		Levene's Test for Equality of Variances				t-test of Equality of Means			95% Confidence Interval	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std Error Difference	Lower	Upper
SME	Equal variances assumed	0.58	.810	-.760	120	.449	-.05885	0.7742	-.21215	0.9444
	Equal variances not assumed			-.780	102.806	.437	-.05885	0.7546	-.20852	0.9081

Note: N=122; SME= Student Motivation and Engagement. The statistics of other sub-factors are not provided as no significant results were found.

DISCUSSION

The overall results of this study demonstrate that the majority of students tend to score higher in their motivation and engagement to participate in virtual student events. Previous studies have shown the MES instrument to be valid at many levels of student education (i.e., elementary, secondary and tertiary) and can be measured in different contexts such as the workplace, for music, sports and physical activities (Martin, 2009; Martin, 2008). Therefore, this study extends the use of the MES in the context of student participation in virtual events.

Using the MES, the authors measured the 11 sub-factors of self-efficacy, valuing, master orientation, planning, task management, persistence, anxiety, failure avoidance, uncertain control, self-handicapping, and disengagement. Students scored highest on the sub-factors of 'valuing' and 'persuasion'. The former is related to the extent to which students believe about the usefulness, importance, and relevance of virtual events, while the latter is concerned with the extent to which students sustain their engagement. In the MEW framework, the sub-factors of 'valuing' and 'persistence' fall under the quadrant of adaptive engagement and adaptive motivation, respectively. A study suggested that the more useful, relevant and important the students perceive learning activities, the more they engage (Yeager et al., 2014). In virtual events, students conduct various online activities including webinars, e-games and virtual runs. These online activities directly contribute to students' academic assessment. As a result, involvement in virtual events carry a portion of assessment grades which students are required to achieve to fulfil certain learning outcomes of their courses. This is in line with several studies that argued if students perceive a value of task in the subjects that they study, they are more likely to complete those activities (Wigfield et al., 2017). Other studies alluded that active involvement increases students' persistence. A successful virtual event will encourage collaborative online learning that integrates technology, communication and learning in a manner similar to what is encouraged in learning communities. Thus, promoting student engagement in higher education is crucial.

The lowest score among the sub-factors is for "disengagement" which indicates the degree to which students are inclined to give up on virtual events. Paradoxically, the result indicates a positive sign as the low score on the tendency to disagree that they are disengaged means rather the opposite, i.e., they tend to feel involved in virtual events. Similarly, the high score charted for failure avoidance implies that the students are compelled to organise virtual events to avoid disappointment amongst lecturers and classmates. The sub-factor 'failure avoidance' falls under the maladaptive motivation quadrant in the MEW framework. It refers to the extent to which students are motivated to do their work to avoid failure, doing poorly, or disappointing others. As a consequence, students tend to perceive the aversive consequences of failing such as embarrassment to others and disappointing oneself in evaluative situations (McGregor & Elliot, 2005; Elliot & Thrash, 2004). Studies have shown the effect of failure avoidance in academic settings which include greater anxiety, unstable self-esteem, pessimism, perceptions of low control, and decreased quality of engagement in achievement situations/pursuits (Elliot & Thrash, 2004). In the case of virtual events,

students were assigned tasks and closely monitored for their progress before the actual event began. They were aware that their physical student activities were being converted into comprehensive online extracurricular activities. The anticipation of these virtual events pressured students to succeed, as failure could compromise their overall academic assessment

The findings of this study do not support the notion that student motivation and engagement differ as the year of study increases. The lack of variation may be because both upper and lower semester students are involved in organising virtual student events and the sample size used is relatively small. Nonetheless, the descriptive statistics depict that lower semester students scored higher in all sub-factors of the MES except for “self-handicapped” and “disengagement” (See Table 3), connoting that the students are generally engaged and committed to tasks that were given (organising virtual events). On the flip side, the high score of ‘failure avoidance’ by both lower and upper semester students shed light on the fact that students tend to perceive that they are compelled to complete their tasks for the purpose of student activities and due to their grades as these activities contribute to their academic assessment.

It seems that there no difference in both genders, showing that all tend to be motivated and engaged. Typically, females are more motivated and engaged than male counterpart as found in the multiple contexts of studies using MES (Liem & Martin, 2012); (Collins, Kenway & McLeod., 2000); (MacDonald, Saunders & Benfield, 1999). Previous research conducted indicate that on average, girls in Australia did better than boys in a larger number of subjects (Collins, Kenway & McLeod.2000), and boys have higher rates of suspension than girls (Ainley & Lonsdale, 2000). For gender, teachers perceived boys to be less productive, less interested to solve problems, and has shorter attention spans (MacDonald et al. 1999). Although in terms of numbers, more females (N=76) had completed the questionnaire compared to males (N=46), but there is no indication of statistical significance that females are more engaged than males in their involvement in virtual events in this study. A possible explanation could be that prior to the virtual events, most students—both male and female—had to work collaboratively and communicate with each other to achieve desired goals, such as the success of the virtual events. The evaluation of these events significantly influenced their academic assessment grades. Therefore, involvement in virtual events played an important role in student engagement and motivation, consequently affecting their academic assessment grades.

CONCLUSION

This study concludes that the scores for student motivation and engagement are high-intermediate among students for their involvement in virtual events. All sub-factors of the MES are at the acceptable level of Cronbach’s Alpha value that is more than 0.7. Therefore, it is important to ensure that student motivation and engagement can properly be directed to the accumulation of meaningful experience, resilience, enhancement of knowledge and the shaping of character among undergraduate students. Factors such as added value co-curriculum, autonomous student events, rigorous communication, and complementary course design resulting from the student-led activities will encourage students’ commitment and involvement in their studies.

A review on the “failure avoidance” sub-factor should be carried out to further investigate the reason of the high score on students’ tendency to agree. In formal academic settings, students have the tendency to experience greater anxiety, low self-confidence, pessimism, and decreased engagement. The new normal of the online learning environment may potentially exacerbate this situation further to reduce failure avoidance, a strategic approach to students’ motivation and engagement could be done by integrating virtual student-led activities, academic assessment and mentorship to encourage and support students in conducting virtual events.

As the sample size and department involved in this study was rather small and limited, further studies on student engagement and motivation based on the 11 sub-factors (Fig.11) could be conducted on a larger sample more than 122 of undergraduates and inter-faculties in future research. The results from those

studies may enhance understanding on the attributes of student motivation and engagement and facilitate the suitable approaches to improve their motivation and engagement levels.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Sheikh Ali Azzran Sh Said carried out the research, wrote and revised the article, anchored the review, revisions and approved the article submission. Farrah Norizzah Mohd Yusof conceptualised the central research idea and provided the theoretical framework and project administration, while Shaza Rina Sahamir and Julitta Yunos designed the research, supervised research progress.

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