

Students' Acceptance of Online Rubric Marking Assessment in an Islāmic and Asian Civilizations Course at the Universiti Malaysia Pahang (UMP)

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Abstract

There are many tools available over the Internet providing educators with the platform to implement online rubric marking assessment (ORMA). However, only a few success stories and studies about its usage among Malaysian higher education institutions have been reported, particularly in general courses such as Islāmic and Asian Civilizations ("TITAS"). Hence, this study aims to investigate students' acceptance of an online rubric marking assessment of TITAS course at Universiti Malaysia Pahang (UMP). The study is descriptive using a self-administered online survey which deployed through UMP's official learning management system (LMS). The participants comprised 152 students out of a population of 1,590 students who took the TITAS course in Semester II of the 2016/ 2017 session. The analysis shows that in general the students were ready and very positive towards the use of ORMA due to its effectiveness and impact on their learning. Although there were many challenges in implementing ORMA, generally it was worth implementing in transforming higher education in an effort to embrace Industrial Revolution 4.0.

Keywords: *Performance appraisal, classroom observation, self-appraisal, lesson planning, job performance, instructional leadership, Islamic boarding schools*

INTRODUCTION

Recent rapid development in the information and communication technology (ICT) has led to Industrial Revolution 4.0. The goals of the industry are to achieve a higher level of operational efficiency and productivity, as well as a higher level of automatization (Thames & Schaefer, 2016). As an industry and sector, higher education is also directly affected by the Industrial Revolution 4.0 (Baygin, Yetis, Karakose, & Akin, 2016).

In Malaysian higher education institutions, the assessment of student learning in general courses is typically conducted using conventional approaches. This approach demands a lot of time and effort of educators in completing the assessment, especially with a substantial number of students. Based on the review of literature conducted by the researchers, there have been some attempts to maximize the usage of ICT in teaching, learning and assessment, such as SMSes (Abu Ziden & Faizal, 2012), blogs (Wang *et al.*, 2016), smartphones (Jin, 2014), email (Zhao & Okamoto, 2009), and others. In line with the current Industrial Revolution 4.0, educators are expected to integrate ICT into their daily teaching to complement their traditional

methods with the modern tools and facilities. Previous research (Bhuasiri *et al.*, 2012; Leen & Lang, 2013; Mullamaa, 2010; Noor-Ul-Amin, 2013; Passey, Rogers, Machell, & McHugh, 2004; Schulz, Isabwe, & Reichert, 2015) has shown a range of motivating factors behind the use of ICT for teaching and learning (T&L).

TITAS (or "*Tamadun Islām dan Tamadun Asia*" in Malay) is one of the compulsory general courses that all Malaysian university students must take at their respective universities. Due to that, the number of students enrolled in this course in every semester is very huge; for example, in Semester II of the 2016/ 2017 session, there were a total of 1,590 students who enrolled in the TITAS course at the Universiti Malaysia Pahang (UMP). With this situation, an innovative and efficient approach was needed to assess the large number of students in the limited time duration. To respond to this need, the researchers implemented an online rubric marking assessment in the TITAS course by utilizing the existing institutional Learning Management System (LMS). However, students' acceptance of the online assessment was not known to the faculty. Therefore, this study aimed to investigate students' acceptance of the online rubric marking assessment in TITAS at the Universiti Malaysia Pahang (UMP).

Online Rubric Marking Assessment (Orma)

The use of rubrics in education has been studied by many researchers. Our search in SCOPUS shows that there is a significant increase in the number of studies on rubrics in higher education settings.

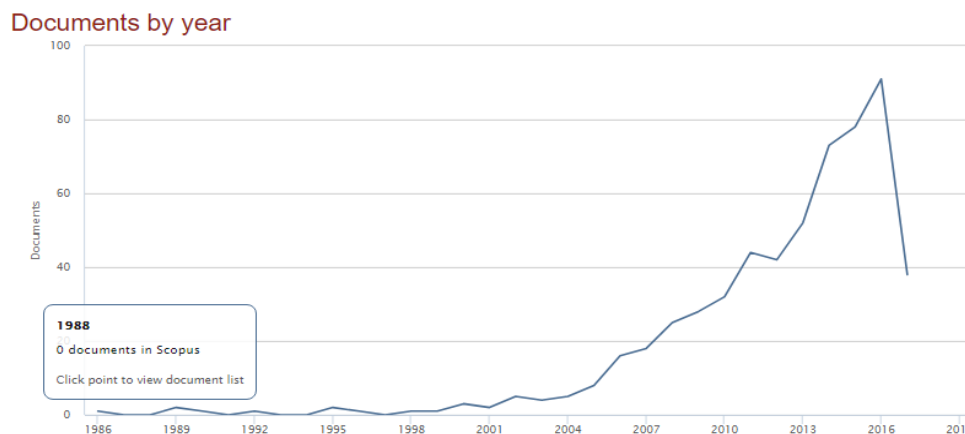


Figure 1 : Research trends on the use of rubrics in higher education (SCOPUS, 19 June 2017)

Previous studies show that rubrics provide a positive impact on students' learning and acceptance (Andrade & Du, 2005; Panadero, Romero, & Strijbos, 2013; Reddy & Andrade, 2010; Thaler, Kazemi, & Huscher, 2009). Generally, there are three significant findings of the usage of rubrics in higher education based on previous studies (Timmerman, Strickland, Johnson, & Payne, 2011). They are: (1) rubrics increase the consistency of course grading, particularly in those courses taught by multiple instructors; (2) rubrics help faculty to assess students' achievement objectively; and (3) they are able to point out the gaps among course assignments. In short, the findings of studies on rubric usage are associated with quality assessment and quality teaching and learning.

Although there have been many studies looking at rubric assessment, there are still limited resources on using the rubric assessment in online environments. One previous research that is most associated with our study is that of Strang (2015) where the study aimed to evaluate the effectiveness of an online Moodle workshop using peer assessment. In addition to this study, there are a few others (e.g. Ashenafi, 2015; Dochy, Segers, & Sluijsmans, 1999; Falchikov & Goldfinch, 2000; Falchikov, 1995; Somervell, 1993; Thomas, Martin, & Pleasants, 2011) that

emphasize the needs and importance of peer assessment in higher education. Therefore, our study intended to measure students' acceptance of the peer assessment concept, particularly student acceptance of the online rubrics adopted in general university courses like TITAS.

Our search in the SCOPUS database using the keywords “*online rubric higher education*” did produce some previous studies on the use of online rubrics. However, all of the studies published in Malaysia (Table 1) have not been about online rubric marking assessment. This gap motivated us to conduct a pre-study about the usage of the online rubric marking assessment (ORMA) of Islāmic and Asian Civilization (“TITAS”) course at the Universiti Malaysia Pahang (UMP).

Table 1:
SCOPUS Search Results

Country	Number of Documents
United States	53
Spain	8
Canada	6
Australia	4
Malaysia	4
Other	20

Source : SCOPUS (Date retrieved: 21 June 2017)

METHODOLOGY

This study was conducted in the TITAS course at the Universiti Malaysia Pahang during Semester II 2016/2017. The study's procedures were as follows: The course coordinator designed a written assignment with the marking rubric using UMP's Learning Management System (LMS) based on Moodle with “Workshop” activity. The official site for UMP LMS is <http://kalam.ump.edu.my>. The students then submitted their work through UMP LMS, and assessed their own work and their peers' work based on a given online rubric marking assessment (ORMA) in the UMP's LMS. Each respective lecturer/instructor assessed students' work. Next, the students participated in an online survey about ORMA using a 5-point Likert agreement scale (Table 2) which contained constructs derived from the Technology Acceptance Model (McFarland & Hamilton, 2006). The constructs used in this research were *perceived usefulness* (PU) and *behavioral intention* (BI).

Table 2:
The Online Rubric Marking Assessment (ORMA) Scale

Construct	Items	Description
Perceived Usefulness (PU)	PU1	It is easier to answer
	PU2	It is clearer in the assessment
	PU3	It is clearer in the marking
	PU4	It is fairer in the assessment
	PU5	It is more contemporary
	PU6	It helps me to better understand the quality of my answers
Behavioral Intention (BI)	BI1	I hope to use ORMA for all assessments of TITAS
	BI2	I hope to answer the Final Exam of TITAS using ORMA.
	BI3	I hope to use ORMA in other subjects/courses in the Centre for Modern Language & Human Sciences
	BI4	I hope to use ORMA in other university subjects/courses

Based on the constructs, we have determined the students' acceptance in ORMA for their learning. Figure 2 shows the readiness model designed for this study as follows:

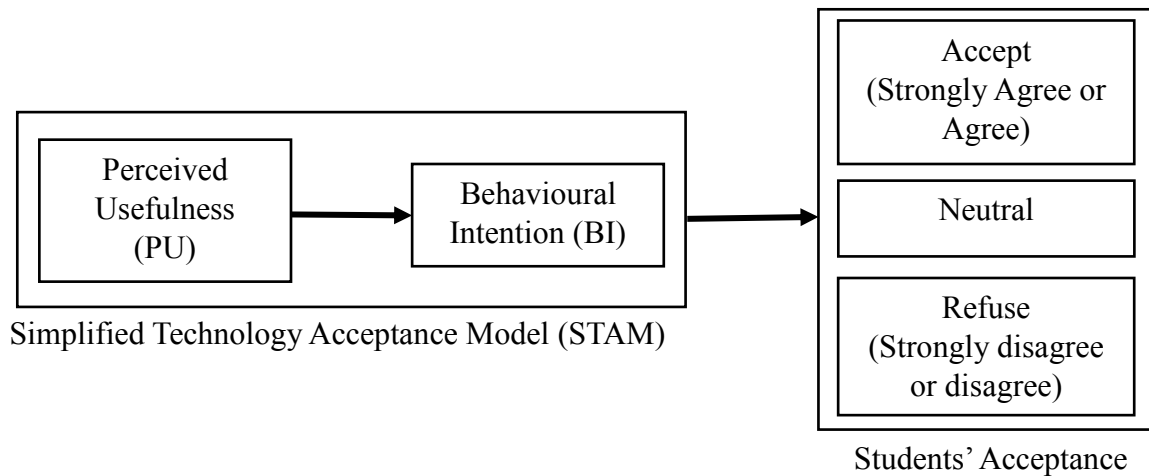


Figure 2: Model of Students' Acceptance of ORMA

RESULTS AND DISCUSSION

The study describes the findings of ORMA on TITAS test evaluation among the students of UMP. To test the reliability of the items used in our survey, we calculated the value of standardized Cronbach's alpha for each construct. We rated the level of scale for each item into three levels (low, medium and high) as shown in Table 3 based on their mean values. The variation from the mean was measured by the standard deviation.

Table 3:
Item Scale Rate Based on the Mean Value

Range of Mean Values	Level
1 – 2.33	Low
2.34 – 3.66	Medium
3.67 – 5	High

To determine the Cronbach's alpha in this study, we calculated the variance value for each item and to determine the standardized Cronbach's alpha, we calculated the Pearson value for each item. The results are shown in Table 4.

Table 4:
Pearson Correlation Coefficients of Items

Pearson Correlation Value		Perceived Usefulness (PU)						Behavioral Intention (BI)				
		PU1	PU2	PU3	PU4	PU5	PU6	BU1	BU2	BU3	BU4	
Perceived Usefulness (PU)	PU1	1.00										
	PU2	0.80	1.00									
	PU3	0.73	0.79	1.00								
	PU4	0.71	0.74	0.78	1.00							
	PU5	0.75	0.80	0.80	0.86	1.00						
	PU6	0.76	0.78	0.74	0.81	0.83	1.00					
Behavioral Intention (BI)	BI1	0.69	0.71	0.64	0.66	0.67	0.69	1.00				
	BI2	0.49	0.54	0.50	0.47	0.42	0.47	0.56	1.00			
	BI3	0.68	0.73	0.70	0.70	0.75	0.69	0.80	0.54	1.00		
	BI4	0.63	0.72	0.61	0.71	0.66	0.63	0.77	0.50	0.82	1.00	

Number of Items (k)	6	4
Mean Construct	0.78	0.67
Construct Standardized Cronbach's Alpha	0.95	0.89
Overall Means	0.69	
Overall Standardized Cronbach's Alpha	0.96	

Table 5 shows a summary of the reliability results of the items and constructs used in this study.

Table 5:
Reliability Analysis of Survey Items

Construct	Item	Item Mean	Level	Standard Deviation (s)	Variance (S)	Cronbach's Alpha	
						Construct	Scale
Perceived Usefulness (PU)	PU1	3.80	High	1.00	1.01	0.95	0.96
	PU2	3.60	Medium	1.05	1.10		
	PU3	3.70	High	1.07	1.15		
	PU4	3.51	Medium	1.04	1.09		
	PU5	3.68	High	0.99	0.99		
	PU6	3.61	Medium	1.06	1.13		
Behavioral Intention (BI)	BI1	3.59	Medium	1.03	1.07	0.89	
	BI2	3.41	Medium	1.16	1.36		
	BI3	3.58	Medium	1.06	1.12		
	BI4	3.52	Medium	1.08	1.17		

The Cronbach's alphas shown in Table 5 indicate that the constructs used in the study had good reliability measures scale as the indexes were more than the 0.7 threshold recommended in statistical analysis (Tavakol & Dennick, 2011). Since all the items used in this study show good reliability, we proceeded with analyzing the distribution of students' responses based on the scales and gender for each item as shown in Table 6.

Table 6:
TITAS Students' Response Distribution (N=152)

Item	Male					Female				
	SD	D	NS	A	SA	SD	D	NS	A	SA
PU1	2	2	7	36	12	7	4	18	45	20
PU2	3	4	9	36	7	8	8	18	46	14
PU3	4	1	13	27	14	9	3	19	46	17
PU4	2	4	20	25	8	8	6	31	33	16
PU5	2	1	18	29	9	7	4	21	45	17
PU6	2	4	14	30	9	8	8	20	41	17
BI1	2	5	12	34	6	7	7	24	39	17
BI2	1	3	18	24	13	11	16	27	24	16
BI3	3	3	14	31	8	8	8	20	43	15
BI4	4	4	16	28	7	7	8	25	37	17

Based on the response distribution, we determined three categories of student decisions about ORMA: 1 indicating refusal; 2 indicating a neutral stand; and 3 indicating acceptance as indicated in Figure 2. We also analyzed the pattern of overall students' acceptance of using the ORMA in their courses, the results of which are shown in Table 7.

Table 7:
TITAS Students' Acceptance of ORMA (N = 152)

Construct	Item	Category of Decision			Readiness (Mean of Acceptance)
		Refusal	Neutral	Acceptance	
Perceived Usefulness (PU)	PU1	9.8%	16.3%	73.9%	65.3%
	PU2	15.0%	17.6%	67.3%	
	PU3	11.1%	20.9%	68.0%	
	PU4	13.1%	33.3%	53.6%	
	PU5	9.2%	25.5%	65.4%	
	PU6	14.4%	22.2%	63.4%	
Behavioral Intention (BI)	BI1	13.7%	23.5%	62.7%	58.7%
	BI2	20.3%	29.4%	50.3%	
	BI3	14.4%	22.2%	63.4%	
	BI4	15.0%	26.8%	58.2%	

Based on the results, more than half of student responses show an agreement to accept ORMA in their courses. By considering the additional cases of responses in the neutral or not sure categories, there is a greater likelihood that ORMA would be adopted by the student population (Leal Filho et al., 2018; Postareff, Virtanen, Katajavuori, & Lindblom-Ylänne, 2012). Thus it may be reasonably concluded that online rubrics can be implemented and integrated into student assessment in TITAS courses in Malaysian higher education.

CONCLUSION

Based on our research, we anticipate that the usage of digital technology in education, particularly in online assessment, is the most fundamental critical success factor in teaching and learning for the present and future generations. In general, students are able to adapt quickly and benefit from innovative educational approaches. However, using ORMA requires a close cooperation between academicians and technical personnel who are responsible for managing an institution's learning management system. Although the use of the ORMA requires extra effort and much preparation on the part of the academics, the results are promising and suggest a favorable return on investment in terms of the time, money and effort spent. Those who refuse to integrate the usage of ORMA into their teaching might be moving into the wrong direction of the current and future higher education. Since this study is limited to examining just students' acceptance, it suggests that further investigation on ORMA acceptance among educators be undertaken in future research.

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