

## Complementing Classroom Teaching with an Internet Course Website: Does Gender and Race Matter

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### Abstract

*This research looks at the usage of course websites to complement the traditional teaching mode where lectures are delivered in physical classrooms. The data was collected from second year business management student who are required to use the course website for their business research methods class. The total number of students was 330 but only 275 responded as this was a voluntary exercise. The analysis showed that the male students found the course website to be more useful, easy to use and accessed the course website more as compared to the female students. In terms of race there were no significant differences in terms of usefulness, as all the students found it to be useful, but the Indian students found the course website to be easier to use and used more when compared to the Malays, Chinese and other races students. With the above result, we applied a regression analysis with gender and race as the control variables. The results indicate that gender and race explained only 4.3% of the variation in the usage whereas the two constructs (PU and PEU) were able to explain an additional 46.2% of the variation in the usage of the course website. Perceived usefulness ( $\beta = 0.442$ ,  $p < 0.01$ ) was the more influential predictor of usage with perceived ease of use ( $\beta = 0.337$ ,  $p < 0.01$ ) also significant. Perceived ease of use was also positively related ( $\beta = 0.550$ ,  $p < 0.01$ ) to perceived usefulness.*

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### Introduction

The Internet has changed the way we do things forever. With the advent of the Internet, it has become the channel of delivery for many businesses and the education sector is not spared either. Gone are the days when students have to physically visit the library for research materials. The advent of the Internet has also changed the way education is delivered and will be delivered. E-learning is the latest way or mode of delivering education to the masses. The present research looks at the complementary nature of traditional classroom delivery with the use of Internet as supporting material. This research looks at the usage of course websites to complement the traditional teaching mode where lectures are delivered in physical classrooms. A screenshot of the course website is presented in Figure 1.

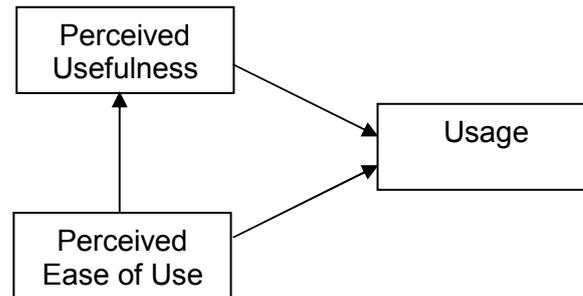


Figure 1 The Course website

## Conceptual Foundation

### Technology Acceptance Model

This research used the Technology Acceptance Model (TAM) developed by Davis et al. (1989) to explain intention and usage of technology. The Technology Acceptance Model (TAM) pioneered by Davis (1989) advances the TRA by postulating that perceived usefulness (PU) and perceived ease of use (PEU) are key determinants that inevitably lead to the actual usage (U) of a particular technology or system. PU is defined as the extent to which a person believes that using a particular system or technology would enhance his/her job performance. PEU on the other hand, is defined as the extent to which a person believes that using the particular system or technology would be free from effort (Davis, 1989).



**Figure 2** Technology Acceptance Model (Davis, 1989)

### Methodology

The population for this study was all second year business management students enrolled for the Business Research Methods class for the academic year 2004-2005. A structured questionnaire adopted from Selim (2003) was used to collect data from 330 registered students in the class. A total of 275 students responded out of the 330 students as this was a voluntary exercise, giving an effective response rate of 83.3%. Table 1 shows a sample question used for each of the variable used in this study with the corresponding Cronbach alpha values from the original study.

**Table 1** Sample questions from the questionnaire

Variable	Sample Question	Source
Perceived ease of use	It was easy for me to become skillful at using the course website.	Selim (2003) $\alpha = 0.912$
Perceived usefulness	Using the course website improves the quality of the course work I do.	Selim (2003) $\alpha = 0.910$
Usage	I use the course website whenever possible to do my course work.	Selim (2003) $\alpha = 0.909$

### Goodness of Measures

The reliability of the measurement was assessed using the Cronbach Alpha. The values ranged from 0.88 to 0.91 which shows that the measures are reliable and also comparable with the alpha values of the original study of Selim (2003).

**Table 2** Results of the reliability analysis

Variables	No. of Items	Item Deleted	Alpha
Perceived Ease of Use	6	-	0.908
Perceived Usefulness	6	-	0.876
Usage	4	-	0.892

The descriptive for each of the variable was also computed. For Usefulness (M = 5.39, SD = 0.75), Ease of use (M = 4.97, SD = 0.90) and Usage (M = 5.03, SD = 0.95) with all three variables close to a value of 5 on a 7 point Liker scale.

As can be seen from Table 3, a majority (74.2%) were female students which are the norm lately in the distribution in terms of gender in university student intake. A majority (81.1%) were Chinese students which are a recent result of the meritocracy criteria of intake introduced in the last 3 years. Since these students are in the second year, most of them were staying outside the campus as there are limited on campus accommodation available and priority is given to first year students.

**Table 3** Profile of respondents

Variable	Frequency	%
Gender		
Male	71	25.8
Female	204	74.2
Race		
Malay	38	13.8
Indian	8	2.9
Chinese	223	81.1
Others	6	2.2
Living Arrangement		
On Campus	107	38.9
Outside Campus	168	61.1
CGPA		
Below 2.00	1	0.4
2.00 – 2.33	20	7.3
2.34 – 2.67	59	21.5
2.68 – 3.00	97	35.3
3.01 – 3.33	81	29.5
3.34 – 3.67	11	4.0
Above 3.67	6	2.2

## Results

Further to that we also ran a t-test and a one way ANOVA to ascertain whether the 3 constructs differed by gender and race.

**Table 4** Results of the t-test

Variable	Gender		t-value
	Male	Female	
Perceived Usefulness	5.57	5.34	<b>2.17**</b>
Perceived Ease of Use	5.34	4.85	<b>3.91***</b>
Usage	5.21	4.99	<b>1.67*</b>

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

Generally male students exhibited higher levels of usefulness, ease of use and usage as compared to the female students. One particular point to stress is that the males find the course website much easier to use compared to the female students. This may be due to the extended exposure to Internet usage among males as compared to females.

**Table 5** Results of the ANOVA analysis

	Ethnicity			
	Malay	Chinese	Indian	Others
Perceived Usefulness	5.16 <sup>a</sup> (38)	5.44 <sup>a</sup> (219)	5.62 <sup>a</sup> (8)	5.08 <sup>a</sup> (6)
Perceived Ease of Use	5.06 <sup>a</sup> (38)	4.93 <sup>a</sup> (219)	<b>6.10<sup>b</sup></b> <b>(8)</b>	5.14 <sup>a</sup> (6)
Usage	4.92 <sup>a</sup> (38)	5.05 <sup>a</sup> (219)	<b>6.17<sup>b</sup></b> <b>(8)</b>	4.67 <sup>a</sup> (6)

NOTE: The mean values shown are on a 1 to 7 scale (numbers in parentheses are sample sizes for the different groups of students). Means with the same superscripts are not significantly different; means with different superscripts are significantly different at  $p < 0.05$ .

In terms of race there were no significant differences in terms of usefulness, as all 4 groups found it to be useful, but the Indian students found the course website to be easier to use and used more when compared to the Malay, Chinese and other race students.

We also ran a hierarchical 2 step regression to see the impact of gender and race on usage of the course website as well as to see the additional impact of usefulness and ease of use on usage of the course website. The result is presented in Table 6.

The results indicate that gender and race explained only 4.3% of the variation in the usage whereas the two constructs (PU and PEU) were able to explain an additional 46.2% of the variance in usage of the course website. Perceived usefulness ( $\beta = 0.442$ ,  $p < 0.01$ ) was the more influential predictor of usage with PEU ( $\beta = 0.337$ ,  $p < 0.01$ ) also significant. Perceived ease of use was also positively related ( $\beta = 0.550$ ,  $p < 0.01$ ) with perceived usefulness indicating that a system that is perceived to be easy to use will also be perceived to be useful.

**Table 6** Results of regression analysis

Variable	Dependent Variable	
	Course Website Usage	
<i>Control Variables</i>		
Gender (Male=1, Female=0)	0.092	-0.043
Race (Malays)	-0.333*	-0.205*
Race (Chinese)	-0.320*	-0.216*
Race (Others)	-0.231**	-0.152*
<i>(Benchmark group = Indians)</i>		
<i>Model Variables</i>		
Perceived usefulness		0.442**
Perceived ease of use		0.347**
F value	2.928	44.367
R <sup>2</sup>	0.043	0.505
Adjusted R <sup>2</sup>	0.028	0.494
R <sup>2</sup> change	0.043	0.462
F Change	0.021	0.000

\*  $p < 0.05$ , \*\*  $p < 0.01$



## Discussion and Conclusion

The findings show that the utility of a technology (perceived usefulness) is a much more influential predictor of usage although perceived ease of use also exerts influence on usage. This concurs with the findings of many researchers (Davis, 1989; Mathieson, 1991; Adams et al, 1992; Segars & Grover, 1993; Igbaria et al, 1995, 1996, 1997; Ndubisi et al, 2001; Ramayah et al, 2002; Ramayah et al, 2003a, 2003b; Ramayah & Aafaqi, 2004; Ramayah, 2004; Ramayah, 2006) that perceived usefulness influences technology usage directly. Perceived ease of use was also found to be a significant predictor of usage and also perceived usefulness. This is consistent with the findings of Adams et al. (1992), Davis (1989), Ramayah et al (2002), Ramayah et al (2003a, 2003b), Ramayah (2004) and Ramayah (2006) all else being equal, an application perceived to be easier to use is more likely to be accepted by the users

The findings imply that students have to be educated on the importance and usefulness of the course website in their study programme. Course website will continue to be useful to the students in the near future as we move towards the era of e-learning and a knowledge based society. The lecturers should also be motivated to develop and maintain course websites to complement the traditional delivery method by the university authorities. Not forgetting that the course websites must also be designed in a way that the users would find it easy to navigate and maneuver or risk getting lost in the process. The university authorities should also find ways and means to reward the academics who takes time and pain to develop course websites to complement their teaching as we move towards the e-learning era.

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