The Impact of Cyber-slacking on Accounting Students' Academic Performance: A Preliminary Study

Wimpie Yustino Setiawan
Universitas Atma Jaya Yogyakarta

ABSTRACT

Over the past three decades, the accounting profession has acknowledged the necessity of incorporating information technology into student education. Educational institutions around the globe have used the Internet to deliver learning materials and communicate with students at much faster speeds. However, the use of Internet technologies can also become a source of distraction, if used for non-learning purposes. Using the Internet during class for something other than course-related activities is commonly known as 'cyber-slacking' in the classroom. The present study aims to investigate the impact of accounting students' cyber-slacking behaviours on their academic performance. It specifically focuses on the following question: *Does cyber-slacking in the classroom negatively influence accounting students' academic performance?* The sample is conveniently drawn from undergraduate accounting students of a private university in Yogyakarta, Indonesia. The findings of this study indicate that cyber-slacking in the classroom has no significant impact on accounting students' academic performance.

Keywords: accounting student, cyber-slacking, academic performance

1. INTRODUCTION

The adoption of Internet technologies in teaching and learning has revolutionised accounting education. Educational institutions around the globe have used the Internet to deliver learning materials and communicate with students at much faster speeds. This has allowed students to access course materials, assignments, and their grades much more easily and quickly than ever before (Gerow, Galluch & Thatcher, 2010).

Despite the positive outcomes of the use of the Internet in the classroom, researchers have found that it can also become a source of distraction, if used for non-learning purposes (Barak, Lipson & Lerman, 2006). Students have been reported to use their laptops during class to check emails, surf the net, play games (e.g. Fried, 2008), browse social networking sites (e.g. Ugrin and Pearson, 2013), read news, watch sports and shop online (e.g. Ravizza, Hambrick & Fenn, 2014). This behaviour of "using the Internet during class for something other than course-related activities" is commonly known as 'cyber-slacking' in the classroom (Gerow, Galluch & Thatcher, 2010, p. 7).

Cyber-slacking in the classroom, as reported by the findings of previous studies, can adversely influence students' academic performance (e.g. Le Roux and Parry, 2017; Clayson and Haley, 2013; Barks, Searight, and Ratwik, 2011). This influence, however, differs across subject areas. For example, a recent study conducted by Le Roux and Parry (2017) has found that a significant negative correlation exists between in-lecture media use and academic performance for students in the Arts and Social Sciences. However, the evidence shows that

the same pattern does not exist for students in the faculties of Engineering, Economic and Management Sciences, and Medical and Health Sciences.

The present study investigates the impact of accounting students' cyber-slacking behaviours on their academic performance. It specifically focuses on the following question: *Does cyber-slacking in the classroom negatively influence accounting students' academic performance?* This paper is organised as follows. After this introductory section, theoretical framework and hypothesis development are discussed. The third section explains the method used in this study. The results of this study are then presented in the fourth section. Finally, the fifth section concludes with discussions of study limitations, implications, and directions for future research.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1. Cyber-Slacking in the Classroom and the Theory of Planned Behaviour

Over the past three decades, the accounting profession has acknowledged the necessity of incorporating information technology into student education (Basioudis et al., 2006). One of the main reasons is that the use of Internet technologies in the classroom has brought about positive effects on students. For example, laptop use in a wi-fi classroom has been shown to enhance student-centred, hands-on, and exploratory learning, as well as meaningful student-to-student and student-to-instructor interactions in large classes (Barak, Lipson & Lerman, 2006). It has also been suggested that students' motivation, academic achievements, and ability to apply their knowledge may be increased by laptop use in the classroom (e.g. Mackinnon & Vibert, 2002). Moreover, the use of Internet technologies has allowed students to access course materials, assignments, and their grades much more easily and quickly than ever before (Gerow, Galluch & Thatcher, 2010).

Nevertheless, the use of Internet technologies can also become a source of distraction, if used for non-learning purposes (Barak, Lipson & Lerman, 2006). "Using the Internet during class for something other than course-related activities" is commonly known as '*cyber-slacking*' in the classroom (Gerow, Galluch & Thatcher, 2010, p. 7). A number of prior studies have found evidence that students exhibit this behaviour in class. Fried (2008), for example, finds that students use their laptops to check emails, surf the net, and play games during lectures. The results of her study show that the level of laptop use has a negative effect on student learning, including their understanding of course material and overall course performance. Ugrin and Pearson (2013) find that students use the Internet during class to browse social networking sites. Students are also found reading news, watching sports and shopping online in class (Ravizza, Hambrick & Fenn, 2014). The use of portable devices for these non-academic purposes, as reported by Ravizza, Hambrick and Fenn (2014), is associated with lower test grades.

One theory which is frequently used to explain individuals' behaviours of interests, including cyber-slacking behaviours, is the theory of planned behaviour (Taneja, Fiore & Fischer, 2015). This theory suggests that:

> ...the proximal determinant of a behaviour is an individual's intention to perform the behaviour, which is determined by one's attitude, subjective norms, and perceived behavioural control with respect to the behaviour. Further, the behavioural beliefs,

normative beliefs, and control beliefs are the antecedents of attitudes, subjective norms, and perceived behavioural control, respectively (Taneja, Fiore & Fischer, 2015, p. 142).

Based on this theory, Taneja, Fiore and Fischer (2015) have identified four factors that may determine students' intention to cyber-slack in the classroom. The first determinant is attitude, which they define "as the degree to which cyber-slacking is positively or negatively valued by students" (Taneja, Fiore & Fischer, 2015, p. 143). The results of their study have shown a positive relation between students' favourable attitudes towards cyber-slacking in the classroom and their intentions to cyber-slack during class. The second factor is subjective norm, which is defined as "students' perception of social pressure to use the Internet and other technologies during scheduled class time for non-class related purposes" (Taneja, Fiore & Fischer, 2015, p. 143). A study conducted by Gerow, Galluch and Thatcher (2010) on this factor has demonstrated that students' intention to cyber-slack is more likely to increase when their peers (i.e. classmates) and friends think that cyber-slacking during class is acceptable.

Thirdly, students' intention to cyber-slack in the classroom may be determined by "the degree to which students believe that their peers are cyber-slacking in the classroom" (Taneja, Fiore & Fischer, 2015, p. 143). This factor is known as descriptive norm and thought to have a positive correlation with students' intention to cyber-slack. This means that students are more willing to use Internet technologies for non-class related purposes when they see that their classmates and friends are engaged in cyber-slacking. Finally, students' intention to cyber-slack may also be determined by perceived behaviour control, which refers to "the student's perception of the ease or difficulty of cyber-slacking in the classroom" (Taneja, Fiore & Fischer, 2015, p. 144). It has been argued that monitoring can play a major role in improving perceived behavioural control. Cyber-slacking in the classroom, as suggested by Gerow, Galluch and Thatcher (2010), will be less likely to occur when students are aware that the instructor is monitoring whether Internet technologies are used for class-related purposes.

2.2. Cyber-Slacking in the Classroom and Students' Academic Performance

Previous studies have reported negative effects of non-academic internet use in the classroom on students' academic performance. Barks, Searight, and Ratwik (2011), for example, found that university students who engaged in text messaging during lecture demonstrated poorer academic performance. The findings of their study, which involved 37 students at a midwestern university, suggested that texting during the course of a lecture caused students to miss important class content. This result is consistent with the findings of Clayson and Haley (2013). In an exploratory study involving students in marketing classes at two different universities, they found that students who texted in marketing classes received lower grades. An experimental study carried out by Hembrooke and Gay (2003) has also proved that cyber-slacking in the classroom decreases students' academic performance. With two groups of students in an upper level Communications course as participants, the experiment produced the following results:

> Two groups of students heard the same exact lecture and tested immediately following the lecture. One group of students was allowed to use their laptops to engage in browsing, search, and/or social computing behaviours during the lecture. Students in the second condition were asked to keep their laptops closed for the duration of the lecture. Students in the open laptop condition suffered decrements on traditional measures of memory for lecture content (Hembrooke and Gay, 2003, p.46).

A more recent study conducted by Le Roux and Parry (2017) provides interesting and important results. Through a survey-based study of 1,678 students from ten different faculties at a large university in South Africa, they find that subject area does influence the relationship between students' in-class use of media (e.g. laptops, tablets and smartphones) and academic performance. Their study finds that a significant negative correlation exists between in-lecture media use and academic performance for students in the Arts and Social Sciences. However, the evidence shows that the same pattern does not exist for students in the faculties of Engineering, Economic and Management Sciences, and Medical and Health Sciences. The argument for these differences is threefold. First, students from a particular subject area demonstrate a degree of similarity in terms of thinking style. Thinking style, as suggested by Le Roux and Parry (2017), may result from the preferences of students when choosing their major subjects, as well as the content and teaching styles of different subject areas. Secondly, these differences may be due to the nature of the content being taught or learned as opposed to attributes of the learners. Le Roux and Parry (2017, p.13) further explain that:

> This view considers the possibility that certain attributes of the content being taught during a lecture make the effectiveness of the learning process more/less susceptible to subjective media-induced interferences. Our data suggest that media-induced distractions may be more influential during the teaching of content associated with social science subject matter than during the teaching of other subject areas.

Finally, Le Roux and Parry (2017) also attribute the findings of their study to the existence of differences in academic assessment policies and norms between areas. They argue that:

> Accordingly, the finding that social science students' performance correlates negatively with in-lecture media use may suggest that assessment methods used in this subject area are more sensitive to students' receptiveness during lectures as opposed to, for example, their time spent preparing for tests. This is, of course, reflected in the assessment styles adopted by different disciplines (Le Roux and Parry, 2017, p.13).

Based on the theory of planned behaviour and the findings of previous studies on classroom cyber-slacking, as discussed above, the hypothesis of the current study is formulated as follows:

H1: Cyber-slacking in the classroom negatively influences accounting students' academic performance.

3. METHOD

3.1. Participants

The sample was conveniently drawn from undergraduate accounting students of a private university in Yogyakarta, Indonesia. A total of 224 students were invited to complete a questionnaire. Twelve students were later dropped from the sample because they failed to answer all of the questionnaire items. The final sample thus consisted of 212 students.

3.2. Research Instrument

The questionnaires were completed by the students anonymously. They were divided into two sections. The first section of each questionnaire contained three items measuring students' cyber-slacking behaviour in the classroom on a five-point Likert scale of strongly disagree (1) to strongly agree (5), with higher scores indicating higher levels of cyber-slacking behaviours. These items were adopted and modified from a study by Gerow, Galluch and Thatcher (2010) and were tested for their validity and reliability prior to hypothesis testing. Generally, an instrument is considered valid when its value of Pearson Correlation is greater than 0.3 and reliable when its value of Cronbach's Alpha is greater than 0.6 (e.g., Setiawan, 2018; Setiawan, 2017; Setiawan & Iswari, 2016). As shown in Tables 1 and 2, all the three items measuring students' cyber-slacking behaviour in the classroom had met these criteria and, therefore, were considered valid and reliable. Meanwhile, the second section of each questionnaire contained a question about the student's academic performance as measured by their Grade Point Average (GPA) on a 4.0 scale. A higher GPA indicated a higher level of academic performance.

Table 1: Instrument Validity

Correlations

		CYB_SLK_1	CYB_SLK_2	CYB_SLK_3	CYB_SLK_TOTAL
CYB_SLK_1	Pearson Correlation	1	.542**	.502**	.810**
	Sig. (2-tailed)		.000	.000	.000
	N	212	212	212	212
CYB_SLK_2	Pearson Correlation	.542**	1	.629**	.871**
	Sig. (2-tailed)	.000		.000	.000
	N	212	212	212	212
CYB_SLK_3	Pearson Correlation	.502**	.629**	1	.837**
	Sig. (2-tailed)	.000	.000		.000
	N	212	212	212	212
CYB_SLK_TOTAL	Pearson Correlation	.810**	.871**	.837**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	212	212	212	212

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2. Instrument Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.790	3

4. RESULTS

Descriptive statistics, as presented in Table 3, show that the mean score of cyber-slacking variable for the 212 participants was 9.24. Meanwhile, the average GPA for all the students was 3.09.

Table 3: Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CYB_SLK	212	3.00	15.00	9.2406	2.38154
GPA	212	1.88	4.00	3.0850	.41206
Valid N (listwise)	212				

The research hypothesis that cyber-slacking in the classroom negatively influences accounting students' academic performance was tested by using linear regression, where it would be accepted if the *p*-value was less than 0.05, and rejected if the *p*-value was greater than 0.05. The test, as presented in Table 4, resulted in a *p*-value of 0.394 (*p*-value > 0.05), indicating that the hypothesis is rejected. This means that, contrary to the prediction, the analysis suggests that cyber-slacking in the classroom has no significant impact on accounting students' academic performance. This result may be attributed to several factors, as suggested by Le Roux and Parry (2017) that the influence of cyber-slacking on students' academic performance differs across subject areas, such as the thinking style of accounting students, the nature of the content being taught or learned by the students, and the assessment methods used in the accounting subject area. These factors may make the effectiveness of the accounting learning process less susceptible to the potential distraction caused by in-class cyber-slacking.

Table 4: Results

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.991	.114		26.302	.000	2.767	3.215
	CYB_SLK	.010	.012	.059	.853	.394	-.013	.034

a. Dependent Variable: GPA

5. CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH

The present study investigates the impact of accounting students' cyber-slacking behaviours on their academic performance. Contrary to the prediction that cyber-slacking negatively influences academic performance, the results suggest that cyber-slacking in the classroom has no significant impact on accounting students' academic performance. This finding may be attributed to several factors, such as the thinking style of accounting students, the nature of the content being taught or learned by the students, and the assessment methods used in the accounting subject area. The practical implication of this finding is that accounting students should be able to use the Internet in the classroom. However, instructors should ensure that their students use their devices effectively to support the learning process.

The major limitation of this study is twofold. First, the research instrument used in this study only examined accounting students' propensity to cyber-slack as a proxy indicator of their cyber-slacking behaviour, but did not actually measure the frequency and duration of their in-class use of the Internet for non-learning purposes. Second, this study did not investigate several factors that could potentially affect students' cyber-slacking behaviours, such as the intensity of instructor monitoring in the classroom, the intellectual ability of the students or their ability to multi-task effectively during lectures. Future research, therefore, could include the measurement of the frequency and duration of classroom cyber-slacking and the investigation of the factors that may influence accounting students' cyber-slacking behaviours.

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