Do school restrictions promote student's intention to use end of semester online evaluation of teaching?

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This study intends to examine factors determining student's intention to adopt online teaching evaluation based on the Theory of Planned Behavior. Besides users' attitudes and perceived behavior control, the study further decomposed subjective norms into four categories to identify the best practice schools can use. The results provided support for using the theory to predict intentions and indicated that the more students perceived school restrictions, the less likely they would use online evaluations.

I. Introduction

Teaching evaluations by students have been used as a standard and routine practice in institutions of higher education, and they have been used for instructional improvement and administrative purposes, such as decisions on faculty salary, promotion, and tenure (Ory, 1991; Barnett & Matthews, 1997; Beran & Rokosh, 2009). It has played an important role in both students' learning process and teacher's career. In recent years, due to the advancement of computers and internet technology, many institutions have rapidly replaced traditional student evaluation of teaching at the end of a semester with electronic surveys and adopted online evaluation systems to collect necessary data from the students (Layne, Decrstoforo, & McGinty, 1999;Moss & Hendry, 2002).

Even though the online evaluation systems offer a great amount of advantages, consistent reports have indicated the most pervasive problem for these electronic surveys is their response rates (Moss & Hendry, 2002; Lefever, Dal, & Matthiasdottir, 2007). However, Centra (1979) pointed out that to get valid evaluation survey results, at least two thirds of the students in the class need to provide their input in the assessment of the instruction and the course. Thus, if we want to have an effective and efficient online evaluation system, the priority should be placed on how to increase students' intentions for using the system. Previous studies of online student ratings focus on the benefits and limitations of the new mode of administration (Layne, Decrstoforo, & McGinty, 1999; Moss & Hendry, 2002; Lefever, Dal, & Matthiasdottir, 2007) or the comparability of data gathered from both traditional and online (Chang, 2005; Leung & Kember, 2005; Layne, Decrstoforo, & McGinty, 1999). Research on how to increase the response rates or students' adoption of the new system is still in the preliminary stage and few studies, especially empirical studies, have discussed the issue (Norris & Conn, 2005).

The present study presents an in-depth understanding of students' intentions to adopt online course evaluation system in a Taiwanese university by utilizing Ajzen's (1991) theory of planned behavior as a guide for identifying antecedents to the intentions and exploring which components are significant predictors of the intentions. Understanding the factors that influence intention will help to create a more favorable environment for greater adoption, as well as help to design strategies to promote the acceptance. Instead of simply accepting the common perception that response rates for online teaching evaluations and surveys will always be low, or utilizing any possible incentive programs, the present study was to provide initial empirical evidence for informing policies and practices.

1.1 The Context of This Study

Like in the United States, in Taiwan, the wave of online student ratings of instruction is blowing across the entire higher education system, from public to private institutions. Comparing to the findings of Chang (2001), Chou (2008) found in her pilot study on the use of online evaluation systems that only 9 out of 43 schools returned her email inquiry stated that they were not using online systems, a lot more institutions have chosen to use online rating systems for all courses on campus recently. Their

results indicated the importance an online system has played, and institutions were convinced about the benefits it would bring.

While enjoying the advantages, Institutions do know the problem of low response rates involved. To increase the response rates, currently many institutions have provided a number of different incentives. For example, students who complete electronic surveys could enter a lottery to gain monetary prizes, be assigned earlier registration times for the next quarter, or have immediate access to course evaluation information, etc. Others have also used restrictions to make sure students would participate in the online evaluation process. For example, immediate on-line access to grade information could be made only available to those students willing to spend the time to complete an electronic evaluation (Chou, 2008). Nevertheless, none of those programs has been tested experimentally to determine their effectiveness. In the study, we propose a model to explain and predict the intensions to use an online evaluation system based on the theory of planned behavior. Implications and suggestions are provided for administrators in utilizing appropriate incentive programs.

2. Theoretical Background and Hypothesis

2.1 Theory of planned behavior

Being used as a useful lens for looking at user beliefs and behavior, Ajzen's (1991) theory of planned behavior (TPB) stands out as the most preferred model for prediction and understanding of a wide range of human behavior. It explicates relationships between attitudes, norms, perceived behavior control, intentions, and behavior. According to TPB, the immediate determinant of an individual's behavior is the intention to act or not. In turn, intention is jointly determined by three fundamental concepts of attitude towards the behavior, subjective norms, and perceived behavioral control, while each factor is in turn generated by a number of beliefs and evaluations. Moreover, Perceived behavioral control has a direct effect on behavioral intention, too (Ajzen, 1991). Figure 1 shows the model of planned behavior. In recent studies, TPB has been successfully used to explain the behavior of adoption or use of new technology (Taylor & Todd, 1995).

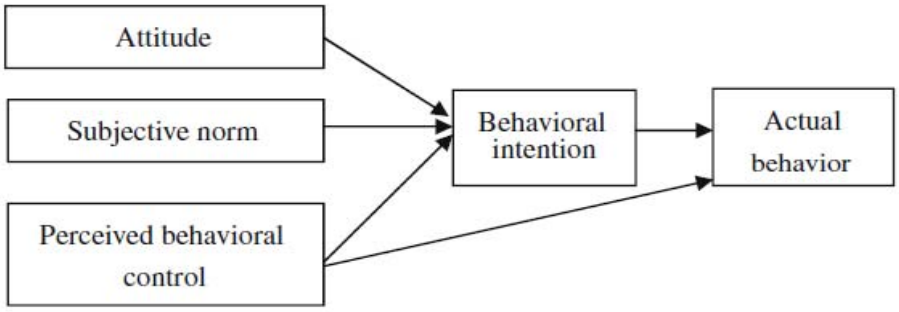

Fig. 1. The theory of planned behavior.

Source: From Azjen (1991)

2.2 Hypothesis

2.2.1 Attitude

Attitude towards a behavior is the degree to which a person has a more or less favorable assessment or appraisal of the behavior in question. The positive relationship between attitude and behavioral intention has received a strong empirical support in previous studies (Ajzen & Fishbein, 1980; Taylor & Todd, 1995). The TPB predicts that the more favorable an individual evaluates a particular behavior, the more likely he or she will intend to perform that behavior (Ajzen, 1991). Therefore, it is expected that student's favorable attitude towards the use of an online evaluation system positively influences their intention.

Hypothesis 1. Attitude of the students towards using online evaluation of teaching is positively related to the behavioral intention.

2.2.2 Subjective norms

Subjective norms reflect the individual's perception of whether groups or people of importance to oneself will approve or disapprove the performance of the adopted behavior. The more an individual perceives that significant referents think he/she should engage in the behavior, the greater the individual's level of motivation to comply with those others. Applied to the present study, subjective norms will reflect the student's perception of whether their behavior is encouraged and accepted within their circle of influence. Therefore a positive relationship between subjective norms and intention to use online evaluation system is hypothesized:

Hypothesis 2. Subjective norms of students in relation to usage of online evaluation affect behavioral intentions.

Taylor & Todd (1995) pointed out that different social groups might have different opinions regarding the adoption of a particular technology and will potentially influence the individual's intention to adopt the behavior. Other studies further suggested that two types of social influences: interpersonal influence (normative influence) and external environmental influence (informational influence) can be used as determinants of subjective norms. Interpersonal influence indicates word-of-mouth influence by friends, colleagues, family, and superiors, and it occurs when the person conform to the expectations of others; external influence, on the other hand, indicates mass media reports, expert opinions, and other non-personal information considered by the person when performing a behavior, and it occurs when the person accept information as evidence of reality (Bhattacherjee, 2000; Karahanna, Straub, & Chervany, 1999). Accordingly, in current study contexts, measures of subjective norms should also be further decomposed into different types of social influences.

Hypothesis 3. Each decomposed subjective norm also affects behavioral intentions.

2.2.3 Perceived behavior control

Perceived behavioral control reflects an individual's perception on whether one has the necessary resources, capability, and a sense of control in successfully performing the behavior. It is the perceptions of internal and external constraints on behaviors. Internal constraints related to knowledge/self-efficacy and external constraints relates to the environment (Ajzen, 1991). Past literature has demonstrated that perceived behavioral control is an important determinant of intention and use of technology (Taylor & Todd, 1995). Norris and Cann (2005) suggested that the reasons of low response rates for online delivered survey instrument are technical problems with online tool, difficult accessing open computers in campus laboratories, student's relative level of technological literacy, and slow internet connection rates. Thus, when people feel that they lack of the control to accomplish the behavior, they will have less intention to behave. However, "all else equal, a high level of perceived control should strengthen a person' intention to perform the behavior, and increase effort and perseverance. In this fashion, perceived behavioral control can affect behavior indirectly, by its impact on intention (Ajzen 2002, p.666)". Therefore, a positive relationship is hypothesized between perceived behavioral control and intention to adopt online teaching evaluation.

Hypothesis 4. Perceived behavioral control of users in relation to usage of online teaching evaluation positively affects behavioral intentions.

3. Methodology

3.1 Participants

The participants of this study consisted of 1217 students (779 undergraduate students and 438 graduate students) in a Taiwanese university. They are divided into 921(75.7%) male students and 296 (24.3%) female students.

3.2 Instruments

In order to meet the purpose of this study, several instruments were developed and used. This study adapted the measures used to operationalize the constructs included in the investigated model from relevant previous studies, making minor wording changes to tailor these measures to the context of current study.

The belief items measuring attitude, subjective norms, and perceived behavioral control were revised from the study of Taylor and Todd (1995), while items for social influences were constructed,

All items were measured using a four-point Likert-type scale (ranging from 1 = strongly disagree to 4 = strongly agree).

With the establishment of content validity, the questionnaire was refined through pre-testing. The pretesting focused on instrument clarity, question wording and validity. During the pre-testing, five experienced experts in the field were invited to comment on the questions and wordings. The comments of these individuals then provided a basis for revisions to the construct measures.

4. Results

After the variables are constructed, correlation tests were performed. Mean values, standard deviations, and Pearson's zero-order correlations for study variables are summarized in Table 1.

Table 1: Means, standard deviations, and correlations for study variables

			Correlations				
variable	mean	SD	1	2	3	4	5
1. Attitude	2.9855	0.49927	1				
2.Subjective norms	2.7662	0.52897	0.262***	1			
3.Perceived behavior control	3.1767	0.54976	0.420***	0.181***	1		
4.Prior Behavior	2.3394	0.39447	0.47***	0.261***	0.419***	1	
5.Behavioral intention	2.9665	0.50229	0.618***	0.351***	0.491***	0.539***	1

Notes. * p <0.05；**p<0.01；***p<0.001。

To test the hypotheses, a multiple regression analysis was performed. Results obtained from the regression analyses are presented in Table 2. Based upon the results, support was found for all four hypotheses. For hypothesis 1, a higher level of attitude of the students towards using online evaluation of teaching is predicted to be positively associated with to the behavioral intention (B=o.294, p<.0001). For hypothesis 2, a higher level of subjective norms perceived by the students towards using online evaluation of teaching is predicted to be positively associated with to the behavioral intention. For hypothesis 3, among the four social influences identified, only the perceived social norms from teacher and departmental were not significantly associated with the behavior intention ((Beta=-0.02, P>0.05). Furthermore, there was a negative standardized beta found for restriction influence (Beta=-0.061, P<0.01). For hypothesis 4, a higher level of perceived behavior control of the students towards using online evaluation of teaching is also positively affecting the behavioral intention (B=o.197, p<.0001). The six TPB components in this proposed model accounted for 56.2 % (adjusted R2) of the variance in the intention for students to use online teaching evaluation, and besides the social influence of teachers and departments, each of other antecedents made a significant contribution.

Table 2: Regression of study variables on intention of adopting online teaching evaluation

Dependent variable: Behavioral intention			
Independent Variables	Beta	t	p-value
Constant		0.920	0.358
Attitude	0.294	12.226	0.000***
Peer influence	0.126	5.005	0.000***
School influence	0.223	9.205	0.000***
Restriction influence	-0.061	-2.950	0.003**
Teacher and departmental influence	0.020	0.867	0.386
Perceived behavior control	0.197	8.986	0.000***
		R^2=0.562 adj R^2=0.562	
		F=221.952 P=0.000***	

Notes. * p <0.05；**p<0.01；***p<0.001。

5. Discussion

As stated previously, the purpose of this study was to explore possible determinants of student's intention of adopting an online evaluation of teaching through a revised Theory of Planned Behavior approach. The results provided support for using the theory to predict the intention of students' usage and suggested it may be a useful framework to guide interventions aimed at promoting the intention. Attitude, subjective norms, and perceived behavior control significantly contributed to intention to perform the behavior in question which supported previous research (Ajzen & Fishbein, 1980; Taylor & Todd, 1995).

Like other previous research on people's behavioral intentions in various contexts, attitude has been proved to be the most effective predictor in present study. This suggests that believing in the importance of using the online student rating system will be an incentive to participate. School could emphasize the benefits of the system by stressing the goals of the process, and how meeting the objectives can lead to better personal learning outcomes.

The second most important predictor of student's intention of usage is the school influence which is part of the subjective norms. In the present study, the school influence refers to how student's perceived the social norms induced by the school, such as if the school has sent out email reminders, put posters around the campus, or perceived that the school wishes them do the evaluation. This is similar to the external constraint or so called informational influences in other studies (Bhattacherjee, 2000; Karahanna, Straub, & Chervany, 1999). Another important significant predictor under the category of subjective norms is the peer influence. The finding indicates that when a student perceived more of his/her peers' opinions on using the system, he would be motivated to comply with them. One implication of this finding is that school looking to facilitate student participation in evaluation may find it effective to strengthen perceived group norms regarding the participation, and it might be achieved by extensively publicizing the implementation effort and ensuring that it is thoroughly discussed among the students, which can be done by student government association or some other campus organizations.

Another important finding is the negative significant effect of restriction influence on student's intention of using the online evaluation. This result shows that the more students perceived that they will be punished if they do not participate in the online evaluation, the less they are willing to

participate. This implies that school should not use restrictions to force students to participate otherwise there will be unintended outcomes resulted. Other researchers discussed the method of forcing the students to complete those surveys may lead to unreliable responses and limited information from open-ended questions (Leung & Kember, 2005).

Finally the perceived behavior control is also a significant predictor of student's behavior intention found in the study, and this finding is consistent with the findings of other studies. In this context, perceived behavioral control describes students' perception of the availability of skills, knowledge, resources and experiences necessary for using the online evaluation system. Here, the more they perceived they have the control, the more adoption intention they will have.

6. Conclusion

Even though researches have found that student ratings can be a reliable and valid indicator of effective teaching, most of those evaluations were done under total volunteering basis. Students can make the decision on whether they want to do the evaluation or not; as a result, usually schools will find a vital problem of low responsive rate in those newly introduced online evaluation system. In the present study, we were able to use TPB to identify the determinants of a student's intention to adopt the online evaluation system in a university in Taiwan. When specific antecedents are identified as significant predictors of intention, interventions can be designed to influence the antecedents as a way to influence intention, and thus behavior.

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