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From Expectation to Actual Perception after Experience: A Longitudinal Study of the Perceptions of Student Response Systems

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ABSTRACT

Interactive student response systems (SRSs) are becoming popular as many instructors at the tertiary level education institutions adopt the systems to transform traditional passive lectures into interactive classes. Despite the popularity and numerous benefits of SRSs, there is conflicting evidence regarding the current levels of perceptions and actual performances before and after use the systems. We believe the inconsistent result stems from the differences between the level of expectation and the level of actual perceptions after they use the systems. Students' beliefs and attitudes are key perceptions toward the information technology (i.e., SRSs) usage. However, these perceptions may change over time as they gain direct experience with the technology. In this study, therefore, we test students' expectations and perceptions of the technology and provide a comparative result from a longitudinal perspective. More specifically, in this study, we examine students' perceptional differences in terms of well-known technology acceptance constructs such as perceived usefulness, ease of use, enjoyment, and intention to use the systems before and after they actually use the systems.

The results confirm that there are differences between the levels of expectations and actually perceptions of cognitive beliefs across three-stage of experience. However, there are no differences of students' perceptions between initial usage and second-time usage. In other words, the very first direct experience of students will become a salient determinant of their perception of cognitive beliefs and behavioral intention, but the second experience does not provide the same level of impact as much the first one does. We believe that the result of the study will provide solid understanding of the gap between the levels of expectations and actual perceptions of a technology before and after usage, which will explain the inconsistent results related to the SRSs. Limitations and future directions are discussed.

Keywords

Student response systems, expectation, perception, technology acceptance model, three-stage study

INTRODUCTION

Interactive electronic student response systems (hereafter SRSs[1]) are efficient tools that collect instantaneous responses from masses of audiences in various settings including teaching and instruction. Since the SRSs were introduced to classrooms of educational institutions, many research groups have studied the effectiveness of SRSs from various perspectives (Cain et al. 2009; Duncan 2002; Grant et al. 2009; Lantz 2010; Martyn 2007; Patry 2009).

A body of research (Beatty 2004; Hinde and Hunt. 2006; Johnson 2004; Martyn 2007; Mollborn and Hoekstra 2010; Morling et al. 2008; Patry 2009; Smith et al. 2009) report that SRSs offer active learning approaches to improve learning outcomes in classrooms. For example, SRSs emphasize the principles of good practice in undergraduate education (Johnson 2004; Kaleta

[1] Student response systems are also known as "clicker" systems, group response systems (GRS), classroom communication systems (CCS), audience response systems (ARS), or personal response systems (PRS). The systems consist of three components: the system software to design an interactive presentation during lecture, remote-control size response units or clickers, and a receiver which usually connects to the computer being used in the classroom.

and Joosten 2007), to help instructors actively engage students during the entire class period (Beatty 2004), to gauge students' level of understanding through providing prompt feedback to their questions (Martyn 2007), and to provide a mechanism for enhancing active learning (Hinde and Hunt. 2006). SRSs provide an effective way students can participate in a class session beyond the traditional passive role in large classes (Cutts 2006; McCabe 2006; Webking and Valenzuela 2006). SRSs are especially effective with shy students as their responses can be collected, aggregated, and shared anonymously (Mollborn and Hoekstra 2010).

However, some studies (Carnaghan and Webb 2007; Morling et al. 2008; West 2005) show that there is limited supporting evidence of improving learning outcomes. For example, Carnaghan and Webb (2007) report that there is no clear evidence that students' engagement increases when SRSs are introduced into their courses. Morling et al. (2008) state that learning outcomes of students using clickers do not improve more than those of students in the non-clicker classes, although SRSs led to a small and positive effect on exam scores. No significant differences of mean scores were observed in the student perception comparisons of using SRSs or class discussion (Martyn 2007). Actually, better learning outcomes result from changes in pedagogical focus from passive to active learning not from use of a specific technology or technique (West 2005).

Although SRSs are becoming popular as many instructors adopt the systems to transform traditional passive lecture courses into interactive classes (Kaleta and Joosten 2007), there is conflicting evidence about the current levels of perceptions and actual performances of SRSs. We believe that the inconsistence is caused by the differences in the levels of expectation and actual perceptions after users have direct experience of the systems. Students' beliefs and attitudes are key perceptions toward the information technology (i.e., SRSs) usage. These perceptions may change over time as they gain direct experience with the technology.

There is limited effort to explain the inconsistence. Therefore, this study tests students' expectations and perceptions of the technology from a three-stage (i.e., before, initial, and second time usage) perspective in the context of SRSs at the tertiary level education setting. More specifically, in this study, we examine the changes of students' perceptions toward SRSs after an intervention (i.e., direct experience) in terms of technology acceptance/usage constructs such as perceived usefulness, ease of use, enjoyment, and intention to use the systems. We believe that the result of the study provides solid understanding of the gap between expectation and actual perception of a technology, which explains the inconsistent results related to the performance of SRSs.

THEORY BACKGROUND AND LITERATURE REVIEW

Many researchers have investigated the user perception and views of information technology (IT) products in terms of initial acceptance and continued usage in order to understand the usage behavior for IT (Bhattacherjee 2001; Hong et al. 2006; Karahanna et al. 1999). Technology Acceptance Model (TAM) is mainly relevant to the work presented in this paper.

TAM is a well-proven model and is commonly used to study and analyze users' behavior in IT. The TAM model was originally designed to examine the initial user behavior towards a new IT. TAM proposes two major technology acceptance measures (i.e., perceived usefulness and perceived ease of use) and used them to predict IT acceptance. To further enhance the prediction of user behavior for future and continued use of the new IT product, the TAM model introduces some intervention steps to determine a user's perception after each interaction with the examined IT system (Davis et al. 1989). Examples adopted this model are study cases and investigations of IT systems that include word processor, email system, graphics systems, virtual workplace systems, data retrieval system, and proprietary information systems (Davis et al. 1989; Hong et al. 2006).

After great efforts to extend the TAM, which have yielded a variety of research results including Task-technology Fit (Goodhue and Thompson 1995), TAM2 (Venkatesh and Davis 2000), the Unified Theory of Acceptance and Use of Technology (Venkatesh et al. 2003), the Expectation-Confirmation Model in the context of IT (Bhattacherjee 2001), and TAM3 (Venkatesh and Bala 2008), several robust constructs such as perceived usefulness, perceived ease of use, perceived enjoyment, social influence (or social norms), and other facilitating conditions have been identified to significantly influence users' intention to accept technology and actual use. Drawing upon the previous studies' results related to TAM, this study mainly focuses on four robust and well-known technology acceptance constructs: perceived usefulness, ease of use, enjoyment, and intention to use.

Hong, Thong, and Tam (2006) studied the usage behavior for the purpose of continued usage of information technology. Specifically, in their study, they examined and analyzed three models (TAM, ECM, and a hybrid of both) for understanding the initial and continued acceptance of information technology. In their study, they surveyed around 1800 mobile internet users for their initial perception and continued acceptance of the underlined information technology. They found that TAM model is the most suitable for studying the initial as well as continued usage of IT usage and acceptance (Hong et al. 2006).

Among the most related work to SRSs is the study conducted by Walton et al. (2008). In that study, they identified and measured certain aspects that influenced the student perception and attitude regarding the usage of SRSs in the classroom. Students were surveyed to measure their perceptions and attitudes across these sixteen research questions. They also presented the significant differences between the sub-categories (Walton et al. 2008). The results of the study show that students have enhanced in their class participation and attention with SRSs.

Cain et al. (2009) studied the effect of SRSs in the classroom for improving motivation and attention of students in the classroom. They conducted the study on a group of little more than 100 first year pharmacy students. In their study, they placed six to seven "*strategically placed*" questions that promoted students attention and provided feedback on students' comprehension on material. The students used SRSs in answering these questions. This study showed that 93% of the students reported that these SRSs questions did help them maintain attention throughout the lectures (Cain et al. 2009).

In another related research, Grant et al. (2009) conducted a research about the perceived skills compared with the actual skills of some computer topics among students of a public university. This work is related to our work as it examines the user perception, and usage behavior of an IT system. Among other computer skills, the study found that there are some differences in the students' perception of their word-processing skills compared with their actual skills in word processing.

RESEARCH MODEL AND HYPOTHESES

People continually adjust and even revise their opinions, beliefs, and behaviors as they have new information and experiences. Any change in expectations, attitudes, and perceptions will likely have an impact on their intentions and behaviors which, in turn, will affect their performance[2]. In the context of computer and information systems, earlier studies (Bhattacherjee and Premkumar 2004; Szajna and Scamell 1993; Venkatesh and Morris 2000) show preliminary empirical evidence that users' beliefs and attitudes do change over time. Likewise, students' perceptions and attitudes toward the SRSs also change over time as they learn more about the technology (i.e., SRSs) and get more direct experience.

Focusing on students' perceptions of the SRSs technology from a three-stage perspective, in this study, we propose a research model (see Figure 1) to test whether students' direct technology experience is an intervention to affect their perception of the SRSs usage. Especially, we concentrate on four main constructs from the extended TAM (i.e., Perceived Usefulness, Ease of use, Enjoyment, and Intention to use) because these perceptions has been identified as the key factors of both initial acceptance and continuance usage of technology (Chau 1996; Ghorab 1997; Lee et al. 2003; Lee et al. 2006; Saade and Bahli 2005; Szajna 1996; Venkatesh and Bala 2008; Venkatesh and Davis 2000; Wixom and Todd 2005).

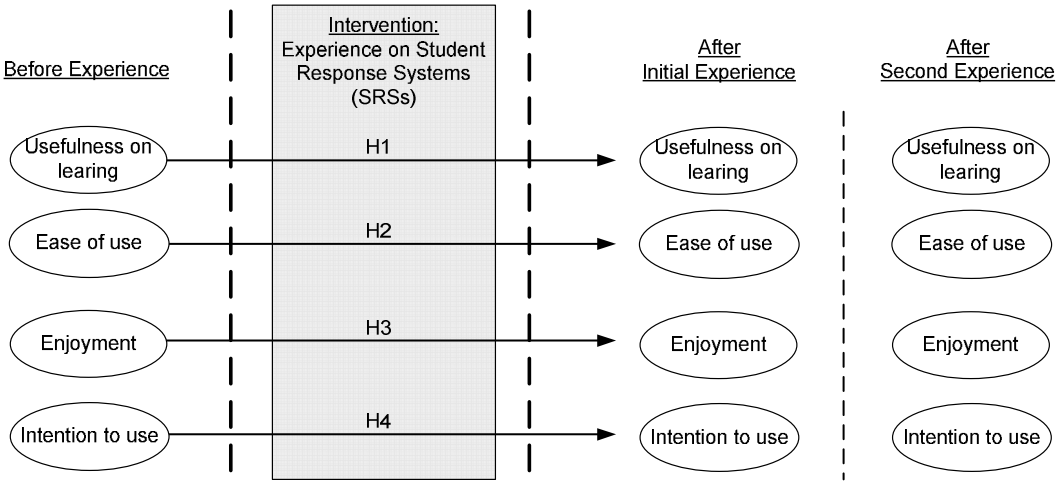

Figure 1: Research Model

[2] Although the effect of expectations and attitudes toward a technology will determine users' perception, intention to use, and, in turn, their performance, in this study, we primly focus on the change of expectations, attitudes, and perceptions as a result of direct experience.

Perceived usefulness refers to the degree to which an individual perceives that using a technology will enhance his or her job performance (Davis 1989; Venkatesh and Bala 2008; Venkatesh and Davis 2000). In the context of learning using SRSs, we define a student' perceived usefulness of SRSs as the degree to which a student believes that using SRSs technology will improve his or her learning. Based on a cognitive appraisal of how technology will improve their job performance, individuals form behavioral intentions toward using the technology (Dasgupta et al. 2002; Davis 1993). Many studies on TAM (Agarwal and Prasad 1998; Davis 1993; Keil et al. 1995; van der Heijden et al. 2003; Venkatesh and Bala 2008; Venkatesh and Davis 1996) have provided empirical evidences for the important and direct effect of perceived usefulness on behavior intention. Especially, Venkatesh et al. (2003) argue that this construct is the strongest predictor of behavior intention, which is consistent with many previous studies (Agarwal and Prasad 1998; Taylor and Todd 1995; Venkatesh and Davis 2000).

Perceived ease of use refers to the degree to which a person believes that using an IT will be free of effort (Davis 1989). Like perceived usefulness, this construct has been explored extensively in the previous literature and the importance of perceived ease of use as a key determinant of behavior intention has been supported by many studies (Davis 1989; Gefen et al. 2003; Gefen and Straub 2000; Hackbarth et al. 2003; Venkatesh 2000).

As an intrinsic motivation, *perceived enjoyment* refers to the extent to which students perceive SRSs to be personally enjoyable and fun. The relationship between perceived enjoyment and behavior intention is supported by several studies (Agarwal and Karahanna 2000; Davis et al. 1992; Teo et al. 1999; Venkatesh 2000). It is natural that when students are interested in the SRSs and enjoy using them, they are self-determining and intrinsically motivated to use the systems again. Thus, it is an important determinant of both initial technology acceptance and continuance usage.

In this study, we expect that students are more likely to participate in learning activities with high expectations using the SRSs in the initial stage of usage. However, after they have direct experience, the level of their perceived usefulness may be changed. By the same token, although students have higher expectations of SRSs in terms of ease of use and enjoyment in the initial usage stage, their levels of expectations will change after they gain first-hand and second-hand experience. Therefore, we propose the following hypotheses[3]:

Hypothesis 1*: After the intervention, there is a significant difference between students' perception on usefulness of the SRSs on learning across all three periods (before experience, after initial experience, and second time experience).*

Hypothesis 2*: After the intervention, there is a significant difference between students' perception on ease of use of the SRSs across all three periods (before experience, after initial experience, and second time experience).*

Hypothesis 3*: After the intervention, there is a significant difference between students' enjoyment of the SRSs across all three periods (before experience, after initial experience, and second time experience).*

Hypothesis 4*: After the intervention, there is a difference between students' intention to use the SRSs on learning across first and second time experiences.*

RESEARCH METHODOLOGY AND DATA ANALYSIS

To test the research model and hypotheses, we conduct three-round surveys with a three-stage design, because survey methodology is an easy way to capture student self-report perceptions. Following the recommendation by Bentler and Chou (1987), we apply multiple measures for each construct to provide more accurate representation of the concept of construct. Since most research constructs of this study have been well established in the existing technology acceptance literature, a series of measurement items for each construct are adapted from previous literature and revised to enhance the validity of measurement of students' perceptions on the SRSs before and after their direct experience. Most of the items used a 7-point Likert scale system ranging from strongly disagree (1) to strongly agree (7). The items are presented in Appendix A.

Data Collection

Data are collected in undergraduate classes at two public universities using a set of SRSs as a classroom tool to evaluate quizzes. At the first round, students receive a quick presentation covering what SRSs are how to use the systems. After the presentation, respondents are directed to take pre-experience survey. Without actual experience of using the SRSs, they are

[3] The causal relationships among research constructs are not the core of the research model of this study because they are well discussed, designed and tested already in previous TAM studies (see Lee et al. 2003 for example).

encouraged to answer all questions about the extent to which they perceived usefulness on learning, ease of use, enjoyment of SRSs, and their willingness to use the systems. In addition, they provide demographic information including experience on computers and Internet technology. To collect valid sample, we ask respondents to answer whether they have any direct experience of the SRSs before.

After students have the initial experience of the SRSs (i.e., use the SRSs to take a set of multiple choice questions for a classroom quiz), they are directed to take a post-survey with the same questions as the first round, except the demographic questions. To measure the change of their perceptions toward the technology, few weeks after the second survey, we conduct another survey with the same questions after they have second-experience. A total 112, 108, and 97 responses for the first, second, and third round were received, respectively. After eliminating invalid responses, a total of 91 usable responses were collected.

The mean age of the usable respondents is around 25 years with a range from 19 to 59 years and standard deviation of 6.99 years. The gender of the sample comprises 80% male and 20% female. They evaluate themselves having good computer and Internet skills. Table 1 summarizes the characteristics of 91 usable samples.

Characteristics (Mean (S.D.))	
Age	25.25 (6.99)$^{+}$
Gender (Frequency; Percentage)	
Male	73; 80
Female	18; 20
Hours per day on the web (web searching, browsing, e-mail checking, chatting, etc.)	6.91 (3.85)
Hours per day on computer (including spending on the web)	8.39 (3.88)
Self rating on computer skill (1-Novice / 7-Expert)	5.64 (1.27)
Self rating on the Internet skill (e.g., searching, browsing, finding information, etc.) (1-Novice / 7-Expert)	6.06 (1.10)

Note: + - Mean (S.D.): standard deviation; n = 91

Table 1: Sample Characteristics

Measurement Testing

Although most constructs of the study are adopted from previously well established literature sources, the validity of measures is examined. Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) are used to assess the reliability (internal consistency), convergent validity, and discriminant validity of each construct, respectively. Table 2 shows that all Cronbach's Alphas are ranged from 0.88 to 0.99 that are greater than the 0.70 threshold suggested by Nunnally (1978). All values of Composite Reliability are exceed the recommended level of threshold, 0.70 (Nunnally and Bernstein 1994). All values of AVE also meet to the recommended level of threshold, 0.50 (Fornell and Larcker 1981) and the square root of the AVE for each construct is greater than the levels of correlations related to the construct. Hence, the results indicate that reliability, convergent validity, and discriminant validity are demonstrated.

(Before experience)								
Constructs	Alpha	CR	AVE	1	2	3	4	
1. Perceived Usefulness	0.950	0.958	0.720	**0.845**				
2. Ease of use	0.949	0.960	0.829	0.691	**0.911**			
3. Perceived Enjoyment	0.884	0.921	0.746	0.481	0.538	**0.864**		
4. Intention to use	0.925	0.947	0.817	0.575	0.675	0.708	**0.904**	
(After Initial-experience)								

Constructs	Alpha	CR	AVE	1	2	3	4	5
1. Perceived Usefulness	0.979	0.982	0.857	**0.926**				
2. Ease of use	0.974	0.980	0.907	0.702	**0.952**			
3. Perceived Enjoyment	0.925	0.947	0.817	0.797	0.420	**0.904**		
4. Satisfaction	0.955	0.968	0.883	0.636	0.752	0.547	**0.940**	
5. Intention to use	0.979	0.984	0.940	0.763	0.688	0.677	0.593	**0.969**
(After Second-experience)								
Constructs	Alpha	CR	AVE	1	2	3	4	5
1. Perceived Usefulness	0.995	0.996	0.962	**0.981**				
2. Ease of use	0.990	0.992	0.963	0.640	**0.981**			
3. Perceived Enjoyment	0.974	0.981	0.928	0.556	0.556	**0.964**		
4. Satisfaction	0.996	0.997	0.988	0.629	0.662	0.521	**0.994**	
5. Intention to use	0.995	0.996	0.984	0.700	0.613	0.638	0.718	**0.992**

Note: 1) CR: Composite Reliability, AVE: Average Variance Extracted, 2) Diagonal elements are the square root of AVE. These values should exceed the off-diagonal inter-construct correlations for adequate discriminant validity.

Table 2: Reliability, Correlation, and Discriminant Validity of Constructs

Data Analysis

To statistically examine the effect of direct experience as an intervention influencing perceptions of SRSs, three sets of Paired Samples t-tests are calculated to compare before and after perceptions of usefulness, ease of use, enjoyment, and intention to use the technology. Using paired sample t-test to compare the means of a criterion variable for two dependent samples (e.g., matched-pairs studies within-group), we can identify the existence of a significant change in perception of SRSs. Table 2 summarizes the results of the t-tests.

Table 3a: Results of Paired Mean t-Test (Pre- and Initial-experience)

Constructs	Pre-experience Mean (S.D.)	Initial-experience Mean (S.D.)	Second-experience Mean (S.D.)	Mean Differences	S.D.	t-statistic	P-value
Perceived Usefulness	4.45 (1.26)	3.78 (1.73)	-	0.669	2.015	3.254	.002**
Ease of use	5.07 (1.44)	4.57 (1.97)	-	0.503	2.360	2.089	.039*
Perceived Enjoyment	4.83 (1.35)	4.11 (1.83)	-	0.715	2.148	3.260	.002**
Intention to use	4.57 (1.46)	3.89 (1.96)	-	0.675	2.315	2.855	.005**

Table 3b: Results of Paired Mean t-Test (Pre - and Second-experience)

Constructs	Pre-experience Mean (S.D.)	Initial-experience Mean (S.D.)	Second-experience Mean (S.D.)	Mean Differences	S.D.	t-statistic	P-value
Perceived	4.45 (1.26)	-	3.47 (1.10)	0.972	1.620	5.879	.000**

Usefulness							
Ease of use	5.07 (1.44)	-	4.23 (1.31)	0.837	1.753	4.676	.000**
Perceived Enjoyment	4.83 (1.35)	-	3.93 (.99)	0.899	1.565	5.629	.000**
Intention to continue to use	4.45 (1.26)	-	3.45 (1.31)	1.113	1.979	5.511	.000**

Table 3c: Results of Paired Mean t-Test (Initial- and Second-experience)

Constructs	Pre-experience Mean (S.D.)	Initial-experience Mean (S.D.)	Second-experience Mean (S.D.)	Mean Differences	S.D.	t-statistic	P-value
Perceived Usefulness	-	3.78 (1.73)	3.47 (1.10)	0.303	1.966	1.509	.135
Ease of use	-	4.57 (1.97)	4.23 (1.31)	0.334	2.511	1.302	.196
Perceived Enjoyment	-	4.11 (1.83)	3.93 (.99)	0.184	1.990	0.906	.367
Satisfaction	-	3.89 (1.81)	3.48 (1.23)	0.408	1.892	2.115	.037*
Intention to continue to use	-	3.89 (1.96)	3.45 (1.31)	0.438	2.065	2.080	.040*

Note: * and **are significant at each .05 and .01 level, respectively

Table 3: Results of Paired (Pre- and Initial-experience) Sample t-tests

The first two paired mean t-tests results (i.e., the two t-tests between before and after first-experience and between before first-experience and after second-experience) show that a significant decrease in students' perceptions of usefulness, ease of use, enjoyment, and intention to use after their direct experience. However, there are no significant differences after initial experience and after second experience in students' perceptions on usefulness, ease of use, and enjoyment. Interestingly, their satisfaction level and intention to use the technology are even decreased after second direct experience. Inferring from the t-test results, we can argue that the intervention is the major factor that affects the different level of perception of the SRSs. In other words, after direct initial experience, students may have different perceptions on the SRSs. However, there is no difference between students' perception on the usefulness of SRSs in learning, ease of use, and enjoyment between first and second time experience

DISCUSSION AND CONCLUSION

The goal of this study is to investigate students' perceptional differences in terms of well-known technology acceptance constructs such as perceived usefulness, ease of use, enjoyment, and intention to use the SRSs before and after their direct experience as an intervention. We believe this is an important topic of study, because the effect of students' expectation and attitudes toward the SRSs will establish users' intention to use and, in turn, their performance. Thus, we propose a research model to test whether students' direct technology experience affects their perception of the SRSs usage.

The results of this study confirm that there are differences between individual expectation and perception of cognitive beliefs (usefulness, ease of use, and enjoyment in this study) and their intention to use the SRSs across first- and second-time experiences. However, there are no differences of students' perceptions between after initial experience and after second-time experience. In other words, the very first direct experience of students will become a salient determinant of their perception of cognitive beliefs and behavioral intention, but the second experience does not provide the same level of impact as much the first one does.

This may have important implications for educators. Now, we are facing a new generation of students who can master sophisticated equipments much quicker and value the enjoyment and satisfaction of the learning process much more. The first impression is very important for them. Although they have higher expectations on a new technology such as the SRSs in the

early stage of adoption, their cognitive beliefs and behavioral intention will be changing quickly after they have direct experience. Thus, to be successful to use the SRSs effectively, instructors should be advised to spend enough efforts to provide a positive first impression of the SRSs to students.

Although this study gives an insight about the change of individual expiation and cognitive beliefs from three-stage perspective, there are some limitations which require future research. First, this study does not cover students' performance measure such as their quiz score and/or final grade as a result of the effective use of the SRSs. With reasonable experimental settings, it would be an interesting future research to exam actual performance as a result of their perceptional changes Furthermore, the younger generation is immersed in social networking as evidenced by the popularity of Facebook. With high degree of openness, students are accustomed to gauge their own statuses and activities with respect to their friends. The SRSs allow similar provision of relative learning progress with respect to the peers. Actively exploring this capability of SRSs may fit well with the culture of younger learners. Thus, another future research can elaborate the effects of generation and learning styles on their cognitive beliefs and actual performance in a classroom setting.

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APPENDIX A: MEASUREMENT ITEMS

Constructs	Measurement Items	Adapted from
Perceived Usefulness on Learning (1- strongly disagree / 7- strongly agree)	After the presentation of the SRSs (for the first round)/ After used the SRSs (for the second and third round), I feel that: PU1: I can easily learn from answering questions through the SRSs. PU2: My understanding of the meaning of course material has been enhanced through the SRSs PU3: My knowledge of major concepts, methods, and theories related this course material has been improved through the SRSs. PU4: My ability to solve problems using what I learned in this class has been improved through the SRSs. PU5: My problem solving skill has been improved through the SRSs. PU6: Using the SRSs can improve my learning performance. PU7: Using the SRSs can make it easier to learn. PU8: Using the SRSs can provide better learning environment. PU9: Seeing the summarized class answers to the SRSs help me track my progress in the course.	(Davis 1989; Gefen 2000; Gefen et al. 2003; Saade and Bahli 2005; Subramanian 1994; Swaminathan et al. 1999)
Perceived Ease of Use (1- strongly disagree / 7- strongly agree)	EOU1: Answering questions using the SRSs is easy for me EOU2: My interaction with the SRSs will be clear and understandable. EOU3: I find the SRSs to be flexible to interact with. EOU4: It is easy for me to become skillful at using the SRSs. EOU5: Overall, I find the SRSs are easy to use.	(Chen et al. 2002; Gefen 2000; Gefen et al. 2003; Saade and Bahli 2005)

Perceived Enjoyment (1- strongly disagree / 7- strongly agree)	PE1: I find the SRSs interesting. PE2: I feel comfortable using the SRSs in this course. PE 3: I enjoy using the SRSs to answer questions in this course. PE 4: I have enough time to answer the questions with the SRSs. PE 5: I felt under a lot of pressure answering questions using the SRSs. *	(Sun and Zhang 2006; Yi and Hwang 2003)
Intention to use (1- strongly disagree / 7- strongly agree)	INT1: I am likely to use the SRSs INT2: If I get a chance, I would like to recommend instructors to use the SRSs INT3: I would like to participate in any activities using the clickers systems (e.g., quick polls, quick surveys, quizzes, etc.) INT4: The SRSs make me feel more comfortable participating in the course.	(Chen et al. 2002; Gefen 2000; Gefen et al. 2003; Saade and Bahli 2005)

Note: * - Reverse Coded