

## THE DARK SIDE OF PERSONAL RESPONSE SYSTEMS

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### **The Dark Side of Personal Response Systems (PRSs): Boredom, Feedback, Perceived Learning, Learning Satisfaction**

**Abstract**

In the context of the use of personal response systems (PRSs) in the classroom, the main two main motivations of the study were to investigate whether boredom with the devices decreased students' perceived learning and learning satisfaction, and whether teachers' provision of feedback moderated these negative effects. A survey was conducted among 172 business undergraduate students at a local university in Hong Kong. Descriptive statistics and regression analyses were used to analyze the data. Results indicated that perceived learning mediated the relationship between boredom and learning satisfaction. This study found that the negative relationship between boredom with PRSs and learning satisfaction was weaker when teachers provided higher levels of feedback. A key managerial implication for academic educators was that teachers could develop better learning experience to students by providing high quality feedback in PRSs context.

*Keywords:* personal response systems, boredom, perceived learning, learning satisfaction, teachers' feedback

### **The Dark Side of Personal Response Systems (PRSs):**

#### **Boredom, Feedback, Perceived Learning, Learning Satisfaction**

In the last decade, the use of personal response systems (PRSs) in teaching and training settings has received increased attention in the management and education literature (Buil et al., 2019; Rana et al., 2016; Rana & Dwivedi, 2018; Voith et al., 2018; Simelane-Mnisi & Mji, 2019; Wu, Wu & Li, 2019). PRSs are interactive platforms used to engage learners in class (Latham & Hill, 2014). PRSs capture students' responses to questions, then report and display the results in a diagram. The PRSs allow students to respond to these pre-assigned questions anonymously (Caldwell, 2007; Mayer et al., 2009). The majority of these studies have focused on the influence of PRSs on students' learning attitudes and learning performance (Chan & Ko, 2019; Hung, 2016; Kay & LeSage, 2009; Rana & Dwivedi, 2017). The relationships between interactivity, active collaborative learning, and engagement on students' learning performance have also been examined (Blasco-Arcas et al., 2013; Chan, Wan, & Ko, 2019).

Studies have found both positive and negative impacts of the use of PRSs on student's learning and learning performance (e.g., So & Brush, 2008). Using different teaching strategies, Liu et al. (2017) analyzed the effects of PRSs on students' learning. The use of PRSs in higher education has been found to be challenging on pedagogy of learning for students in across the whole learning process (Shapiro et al., 2017). It has also been found that students may experience negative emotions in relation to the use of PRSs, such as boredom (Pekrun et al., 2002), which may result from repeated use of PRSs in class.

Boredom is a negative emotion that is negatively associated with students' perceived learning and learning satisfaction (Sharp et al., 2017). Various studies have looked at the effect of boredom on learning. Students' proneness to boredom was found to be negatively related to their

attentiveness in class (Farmer & Sundberg, 1986). Putwain et al. (2018) explained the relationships between students' academic enjoyment, boredom, and achievement. They found that the relations of academic enjoyment and boredom were mediated by achievement. Amid the abundance of studies focusing on the role of PRSs in enhancing enjoyment in learning (e.g. Buff, 2014), few researchers have explored the possible negative impact of PRSs on students' learning performance (Pekrun, Hall, et al., 2014; Putwain et al., 2018; Sharp et al., 2017). Thus, the primary aim of this study was to examine how boredom with the use of PRSs is associated with perceived learning, which in turn influences learning satisfaction.

Another gap in the existing literature is the lack of studies exploring the interactive effect of other variables with the use of PRSs on students' learning performance. One such variable is feedback. Feedback is a key element of learning, and feedback from teachers to students is always beneficial to students' performance. In past studies, feedback was found to help predict students' achievement goals and emotions (Pekrun, Cusack, et al., 2014). In one study, feedback that was specifically given in the context of the PRS use was found to directly affect the effectiveness of learning (Lantz & Stawiski, 2014). The negative effect of boredom resulting from repeated use of PRSs might therefore be countered by the usefulness of the device as part of teachers' instant feedback mechanism in class. In other words, feedback from teachers through the use of PRS polling may neutralize the boredom associated with using PRSs, thus mitigating the negative impact of this boredom on perceived learning and learning satisfaction. Hence, the second purpose of our study was to investigate whether teachers' feedback moderates the negative effect of boredom of PRSs.

### **Literature Review**

In the fields of business and management education, PRSs have been found to be effective at engaging individual learners' commitment, encouraging interactions among peers,

and giving students immediate feedback (Farag et al., 2015; Rana et al., 2016). PRSs have also been found to encourage student usage, participation, engagement, increase interest in learning, and improve attendance (Buil, Catalan & Martinex, 2016; Hedgcock & Rouwenhorst, 2014; Kim, Yi & Hong, 2020; Li & Wong, 2020).

Despite the benefits of PRSs, there are several problems associated with using PRSs in classes. Teachers have to exert additional effort, allocate enough time, and create effective questions when using PRSs. In one study, Stowell (2015) compared mechanisms for conducting polling during lessons. Students who used PRSs instead of other polling methods had a greater number of missing responses, and expressed lower levels of satisfaction. Hunsu et al. (2016) conducted a meta-analysis on the impacts of PRSs on cognition and affect in the classroom, looking at different variables such as the knowledge domain of the class, class size, and the use of questions. The impact of PRSs on students' perceptions of teaching and learning has been reviewed (Lantz and Stawiski, 2014; Mubayrik, 2020; Pearson, 2020). PRSs allow individual learners to use a remote control to respond to questions presented in class (Lantz, 2010).

## **Theory and Hypotheses**

### **Boredom, Perceived Learning, and Learning Satisfaction**

PRSs have been adopted as a learning tool to improve the effectiveness of teaching and learning in the classroom (Stowell & Nelson, 2007), by helping to foster student involvement and engagement. In contrast, boredom has been described as an unpleasant feeling and a reeducated physiological state. It has been associated with a perceived lack of cognitive stimulation, irrelevant task and thinking, and impulses of disengagement of boredom-inducing situation (Pekrun et al., 2010). It is one of the negative measures among achievement emotions in students' learning and academic performance (Pekrun et al., 2009; Pekrun et al., 2011). If students find the use of PRSs to

be boring, they may give up trying to figure out how they can use PRSs to enhance their learning expectations.

Boredom has been negatively correlated with learning outcomes such as behavioral engagement (Skinner et al., 2008) and perceived learning (Craig et al., 2004). Wat and Vodanovick (1999) found that students' boredom was negatively related to educational involvement and career planning. As such, this study contends that boredom related to the use of PRSs has an effect on the learning process. Boredom with PRSs is expected to have a negative impact on learning satisfaction and perceived learning.

*Hypothesis 1.* Boredom is negatively associated with (a) perceived learning and (b) learning satisfaction.

### **The Mediating Role of Perceived Learning**

Empirical studies have cited perceived learning as a mechanism to explain the effect of boredom and learning satisfaction (Duque, 2014; Eom & Wen, 2006; Hackman & Walker, 1990). Kang et al. (2014) examined the effect of the perception of learning presence on achievement and learning satisfaction. Students perceived their learning effort would increase their satisfaction (Eom et al., 2006). The use of PRSs may encourage active participation in class discussions and interaction with the teachers, thus contributing to a learning environment that positively affects perceived learning. Indeed, participation in class discussions and student satisfaction have been found to be associated with perceived learning among students (Lo, 2010; Wombacher et al., 2017).

However, as mentioned above, students have different experiences with using PRSs, with some students expressing feelings of boredom with their use. This in turn may also have an effect on students' feelings toward their learning and performance. Academic boredom has been

found to lower students' perceived learning (Sharp et al., 2017; Baturay, 2011). Thus, this study predicts that if students feel bored, their levels of perceived learning and satisfaction will be low (Guo et al., 2007). It is proposed that boredom has a negative effect on students' perceived learning, which in turn tends to decrease students' learning satisfaction.

*Hypothesis 2.* Perceived learning mediates the relationship between boredom and learning satisfaction.

### **The Moderating Role of Feedback**

Students' emotions, including negative emotions such as boredom, can influence the impact of perceived learning and satisfaction. At the same time, feedback from teachers is largely beneficial for students in the learning process. If teachers use the PRSs to provide constructive feedback, students should have better perceived learning. In addition, they should be more willing to seek feedback, and they should value the feedback more. The presence of feedback would thus be a major determinant of learning satisfaction, possibly compensating for the impact of negative emotions experienced, including boredom related to the use of PRSs.

In light of this, boredom may not necessarily have a negative effect on how students perceive their own learning if they receive feedback from their teachers (Banerjee, 2014; Pekrun et al., 2014). Self-monitoring approaches are more effective for students to receive feedback in the learning process (Zimmerman & Schunk, 2001). Thus, the benefits of receiving feedback are likely to "neutralize" the negative emotion of boredom associated with the use of PRSs. Thus, if teachers provide more feedback to students, students should be more satisfied despite any feelings of boredom they might have with the use of the PRSs. As such, the negative relationship between boredom and perceived learning would be weaker when teachers provide higher levels of feedback.

*Hypothesis 3.* The negative relationship between boredom and perceived learning is weaker when teachers provide higher levels of feedback.

This study contends, as expressed in Hypothesis 2, that perceived learning would mediate the relationship between boredom with using PRSs and learning satisfaction. The negative effect of boredom may be “neutralized” by having better feedback, such that students focus more on the quality of feedback on their learning experience. In line with the theoretical framework, this study holds that the negative relationship between boredom with using PRSs and learning satisfaction would be weaker when teachers exhibit higher levels of feedback. Thus, boredom would more likely undermine perceived learning when a teacher fails to provide instant feedback.

*Hypothesis 4.* Perceived learning mediates the interactive effects of boredom and teachers’ feedback on learning satisfaction.

A summary of the hypothesized relationships between boredom, feedback, perceived learning, and learning satisfaction in the research model is presented in Figure 1.

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Insert Figures 1 about here  
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### **Methodology**

A survey was administered to undergraduate business students during regular class time in the period of April 2019 at a local university in Hong Kong, who had experienced the PRS in class and voluntarily agreed to be surveyed. The objective of the research was explained to the participants, and they were given instructions for filling out the questionnaires. The participants returned the completed questionnaires in class. The responses were kept confidential and used only for research purposes.

The survey instruments for measuring boredom, feedback, perceived learning, and learning satisfaction as well as the control variables were taken from the existing literature, with



the scales revised to fit the context of PRS use. Three academic staff members from the fields of management and education reviewed the relevancy of the questions and reworded two items in the questionnaire. They also commented on the appropriateness of the questions. The modified questionnaire was then reviewed by three student helpers from a university who were encouraged to comment on the measurements. Few minor changes were made on rephrasing the wordings of the questions. An oblique rotation of exploratory factor analysis (EFA) was used to assess the construct validity of the independent variables and test the expected correlation among them (Hair et al., 1998). The final survey was included in Appendix.

i. Boredom

A 3-item scale from Pekrun et al. (2005) was used to measure respondents' boredom with PRSs (1 = *strongly disagree*; 5 = *strongly agree*). The items were "I find PRSs fairly dull," "When I use PRSs, I can't wait for the class to end because I feel bored," and "I think about what else I might be doing rather than using PRSs." The Cronbach's alpha coefficient was .81.

ii. Teachers' Feedback

A 3-item scale from Jackson & Marsh (1996) was modified and used to measure how well teachers' provided feedback to students by using PRSs (1 = *strongly disagree*; 5 = *strongly agree*). The items were "I know how well I am doing with teachers' feedback by using PRSs," "Teachers' feedback by using PRSs really clarify to me that I am doing well," and "I am aware of how many questions I am performing well in by teachers' feedback." The Cronbach's alpha coefficient was .90.

iii. Perceived Learning

A 3-item scale from Hamari et al. (2016) was used to measure students' perceived learning (1 = *strongly disagree*; 5 = *strongly agree*). The items were "PRSs were useful for my learning,"

“PRSs helped me understand the material in class,” and “PRSs helped me to learn.” The Cronbach’s alpha coefficient was .94.

#### iv. Learning Satisfaction

A 3-item scale from Kettanurak et al. (2001) was used to measure students’ learning satisfaction (1 = *strongly disagree*; 5 = *strongly agree*). The items were “I found the PRSs valuable in class,” “I was very satisfied with the PRSs,” and “I had a very positive learning experience with PRSs.” The Cronbach’s alpha coefficient was .88.

#### v. Control Variables

The respondents’ gender, year of study, and number of years of experience using PRSs were used to control for the effects of the model. Dummy variables were used to represent gender (1 = *male*, 2 = *female*). Each respondent’s year of study was indicated by numerals corresponding to year 1, year 2, year 3, and year 4, respectively. The number of years of prior experience using PRSs experience was categorized into “one year,” “two years,” and “three years or above.”

The independent variable (boredom), moderator (teachers’ feedback), mediator (perceived learning), dependent variable (learning satisfaction), and control variables (gender, year of study, number of years of experience using PRSs) with coding are presented in Table 1.

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Insert Table 1 about here  
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## **Results and Discussion**

### **Descriptive Statistics**

A total of 172 out of 180 questionnaires were returned, with a usable response rate of 95.5%. Of the total, 48% of the participants were males, and the majority were Year 1 students. Majority of the

respondents had prior experience using PRSs in class. The means, standard deviations, and zero-order Pearson correlations of all the key variables are presented in Table 2.

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### Tests of Hypotheses

Hierarchical multiple regression was conducted to test the hypotheses using SPSS. Hypothesis 1 predicted that boredom is negatively associated with (a) perceived learning, and (b) learning satisfaction. After entering the control variables, gender, year of study, and PRSs experience, it was found that boredom was negatively related to perceived learning ( $\beta = -.19, p < .001$ ), and learning satisfaction ( $\beta = -.22, p < .001$ ), as shown in Table 3. Hypotheses 1a and 1b were supported.

Hypothesis 2 predicted that perceived learning mediates the negative relationship between boredom and learning satisfaction. As the results of Hypothesis 1 met the first two requirements for a mediation test, perceived learning was then entered to test its possible mediating effect on the relationship between boredom and learning satisfaction. Perceived learning was found to be significantly related to learning satisfaction ( $\beta = .57, p < .001$ ), while the coefficient of boredom was reduced in size but still significant (from  $\beta = -.22, p < .001$  to  $\beta = -.11, p < .01$ ), suggesting partial mediation. Hypothesis 2 was partially supported.

Hypotheses 3 predicted that the negative relationship between boredom and perceived learning is weaker when teachers provide high levels of feedback. The interactive effects of boredom and feedback on perceived learning ( $\beta = .10, p < .01$ ) were significant. The interactive effects are plotted in Figure 2. Hypothesis 3 was supported.

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Finally, Hypothesis 4 predicted that perceived learning mediates the interactive effects of boredom and teachers' feedback on learning satisfaction. The coefficients of the interactive term of boredom and feedback on perceived learning (from  $\beta = .10, p < .01$  to  $\beta = .04, p > .05$ ) were reduced after entering the mediator (i.e., perceived learning). These results suggested that perceived learning mediated the interaction effects for learning satisfaction ( $\beta = .55, p < .001$ ). Hypothesis 4 was supported.

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Insert Tables 3 about here  
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Few research studies in the management and education literature have discussed the negative impacts of PRSs on perceived learning and learning satisfaction. This study fills this research gap by examining the dark side of PRSs. Boredom from using PRSs is negatively related to students' perceived learning and learning satisfaction, but the mechanisms of its effect are less clear. The study provides evidence of the mediating mechanism of perceived learning in the relationship between boredom and students' learning satisfaction. Perceived learning is an important mechanism through which boredom from using PRSs affects students' learning satisfaction.

This study contributes to the literature in its examination of whether feedback moderates the negative effect of boredom on students' learning satisfaction in the context of using PRSs, and the extent to which receiving feedback from teachers mitigates the negative effect of boredom with PRSs. The negative effect of boredom with PRSs on perceived learning and learning satisfaction was weaker when teachers exhibited higher levels of feedback. This indicates that feedback from teachers

by using PRSs may help “neutralize” or lessen the negative effect of boredom on perceived learning and learning satisfaction.

Despite the fact that the repeated use of PRSs may generate the negative emotion of boredom, their use in the classroom might still be justified because teachers can use them as a means to give timely and meaningful feedback to students. If students receive such useful feedback from teachers, they are more likely to experience high levels of perceived learning and increased learning satisfaction, in spite of the boredom with PRSs that they may feel. One possible explanation for this “neutralization” of the negative feelings of boredom is that students’ main goals in lessons might be learning and the achievement of their own learning expectations. The perception that these are achieved might thus outweigh the feeling of boredom in terms of the effect on learning satisfaction.

### **Theoretical and Managerial Implications**

Several implications can be drawn from this study. First, perceived learning explains part of the mediating mechanism through which boredom with PRSs affects students’ perceived learning and learning satisfaction. Boredom is destructive to perceived learning and learning satisfaction as students lose their interest in learning. Consistent with the existing literature, the students’ negative emotions in learning decreased their learning performance and satisfaction (Sharp, Hemmings, Kay, Murphy, & Elliott, 2017). Students’ experiences of boredom with using PRSs may lower the effectiveness of their perceived learning, and lower their learning satisfaction.

Second, this study examined the moderating effects of feedback on the relationships between boredom, and perceived learning and learning satisfaction. Importantly, feedback from teachers by using PRSs plays a critical role in buffering the negative impact of boredom on learning satisfaction. Feedback helps students have a better understanding of the learning objectives and therefore regulates

students' expectations. Direct feedback from teachers to students facilitated by the use of PRSs can help improve perceived learning and learning satisfaction.

An important finding is that the use of PRSs affects the emotions of students, which in turn affects their learning performance. PRSs appear to be ineffective at improving student engagement in situations when their intensive use leads to increased feelings of boredom. However, boredom with the use of PRSs might not impair learning itself as long as teachers provide feedback. Thus, a way to minimize the effect of negative emotions arising from PRS use is to give timely feedback on students' academic performance. This nonetheless indicates that teachers should closely monitor students' emotions when PRSs are used, to allow them to make better choices that can improve learning satisfaction.

### **Limitations and Future Research**

This study has several limitations. First, the data were collected from a group of business students in a Hong Kong university. It is difficult to confirm whether our findings and theory can be generalized. Future research involving the use of PRSs in higher education can be done with different groups of students. Secondly, most participants were in their first year of undergraduate study. This group of students might have been skewed towards having a higher interest in the use of PRSs because of their level of study. It is not possible to draw definite conclusions about causation in a cross-sectional study. Future research should use longitudinal design to examine the use of PRSs and the students' learning performance throughout their academic studies. Thirdly, the mediating mechanism of the negative impact of emotions on learning performance might not be limited to boredom with PRSs and perceived learning. Future studies may include students' other negative emotions, such as anger, annoyance and frustration, to further examine the impact on perceived learning and learning satisfaction. Lastly, the study examined whether providing feedback by teachers

moderates the relationship of boredom, students' perceived learning and learning satisfaction. Future studies should examine other potential boundary conditions that influence on student's learning performance.

### **Conclusion**

To conclude, this study makes two main contributions to the existing research. First, this study expanded the teaching and learning literature by examining how boredom associated with using PRSs may affect perceived learning and learning satisfaction. The study directly responded to the research gap by examining the negative aspects of PRS use, given that majority of the PRS research works have focused on the positive effects of PRSs on students' learning performance.

This study contributed to the literature in a second way. Researchers have discussed the conditions created when using PRSs, such as their role in providing feedback to students; this explained the importance of examining the impact of PRSs on student learning performance. As feedback from teachers was essential to the learning process, it might affect whether students feel bored with using PRSs, and their learning satisfaction. This study thus examined the moderating effect of teachers' feedback among the relationships of boredom with PRSs, perceived learning, and learning satisfaction.

In sum, this study empirically explored the negative relationships between boredom, perceived learning, and learning satisfaction, and examined whether these relationships were weaker when teachers provided higher levels of feedback. The study underscored the importance of teachers' feedback in the learning process when using PRSs.

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**Table 1** Measures of Variables

<b>Variables</b>	<b>Source</b>	<b>Items</b>	<b>Coding</b>
<b>Independent Variable</b>			
Boredom (3-items scale)	Pekrun et al. (2005)	I find PRSs fairly dull.	BD1
		When I use PRSs, I can't wait for the class to end because I feel bored.	BD2
		I think about what else I might be doing rather than using PRSs.	BD3
<b>Moderator</b>			
Teachers' Feedback (3-items scale)	Jackson & Marsh (1996)	I know how well I am doing with teachers' feedback by using PRSs.	TF1
		Teachers' feedback by using PRSs really clarify to me that I am doing well.	TF2
		I am aware of how many questions I am performing well in by teachers' feedback.	TF3
<b>Mediator</b>			
Perceived Learning (3-items scale)	Hamari et al. (2016)	PRSs were useful for my learning.	PL1
		PRSs helped me understand the material in class.	PL2
		PRSs helped me to learn.	PL3
<b>Dependent Variable</b>			
Learning Satisfaction (3-items scale)	Kettanurak et al. (2001)	I found the PRSs valuable in class.	LS1
		I was very satisfied with the PRSs.	LS2
		I had a very positive learning experience with PRSs.	LS3
<b>Control Variables</b>			
Gender	--	Male/ Female	--
Year of study	--	Year 1, Year 2, year 3, and year 4,	--
Number of Years Experience using PRSs	--	One year, Two years, Three years or above	--

**Table 2***Means, Standard Deviations, Correlations, and Reliabilities of Measures<sup>a, b, c</sup>*

Variables	Mean	SD	1	2	3	4	5	6	7
1. Gender	1.48	.50	--						
2. Year of Study	1.28	.25	.01	--					
3. PRSs Experience	1.16	.29	.01	.01	--				
4. Boredom	2.93	.79	.03	.07	.07	<b>.81</b>			
5. Teachers' Feedback	4.42	.82	.08	-.07	-.07	.10	<b>.90</b>		
6. Perceived Learning	3.88	.52	.04	-.06	-.06	-.19**	.16*	<b>.94</b>	
7. Learning Satisfaction	4.45	.48	.12	.04	.03	-.22**	.10*	.64**	<b>.88</b>

<sup>a</sup>,  $n = 172$ <sup>b</sup> The correlation coefficients are significant at \* $p < .05$ , \*\* $p < .01$ .<sup>c</sup> Reliability coefficients appear along the diagonal.

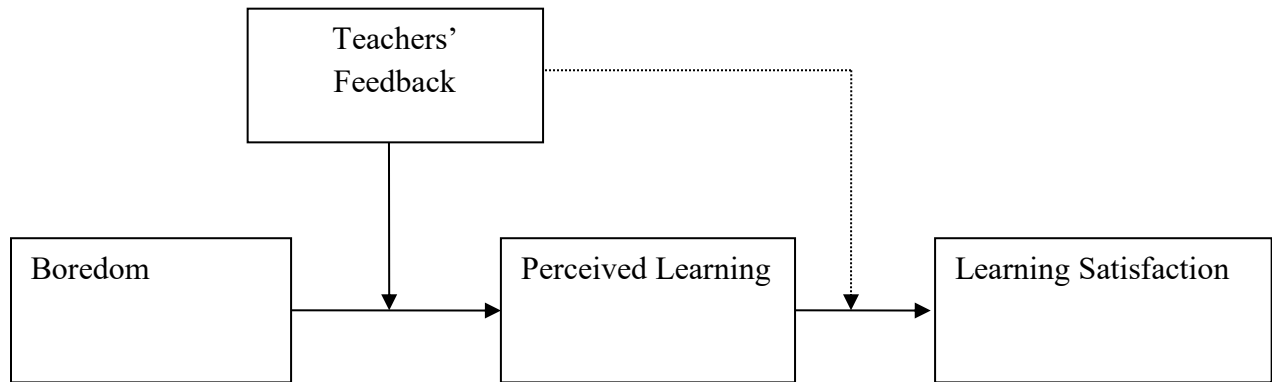


**Table 3**

*Regression Summary for the Mediating Role of Perceived Learning on the Interactive Effect of Boredom and Teachers' Feedback on Learning Satisfaction*

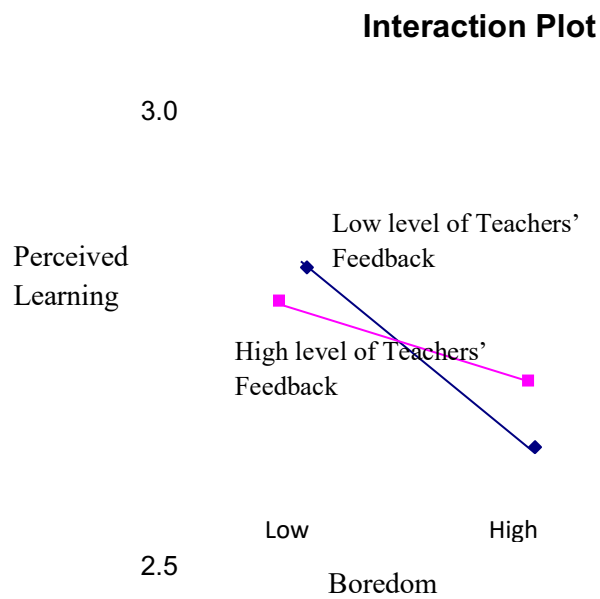
Variables	Perceived Learning				Learning Satisfaction					
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control Variables										
Gender	.13	.13	.09	.08	.16	.16	.13	.11	.07	.07
Year of Study	-.07	-.07	-.04	-.01	-.04	-.04	-.01	.02	.01	.02
PRSs Experience	-.07	-.05	-.05	-.08	-.01	-.01	-.01	-.03	.01	.02
Independent Variable										
Boredom		-.19***	-.21***	-.69***		-.22***	-.24***	-.17***	-.11**	-.54***
Moderator Variable										
Teachers' Feedback			.17**	.20**			.11	.15*		.03
Interactive Effect										
Boredom x Teachers' Feedback				.10**				.10**		.04
Mediator Variable										
Perceived Learning									.57***	.55***
<i>N</i>	172	172	172	172	172	172	172	172	172	172
Overall $R^2$	.02	.22	.28	.33	.02	.07	.08	.12	.43	.43
Change in $R^2$	.02	.20	.06	.05	.02	.05	.01	.04	.35	.31

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Figure 1***Research Framework*

**Figure 2**

*The Moderating Effects of Teachers' Feedback on the Link between Boredom and Perceived Learning*



**Appendix: Final Survey of the Study**

**Personal Response Systems (PRSs) Survey**

Dear Students

We are conducting a survey on student's learning attitudes with the PRSs, and would very much appreciate your giving us a few minutes to complete the questionnaire. Your response will be treated in the **strictest confidence**; and results will be analyzed on an aggregate basis only. It would be appreciated if you would return this questionnaire to us. Thank you for your participation.

Please tick the appropriate box [✓]			
1. Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female		
2. Year of Study	<input type="checkbox"/> Year 1 <input type="checkbox"/> Year 2 <input type="checkbox"/> Year 3 <input type="checkbox"/> Year 4	3. Experience of using PRSs	<input type="checkbox"/> One Year <input type="checkbox"/> Two Years <input type="checkbox"/> Three Years or Above

The following items are concerned with **your learning attitudes towards the PRSs**. To what extent do you agree or disagree with each of the following statements?

	Strongly Agree ☺	Agree	Neutral ☹	Disagree	Strongly Disagree ☹
1. I find PRSs fairly dull.	5	4	3	2	1
2. When I use PRSs, I can't wait for the class to end because I feel bored.	5	4	3	2	1
3. I think about what else I might be doing rather than using PRSs.	5	4	3	2	1
4. I know how well I am doing with teachers' feedback by using PRSs.	5	4	3	2	1
5. Teachers' feedback by using PRSs really clarify to me that I am doing well.	5	4	3	2	1
6. I am aware of how many questions I am performing well in by teachers' feedback.	5	4	3	2	1
7. PRSs were useful for my learning.	5	4	3	2	1
8. PRSs helped me understand the material in class.	5	4	3	2	1
9. PRSs helped me to learn.	5	4	3	2	1
10. I found the PRSs valuable in class.	5	4	3	2	1
11. I was very satisfied with the PRSs.	5	4	3	2	1
12. I had a very positive learning experience with PRSs.	5	4	3	2	1

**Thank You Very Much!**