

# Student Satisfaction with Online Learning in a Blended Course

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## Abstract

*As online and blended learning become widespread in higher education, educators and institutions have become interested in understanding the factors that influence students' satisfaction. In this study, we used Pekrun's control-value theory of achievement emotions to examine the influence of eight characteristics of online learning on students' emotions and satisfaction with their online learning experience as well as the influence of students' emotions on their satisfaction. Twenty-nine graduate students taking a required blended course completed a series of questionnaires on characteristics of online learning, their emotions concerning their online learning, and their satisfaction with the online learning experience. The results indicated that: (1) students' reports of high understandability and illustration in the course were related to greater enjoyment and lower levels of anger, anxiety, and boredom; (2) higher levels of course expectation, difficulty, fast pace, and lack of clarity were related to greater experiences of negative emotions such as anger, anxiety, and boredom; (3) higher levels of understandability, illustration, enthusiasm, and fostering attention led to increased student satisfaction; and (4) higher levels of enjoyment and lower levels of anger and boredom increased students' satisfaction with the online learning experience. Educational implications of these results for designing online learning environments and suggestions for future research are discussed.*

## 1. Introduction

Universities are increasingly turning to online or blended formats to teach required courses. Although offering university courses online provides a number of benefits both to students, who can take courses even from remote locations with the flexibility of studying according to their own schedules, and to universities, which can serve more students without having to physically house the courses, online education also brings its own set of challenges. In particular, online learning often results in significantly higher student attrition than face-to-face education<sup>[1]</sup>. Studies show that students enrolled in online courses are more likely to drop out than

students taught in traditional classes<sup>[2]</sup>, and further studies have shown this dropout rate is directly related to students' satisfaction with their online learning experience<sup>[3]</sup>. Although satisfaction is a key concern for most educational institutions and instructors, there are relatively few studies about what influences students' satisfaction in blended and online courses.

In addition, one factor confounding many studies of online education, especially in higher education, is that students usually self-select for online courses, so results describing online education may be confounded by the kinds of students who opt to study online, and may not be generalizable to the general population of students. In the present study, we examined students' experience of taking a blended course that was a requirement for an on-campus professional masters program, so there was no self-selection for online education.

In conceptualizing this problem, we have used Pekrun's<sup>[4]</sup> control-value theory of achievement emotions, in which the learning environment is an important antecedent of students' emotions, which then affect outcomes such as satisfaction. In this study, we used this model to examine the influence of eight key characteristics of online learning (understandability, illustration, enthusiasm, fostering attention, level of expectation, difficulty, pace, lack of clarity) on students' achievement emotions and satisfaction with their online learning experience within a blended course.

## 2. Satisfaction with online learning

As online learning is growing, institutions and instructors have become more interested in knowing what factors influence students' learning and satisfaction in online learning environments. This becomes more important for them when the results of studies show high dropout rates and lower retention in online courses than in face-to-face traditional courses<sup>[2]</sup>. A review of the literature in this field indicates that researchers have used different methods to define and assess students' satisfaction such as students' final grades, course completion rates students' attitudes toward online classes<sup>[5]</sup>, and students' self-reports of satisfaction<sup>[6]</sup>. They also have examined several factors that

influence students' satisfaction with online learning, which can be categorized into three themes: course quality, interaction/communication, and learners' characteristics.

Most of the research in this field has concentrated on the effects of course quality and opportunities for interpersonal interaction on students' satisfaction with online learning. In these studies, course quality included measures of course/instructional design, teaching materials, well-organized content, assessment strategies, clear course objective and expectations, alignment of instructional content and assessment, perceived ease of use, and workload <sup>[7]</sup> and <sup>[8]</sup>. Course design and course quality have a strong effect on satisfaction in online learning: students are more satisfied with well-designed online courses that have clear goals and are easy to navigate.

Another line of research focuses on the effect of human social interaction on students' satisfaction. Most concluded that students who have more opportunities to receive constructive and detailed feedback from, and interact with, instructors are more satisfied with their online learning experiences <sup>[9]</sup>. In addition, students who have more opportunities to communicate and have discussions with their classmates report greater satisfaction with their online learning experiences <sup>[9]</sup>. Other researchers compared the influence of different types of feedback. For example, Ice et al. <sup>[10]</sup> found that audio feedback is more effective than text-based feedback.

Some researchers who have examined the role of course design and interaction on student satisfaction have emphasized the crucial role of course design and the quality of learning materials in students' learning and satisfaction <sup>[8]</sup>.

Another line of research has investigated the role of student characteristics that contribute to their satisfaction with online learning. Kauffman <sup>[1]</sup> argues that online learning probably is not appropriate for every student and identifying characteristics of students that contribute to their success or failure in online learning environments are important in the design of online courses. Berenson, Boyles and Weaver <sup>[11]</sup> found that students with higher emotional intelligence are more successful in online learning while aggressive students and those with an external locus of control are less successful in online learning environments. Results of other studies indicated that self-efficacy, self-regulation, computer-related anxiety, need for affiliation, and learning orientations <sup>[1]</sup> and <sup>[6]</sup> play important roles in students' satisfaction and success in online learning environments.

### 3. Emotions and characteristics of online learning

Recently, researchers in education have focused on academic emotions as a factor that influence students' academic outcomes such as learning and

performance <sup>[12]</sup>. Most of these studies used Pekrun's control-value theory of achievement emotions <sup>[4]</sup> to assess the role of emotions in academic contexts. According to the theory, students experience various emotions in academic settings that can be grouped based on their valence (positive and negative), degree of activation (activating and deactivating), and object focus (activity-related and outcome-related). Students' emotions influence their learning and achievement through cognitive and motivational mechanisms. The control-value theory asserts that individual characteristics, task demands and learning environments influence students' perception of control and value appraisals, which, in turn, predict their emotions <sup>[4]</sup>.

Much of what is known about the role of achievement emotions in academic settings comes from research with students and teachers participating in traditional face-to-face classrooms. Researchers are just beginning to examine the role of students' emotions in online learning environments. Daniels and Stupnisky <sup>[13]</sup> reviewed nine studies that used control-value theory of achievement emotions as a theoretical framework to study emotions in online learning environments and concluded that the theory is applicable to online learning environments. The results of these studies indicate that positive emotions such as enjoyment have a positive effect while negative emotions such as boredom have negative effects on students' performance <sup>[14]</sup> and self-regulated learning behaviors <sup>[15]</sup>. On the other hand, other studies in online learning have demonstrated that the nature of online courses forces students to regulate and manage their time, efforts, and motivation to be successful and satisfied. Therefore, in order to understand the role of emotions in students' self-regulation, learning and performance, it is important to identify the antecedents of these emotions in order to be able to design effective online learning environments that promote positive emotional experiences, which in turn will increase students' learning and satisfaction.

According to Pekrun's <sup>[4]</sup> control-value theory, learning environment is one of the important antecedents of students' emotions. He believes that (1) cognitive quality and task demands, (2) value induction and the motivational quality of instruction, (3) autonomy support, (4) achievement goal structures and achievement expectations, and (5) feedback and consequences of achievement are the key aspects of the learning environment that influence students' emotions both directly and through control and value appraisals.

Goetz et al. <sup>[16]</sup> used these factors to define eight characteristics of teaching (understandability, illustration, level of expectation, difficulty, clarity, pace, enthusiasm, and fostering attention) and examine the influence of these characteristics on high school students' emotions in face-to-face

traditional learning contexts. According to Goetz et al. [16] understandability, clarity, difficulty, and pace represent cognitive quality and task demands; enthusiasm and illustration represent value induction; expectations represents goal structures and achievement expectations, and fostering attentions is the overall teaching quality. Goetz et al. [16], using multilevel factor analysis, described these eight teaching characteristics into two latent factors: “supportive presentation style” which consist of understandability, illustration, enthusiasm, and fostering attention and “excessive lesson demands” which consist of lack of clarity, difficulty, pace, and level of expectation. They found that the “supportive presentation style” factor is positively associated to enjoyment and pride and negatively to anger, helplessness and boredom. In addition, the “excessive lesson demands” factor was negatively associated to enjoyment and pride and positively to anxiety, anger, helplessness, and boredom.

In the present research, we adapted these characteristics as features of the online learning component of a blended course and assessed the influence of these features on students’ emotions and their satisfaction with the online learning experience. We did this by asking three research questions:

1) What features of the online course (understandability, illustration, level of expectation, difficulty, clarity, pace, enthusiasm, and fostering attention) most affected students’ academic emotions (enjoyment, anger, anxiety, and boredom)?

2) What features of the online course (understandability, illustration, level of expectation, difficulty, lack of clarity, pace, enthusiasm, and fostering attention) were most predictive of student satisfaction with the online component of the course?

3) Which students’ emotions (enjoyment, anger, anxiety, and boredom) were most predictive of student satisfaction with the online course?

## 4. Method

The study participants were drawn from 60 graduate students enrolled in a blended course at a university in Canada. Of the 53 students who agreed to participate in the study, 29 students completed the all surveys and are included in the analyses. The participants were composed of 27 female and 2 male students who ranged from 22 to 41 years of age. Of the participants, 18 students had no previous experience in online learning, 3 had experience in one other online course, and 8 students had experience in two or more online courses.

### 4.1. Measures

We adapted a series of questionnaires from published research to assess online characteristics,

achievement emotions and students’ satisfaction with their online learning experience. Students were provided a link to complete the questionnaires, using LimeSurvey software, at middle and end of the semester. To prevent the influence of end semester emotions, their emotions were measured at the middle of the semester. However, their satisfaction and perception of online features were measured at the end of semester.

### 4.2. Achievement emotions

Four subscales were adapted from the Achievement Emotions Questionnaire developed by Pekrun, Goetz, and Frenzel [17] to measure students’ emotions. A four-item enjoyment subscale, a three-item boredom subscale, a four-item anxiety subscale, and a four-item anger subscale assessed students’ learning-related emotions. Students rate their emotions in a seven-point Likert scale from *Strongly disagree* (1) to *Strongly agree* (7).

### 4.3. Characteristics of online learning

Students’ perceptions of eight online learning characteristics were measured with modified version of Goetz et al.’s [16] scale. Each feature was measured by a single item. The items consist of (1) understandability (understandability of the vocabulary used in the online course), (2) illustration (the amount of illustration that used in online modules to explain the material), (3) level of expectation (online modules’ expectations from students), (4) difficulty (the difficulty of the online materials), (5) lack of clarity (unclear instructions), (6) pace (the pace of lessons), (7) enthusiasm (presenting the material with enthusiasm), and (8) fostering attention (holding students’ attention). The items were scored on a 7-point Likert scale (*Strongly disagree* = 1 and *Strongly agree* = 7).

### 4.4. Satisfaction

Artino’s [18] three-item scale was adapted to measure students’ satisfaction with online learning. Items were answered on a 7-point Likert-type scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Higher scores indicated students are more satisfied with the online learning.

## 5. Results

A series of correlations was calculated to examine the relationships of characteristics of online learning and students’ emotions as well as their satisfaction with the online learning experience.

The data analyses to address the first research question indicated that understandability and

illustration were significantly and positively related to enjoyment ( $r = .377, p = .048$ ;  $r = .504, p = .006$  respectively) and negatively related to anger ( $r = -.611, p = .001$ ;  $r = -.734, p < .001$  respectively), anxiety ( $r = -.505, p = .006$ ;  $r = -.510, p = .006$  respectively), and boredom ( $r = -.503, p = .006$ ;  $r = -.704, p < .001$ , respectively). In addition, level of expectation, difficulty, lack of clarity, and pace were significantly and positively related to anger ( $r = .663, p < .001$ ;  $r = .513, p = .005$ ;  $r = .507, p = .006$ ;  $r = .587, p < .001$ , respectively), anxiety ( $r = .700, p < .001$ ;  $r = .686, p < .001$ ;  $r = .527, p = .004$ ;  $r = .745, p < .001$ , respectively), and boredom ( $r = .523, p = .004$ ;  $r = .473, p = .011$ ;  $r = .495, p = .007$ ;  $r = .424, p = .024$ , respectively). Enthusiasm also was significantly and negatively related to anger and anxiety ( $r = -.486, p = .009$ ;  $r = -.426, p = .024$ , respectively). However, fostering attention had no significant effect on academic emotions.

Of the relationships between characteristics of online learning and students' satisfaction with the online learning experience, understandability ( $r = .498, p = .007$ ), illustration ( $r = .730, p < .001$ ), enthusiasm ( $r = .517, p = .005$ ) and fostering attentions ( $r = .696, p < .001$ ) were significantly and positively related to students' satisfaction. However level of expectation was significantly and negatively related to students' perceived satisfaction ( $r = -.486, p = .009$ ). Although difficulty, lack of clarity, and pace were negatively related to satisfaction these relationships were not significant.

The results that address the third research question indicated that enjoyment was positively and significantly related to satisfaction ( $r = .555, p = .002$ ). In addition, anger and boredom were negatively and significantly related to satisfaction ( $r = -.421, p = .026$ ;  $r = -.567, p = .002$ , respectively). However, anxiety did not have a significant relationship to satisfaction.

## 6. Discussion

All the characteristics of online learning (except *fostering attention*) were related to the negative emotions of anger, anxiety, and boredom — the emotions that are the most frequent in online learning. Researchers in this field have suggested that factors in online learning environments such as technical problems, sense of isolation, and lack of social support may affect students' experience of negative emotions such as anxiety, anger, and boredom. Therefore, in designing online courses instructors and designers should consider those factors that decrease these negative emotions, which in turn, will lead to an increase in students' learning and achievement. Our findings indicate that students experience fewer negative emotions (anxiety, boredom and anger) when a) the vocabularies of the online courses are more understandable, b) the online

modules used more illustrations to explain the materials c) the online modules' expectations from students are not too high d) the online materials are not more difficult e) the pace of the course is not too fast f) online instructions are clear; and g) the material is presented with enthusiasm. Aligned with these results, Sun and colleagues<sup>[8]</sup> reported that a well designed delivery process for online courses helped to decrease students' frustration.

Two characteristics of online learning were related to positive emotions: greater understandability and illustration led to greater enjoyment. However, lack of clarity, difficulty, pace, and level of expectation — parts of the factor that Goetz et al.<sup>[16]</sup> labeled as "excessive lesson demands" — were not significantly related to enjoyment for these students. Furthermore, fostering attention had no significant relationships with any of the emotions. To our knowledge this study represents the first research that investigates the relationships of these characteristics of students' emotions in online learning environments. These findings parallel Goetz et al.'s research with face-to-face traditional settings, in that the factor "excessive lesson demands" was negatively related to enjoyment.

Of the relationships of the characteristics of online learning and satisfaction, the results showed that higher levels of understandability, illustration, enthusiasm, and fostering attention led to increased students' satisfaction with the online learning experience. However high levels of learning expectation led to decreased course satisfaction. These results confirm previous studies that found course quality is the most important factor influencing students' satisfaction with online learning. For example, Song et al.<sup>[19]</sup> reported that understandability of course objectives and clarity of course expectations have a strong impact on satisfaction. Surprisingly, the difficulty, pace, and lack of clarity were not significantly related to these students' satisfaction. A possible reason that course difficulty did not affect satisfaction for these students was that they were graduate students who expected a higher level of difficulty for the course.

To answer our third research question, we found that students who experienced more enjoyment and less anger and boredom during the learning online were more satisfied with the online learning experience. Much of the research in online learning and students' emotions has focused on computer-related anxiety as a factor that hampers students' satisfaction level. There are several studies that have investigated the influence of discrete emotions on students' satisfaction. Our results concerning the relationship between academic emotions and course satisfaction are aligned with the results of Arinto and Stephens<sup>[20]</sup> in which students who experienced less boredom and frustration were more satisfied with their online course, used more self-regulating

learning strategies, and had better grades than their peers.

## 7. Limitation and future research

There are several limitations related to this study that should be considered in interpreting the results. As a case study with a relatively small sample size generalization of these results must be limited. Furthermore, since these results are from a blended class, in which students met face-to-face once a week as well as working online, these results might not be generalizable to a fully online learning environment. Finally, since this study focused on graduate students who might expect greater course difficulty, some results might not generalize to undergraduates. Therefore, further research is needed to determine whether these results will generalize to students in other blended courses, to fully online courses and to undergraduate students in other courses.

## 8. Conclusion and Implications

In this study, Pekrun's control-value theory of achievement emotions<sup>[4]</sup> was used to investigate the relationships of characteristics of online learning and students' emotions and satisfaction with online learning as well as the relationships of students' emotions and satisfaction. Consistent with previous studies, we found that well-designed components of online courses can decrease students' negative emotions such as anger, boredom, and anxiety. Importantly, we also found that these academic emotions are directly related to their satisfaction with the online course.

Because this is the first study that has investigated the relationships of characteristics of online learning, academic emotions, and course satisfaction, it makes a unique contribution to the literature on online learning. Furthermore, these results are important because they come from a sample that did not self-select to study online — this online course was a requirement for their program. From these results, online course designers and instructors can gain insight as to how to design online courses more effectively by including design characteristics that decrease negative and increase positive emotions which then will lead to greater student satisfaction.

## 9. References

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