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## Exploring Adult Risk Propensity and Academic Risk-Taking within the Online Learning Environment

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Keywords: academic risk-taking, online learning, risk propensity, blended learning

**Abstract:** This paper presents a portion of the findings from a larger study of factors related to academic risk-taking behaviors among a group of preservice teachers in the online component of a blended-format course. We describe our study findings and implications specific for the variable of risk propensity and its relationship with academic risk-taking behavior. A synthesis of our findings with the works of other researchers provides the groundwork for exploring factors that instructors can consider in designing learning environments that support academic risk-taking, particularly in online environments.

### Introduction

Within higher education, the social nature of learning may no longer equate to in-person interactions. Technology provides various interaction options and changes the learning environment (Harasim, Hiltz, Teles, & Turoff, 1995). However, many adult learners are challenged to navigate the social landscape in online environments and may perceive that online learning poses risks. Academic risk-taking involves students assessing the known and unknown outcomes of a learning activity and making choices about their involvement based on possible benefits and consequences of participation (Robinson, 2011). If instructors of online or blended-format courses require participants to share in public forums using online interactions (e.g., threaded discussions, chat rooms, and posting of work) to successfully pass courses, then adults with an aversion to academic risk-taking can be at a distinct disadvantage in online courses. The high attrition rate in online courses (Diaz, 2002) may be a reflection of risk aversion. The challenge for instructors incorporating online learning in their courses for adults, such as in the area of teacher education, is to understand the nature of academic risk-taking associated with online learning environments. In this paper we present a portion of the findings from a larger study of factors related to academic risk taking behaviors among a group of preservice teachers in the online component of a blended-format course.

### Conceptual Framework

While researchers (e.g., Settersten & Lovegreen, 1998) have identified many individual level traits involved in adult learning, the phenomenon of academic risk taking and risk behaviors seldom appears in the educational literature. As a result, we have created a conceptual framework based on the psychological model by Rohrmann (2004), in which he suggested different individual level traits might modify risk decisions in different situations. We combined

this with the model proposed by Yates and Stone (1992), in which they suggested that a single construct would underlie most risk-taking discussions. The overlay of these ideas provided the conceptual framework for this study. In our framework, adult learners enter into an online environment with a risk propensity (their willingness to take risks). Within the instructional environment adults experience risk perceptions (their concept of possible risk loss/benefit) and risk appraisal (their value of the loss/benefit). The interaction of these three risk variables determines the choices adults make about their academic risk-taking behaviors.

### Research Design

The overarching research question for this study was “*What is the nature of academic risk-taking behavior as portrayed by the concepts of risk perception, risk propensity, and risk appraisal among pre-service teachers in the online component of a blended course?*” We used a mixed-methods approach with concurrent triangulation for collecting data, which offered comprehensive investigation with equal priority given to both qualitative and quantitative data collection. This concurrent approach allowed us to converge both types of data, thereby corroborating findings within a single study (Creswell & Plano Clark, 2007). The study took place in the online portion of a blended course for 110 preservice teachers of a university cohort enrolled in a required special education course. Data were collected using researcher-designed instruments to measure quantitative and qualitative aspects of the study’s three variables (risk propensity, risk perception, risk appraisal) and a rubric to assess academic risk-taking behaviors of participants in the online component of the course. Quantitative data was collected for all 110 students, and qualitative data was collected on a subset of 18 students. Quantitative analysis included descriptive statistics and zero-order correlations among the risk variables. Qualitative analysis included thematic coding based on concepts in the conceptual framework and open coding. The two data sets underwent integration using a comparison matrix. Risk propensity, defined as the extent to which an individual is likely to take chances in learning even when the outcomes are uncertain, was measured quantitatively with a 12-item survey. Scores could range from 12 (lowest risk propensity) to 48 (highest risk propensity). Internal reliability (Cronbach’s  $\alpha$ ) for the 12 items was .80. We used the risk propensity scores in selecting individuals to participate in a face-to-face interview. Participants in the low risk propensity group had scores one *SD* or more below the mean; participants in the high risk propensity group had scores one *SD* or more above the mean; and participants in the medium risk propensity group had scores within one *SD* of the mean. Six individuals were randomly selected from each group to participate in the interview designed to assess their perceptions of supports and risks in the online component of the course and strategies they used to engage in the asynchronous online discussions. Qualitative data for risk propensity comprised responses to pertinent interview questions and written responses to four short-answer, open-ended items in the survey.

To assess the outcome variable, academic risk-taking behavior, we used a rubric to quantify indicators of students’ risk taking in their contributions to online discussions during three, 2-week periods in the semester for the 18 interview participants. Indicators included evidence of innovations, acknowledgement of uncertainty, disagreement or divergence, and making choices. Total score could range from 0-45. Intra-rater reliability (ICC) for using the rubric was maintained between .80 and .90. We also qualitatively assessed academic risk-taking

using thematic analysis of individual contributions to the online discussions during the posting periods.

### Findings and Conclusions

Among the 110 participants, the range in risk propensity scores was 23 to 39 and the mean was 30.32 ( $SD = 3.27$ ), indicating that overall participants had moderate levels of risk propensity. Among the 18 students who participated in the interviews, the mean score for those in the low risk propensity group was 26.26 ( $n = 6$ ,  $SD = 1.15$ ); the mean was 29.96 ( $n = 6$ ,  $SD = 1.38$ ) for those in medium group; and 36.41 ( $n = 6$ ,  $SD = 1.7$ ) for those in the high risk propensity group. We then analyzed the qualitative data for individuals in each group. Exploring the data involved assessing the extent to which the quantitative and qualitative data for risk propensity converged, and clear patterns emerged.

Most participants with low risk propensity made qualitative statements indicating apprehension, worry, uneasiness, or similar types of feelings regarding their expectations for learning environments in general, and online environments specifically. For example, when asked if they felt they would need to agree with the views of their professor to be successful in a hypothetical course, participants in this group provided answers such as “I feel teachers like it when you agree with them,” “In some way, yes in order to succeed, depends on the professor though,” and “If you disagree with a professor they sometimes put it against you, some do not like to be proved wrong.” These individuals saw professors in positions of power who might not grade fairly nor appreciate students who challenge them. These statements were indicative of individuals who have a low propensity to take risks in a learning environment.

When asked how their use of creativity or exercising an unusual approach in completing assignments would influence their grade in a class, participants with low risk propensity provided answers such as “It's a hit or miss. The teacher might like it or they might not, which can affect the grades,” “For some professors they appreciate it while others don't. It's a risk,” and “I believe that any creative energy brought to an assignment should be credited as positive, but that doesn't always happen.” These statements indicated that participants with low risk propensity felt that deviating from the prescribed path in an instructional setting might have negative consequences and was risky. These beliefs were not limited to interactions with instructors. When asked what their peers would think about working with them if their opinions differed, participants with low risk propensity stated, “They will look down on me,” “They might not be willing to listen to your ideas or incorporate them,” and “They might look down on your work.” Again, the answers to the qualitative questions showed the concern and apprehension individuals with low risk propensity had in these types of situations.

We also found convergence between the quantitative and qualitative data for individuals with high risk propensity. Their answers in the open-ended questions demonstrated poise, comfort, assurance, self-confidence, or similar types of feelings regarding their expectations in face-to-face and online learning environments. When asked if they felt they would need to agree with the views of their professor to be successful, students in this group provided answers such as, “I find that arguing some personal views with professors is a good idea,” “No, you don't learn through agreeing,” and “No because difference of opinions make better discussions.” They did not perceive that disagreeing with a professor was risky and believed their professors would support and encourage differences of opinion to foster learning. These students were also comfortable in taking chances in their learning with peers. When asked what their peers would think about

working with them if their opinions differed the participants with high risk propensity scores commented, “I think that there would be critical questioning, yet accepting that our views are different,” “They will respect my ideas and thoughts and share their opinions and theories on the topic,” and “I believe they would accept it openly.” These qualitative responses reflected the confidence and assurance participants with high risk-propensity had in these learning situations. When asked how their use of creativity or an unusual approach in completing assignments would influence their grade in a class, participants with high risk propensity offered responses such as “Positively—because it is new and creative and took a lot of thought and time,” “Thinking creatively about course materials allows for greater and deeper grasp of course content, thus a better grade,” and “It shows effort and interest and I have found it usually worked for my benefit.” These statements indicated that participants with high risk propensity felt that deviating from the prescribed path in an instructional setting was a positive approach and would benefit them in obtaining a good grade or advancing their learning.

Convergence of the quantitative and qualitative data for individuals in the medium risk propensity group was not as clear-cut as for the low and high groups. Their qualitative responses reflected a wide range in perceptions pertaining to risk propensity in face-to-face and online contexts. Some participants responded to one question in a way that reflected lower propensity and to another question in a way that reflected higher propensity, and some participants responded to a question in ways that simultaneously reflected both lower and higher propensity. In analyzing the qualitative data we were challenged to determine if participants were unsure how they felt about taking risks, or if higher and lower responses to a question were actually an indication that their answers could be “averaged” out to reflect a medium-level response. The scoring rubric did not address these types of mixed responses.

Based on the findings, we concluded that for participants with low risk propensity and with high risk propensity the quantitative and qualitative appeared to convey the same perceptions and risk propensity characteristics. The cohesiveness of the data sets for participants in these two groups suggest that researchers can develop valid and reliable means of identifying individuals with clearly low and clearly high risk propensity specific for online learning contexts. More research is needed, however, to clarify the nature of risk propensity among individuals that fall between these two extremes.

With regard to the outcome variable of academic risk-taking behavior, the mean score for the 18 interview participants was 26.72. The large *SD* of 7.24 indicated that students exhibited a wide range in risk taking behaviors in the online discussions. We used the method of  $\pm 1$  *SD* from the mean for assigning participants to low, medium, and high risk-taking behavior groups. The mean risk-taking score for those in the low risk-taking group was 15.50 ( $n = 2$ ,  $SD = .70$ ); the mean was 25.17 ( $n = 12$ ,  $SD = 3.90$ ) for those in medium risk-taking group; and 37.00 ( $n = 4$ ,  $SD = 2.58$ ) for those in the high risk-taking group.

Our qualitative analysis of the online postings indicated patterns in academic risk-taking behaviors among members of each group. Some individuals with low risk-taking scores were recurrent posters. They were online frequently, reading, asking questions, and clarifying information. They did not contribute creativity or content to the group process, but they frequently posted online. Conversely, some high risk-takers did not post very often; however, when they did contribute it was often lengthy and significant. Their posts were often disagreeing, challenging, innovative, or made choices directed at the group.

Although some individuals scored consistently lower or consistently higher in all the risk indicators, not every participant showed evidence in every indicator. Some individuals, time after time, scored higher in one or two indicator areas (Making Choices and Disagreement or Divergence), and yet never scored in another indicator area (Evidence of Innovation).

Occasionally some participants showed evidence of higher risk-taking in early posts, followed by little or no evidence of risk-taking in their posts towards the end of the semester. It was difficult to tell if these changes in patterns during a semester were indicative of feedback they received from the group or if other outside factors, such as getting busy with other classes, influenced the participants' time or willingness to participate.

The qualitative data also revealed the manner in which participants delivered their posts. Some individuals demonstrated their academic risk-taking in a positive or upbeat manner: "Hey guys, great job so far, but maybe we should consider the fact that not everyone supports mainstreaming in the same way... so what type of alternative arrangements could we offer?" While other individuals took a more antagonistic approach to risk-taking: "Well I don't know why you think [the student] needs that accommodation ... but if you think it's a good idea then have at it."

With regard to the relationship between risk propensity and academic risk-taking behaviors in the online component of the course, the quantitative scores for the two variables had a high positive correlation ( $r = .87, n = 18$ ), indicating that the higher an individual's risk propensity the more he or she exhibited risk-taking behaviors. This outcome was consistent with the conceptual framework, in which risk propensity, reflecting an individual's willingness to enter into risky situations pertaining to learning, supports academic risk-taking behavior. We explored how academic risk-taking behavior scores compared among the three risk propensity groups. The mean score for members of the low risk propensity group was 20.00 ( $SD = 3.80, n = 6$ ); the mean was 24.67 for the medium group ( $SD = 1.63, n = 6$ ); and it was 26.72 ( $SD = 3.08, n = 6$ ) for the high risk propensity group. A 1-way ANOVA indicated that all three means were significantly different from each other ( $F = 42.84, p = .000$ ). These findings confirmed the strong positive relationship between risk propensity and risk taking behaviors in the online component of the course.

### Implications

If new learning challenges adult learners' existing meanings, values, and skills it may create a disconnect between new learning and past learning (Mackeracher, 2004). Most adult learners engage in this type of activity despite some anxiety or a sense of risk (Baskin, 2001). High levels of anxiety may result in adults deciding that learning is too risky and aborting the process (Perry, 2008). The outcomes of our study suggest that academic risk-taking can be portrayed by a set of risk factors even among individuals in a demographically homogeneous group of adult learners. In particular, risk propensity had a high positive correlation with indicators of academic risk-taking in adults' contributions to online discussions. Based on the data, we cannot address the extent to which risk propensity may predict risk-taking behavior in academic contexts; only that it is a clear indicator of individuals' academic risk-taking behavior in the online component of a blended-format course.

Some researchers in non-academic contexts have examined if risk behavior was merely an outcome of individual assessments of payoffs and probabilities. For example, Deck, Lee, Reyes, and Rosen (2008) examined 75 faculty and students at a College of Business who

volunteered to participate in a series of tasks with variable payoffs. They found that risk behaviors were related to a wide variety of factors, including individual perceptions of the risk involved in any given situation, and not just assessments of payoffs and probabilities. Though the authors did not measure risk propensity specifically, this individual personality state could explain the variability in risk-taking levels displayed by participants within their study. Models that examine risk behaviors based purely on probabilities of outcomes cannot capture the subtlety of the context in which risk decisions occur nor account for individual differences in perceptions or prior experiences.

In summary, the variable of risk propensity appears to be a key component in the academic risk-taking behaviors of individuals in online contexts. This study demonstrated that adult learners with similar demographic backgrounds can display a wide range of behaviors related to risk-taking. We focused on measuring individual perceptions related to the three risk variables and their relationships to risk-taking behaviors; we did not assess external factors that may have influenced students' behaviors. A variety of additional factors discussed in other studies might explain our outcomes. A synthesis of our findings with the works of other researchers provides the groundwork for exploring factors to consider in designing blended-format courses that support academic risk-taking, particularly in the online environment. These factors include, but are not limited to, the risk tolerance of the instructor, communities of practice in online learning environments, risk levels of other students, course feedback and grading methods, type of social media or platforms used for learning, and length of course. Insights from this endeavor point to the need for continued development of ways to assess academic risk-taking. A better understanding of this concept will enable instructors to design blended and online experiences that support risk taking, and new opportunities for learning risk taking can afford, for all students.

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