

Final Report

Faculty Research Grant

This research investigated the following areas of technology that may impact the student's ability to persist in a distance education course: student's network connection mode, the student's technical expertise (ability to send/receive email, send attachments, and download files), email response time and their chosen mode of communication. Students surveyed included students enrolled in a distance education course at Arkansas Tech University in Russellville, Arkansas, during the spring semester of 2006. One thousand eighty-seven students were surveyed. Five hundred seventy-three voluntarily participated. Four hundred fifty-two or 78% of the surveys were completed according to the instructions provided. Of the four hundred fifty-two participants who correctly completed the survey, forty-six, or 10.2%, failed to complete the course.

A twenty-eight item survey questionnaire on technological issues that could impact the student's ability to persist in a distance education course was created after completion of a review of the literature, relevant case studies, and personal investigation. A four point Likert scale was utilized because it forced the participant to express an opinion rather than 'no opinion'. The specific information collected was: (a) demographic information (age, sex, classification, and residence of on/off campus); (b) network connection (dial-up, cable or DSL, other, don't know; (c) self-perceived technical skills of enrolling students (ability to send/receive email, send attachments, and download files); (d) email response time (within 1-6 hours, within 7-12 hours, within 13-24 hours, and longer than 24 hours); (e) the chosen communication mode (office hours, email, telephone, discussion board, or do not interact); and (f) student persistence data

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(combining whether the student completed the course and the student's final grade. After careful analysis of the data gathered from a review of the literature, relevant case studies, and personal investigation, four research questions were formulated. The statistical testing included Chi-square and a One-Way ANOVA to determine if technological issues, the student's network connection mode, the student's technical expertise (ability to send/receive email, send attachments, and download files), email response time, and the chosen communication mode impacted the student's ability to persist in the online format.

Regarding research question one, "Does the student's network connection method impact the student's ability to persist," the research indicated that there was a statistically significant impact of the student's ability to persist based on the network connection mode used ($p < .000$). Student's who connected by utilizing a cable modem were more successful in their ability to persist. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted.

Regarding research question two, "Does the student's level of technical expertise impact the student's ability to persist in an online format," the research results suggested no statistically significant impact of the student's technical expertise on the student's ability to persist ($p < .211$). Therefore, the null hypothesis was accepted and the alternative hypothesis was rejected.

Regarding research question three, "Does the length of time required for an email response from the professor to a student's email impact student persistence," the research indicated that there was a statistically significant difference in the student's ability to persist and the length of time required for an email response

($p < .000$). The research indicated that more students were able to persist if they received an email response quickly. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted.

Regarding research question four, "Does the technology utilized to facilitate communication between the instructor and the student impact the student's ability to persist," the research indicated that there was no statistically significant difference between the student's ability to persist and the communication method utilized and the student's ability to persist ($p < .496$). Therefore, the null hypothesis was accepted and the alternative hypothesis was rejected.

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Conclusions

Historically, distance education has been known as 'nontraditional' education. However, it is likely to become the norm during the first few decades of the 21st century (Fulcher & Lock, 1999, p. 328) because of the advent of the personal computer. Distance education has been heralded as the greatest change to contemporary higher education (Lanier, 2006) and according to Gerrett (2004), the future growth of higher education will undoubtedly be in the area of distance or off-site learning because the distance learning revolution promises to deliver greater flexibility in learning styles and gives educators the opportunity to tailor education experiences to individuals (Gerrett, 2004).

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Universities may be entering the distance education arena without adequately investigating the technology currently available with which to deliver the course and the approaches used to facilitate communication between the instructor and the student. These same universities may be relying upon distance education to stop declining enrollment. However, relying on distance education to stop declining enrollment may

create a situation in which the online student may fail to persist because of the technological issues involved. While enrollment in distance education courses may even increase in the future, students' may fail to persist because the student's may not possess a level of technical expertise (ability to send/receive email, send attachments, and download files) necessary to persist in the online format.

Recommendations

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The following recommendations have been developed as a result of this study:

1. The research indicated that the student's network connection mode impacted the student's ability to persist. Therefore, it is recommended that students have access to a cable or DSL connection because the faster connections seem to impact the student's ability to persist.

2. While the research did not indicate that the student's technical expertise impacted the student's ability to persist, it is recommended that all students be pre-tested before being permitted to enroll in an online course. Although the research did not indicate that the student's level of technical expertise (ability to send/receive email, send attachments, and download files) impacted the student's ability to persist, the student will more likely be able to persist if the student does not have to master the required technology as well as the course content.

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3. Email response time impacted the student's ability to persist. Email that was sent by the student to the instructor should be responded to in a timely manner, i.e. less than six hours. Students who had to wait longer than six

hours for a response to their question were more likely to fail to persist.

While faculty members experience many demands for their time, these demands should not inhibit the faculty member from responding to email from students in a timely manner.

4. The primary method utilized to facilitate communication was email. While the communication method did not seem to impact the student's ability to persist; it is thought, again, that students should be competent in their ability to send, receive, attach, and download files. Students should be competent in these basic email functions.

References

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