

Exploring the Effectiveness of Adaptive Technologies to Improve the Quality of Online Library and Information Science Courses

The poster is titled "Exploring the Effectiveness of Adaptive Technologies to Improve the Quality of Online Library and Information Science Courses" and is authored by Angela P. Murillo, School of Informatics and Computing, Indiana University-Indianapolis (IUPUI). The poster is divided into several sections:

- Overview & Project Timeline:** Includes a link to "View Video Presentation Here" and an "Overview" section with "Preliminary results of a two-year project".
- Project Design:** Contains "Research Methods" (Course Design updates, TAM-based survey, open-ended questions) and "Research Questions" (When incorporating adaptive technologies into online courses, what is the perceived usefulness and ease of use for students interacting with these technologies?).
- Course Design Updates:**
 - IU eText:**
 - Online textbook provided by IU
 - Significantly decrease the cost of textbooks
 - Highlight, tag, annotate
 - Embeds directly into the Learning Management System
 - Access all materials in one environment
 - Provides analytics and note sharing with students
 - Quick Checks:**
 - Ungraded assessments, short quizzes
 - Incorporated as part of lecture materials
 - Prepare students for future formal assessments
 - Provides immediate feedback and students can repeat
 - Provides students unlimited attempts
 - Quality Matters:**
 - Research and standards-based online education and course design quality assurance system
- Preliminary Results:**
 - Qualitative Results IU eText:** Generally, students found eText easy to use and appreciated that they could highlight, take notes, and search for keywords. Students appreciated the cost savings and the time savings for not having to hunt for cheap textbooks online. Students stated that although they prefer to read a physical textbook, the cost savings.
 - Conclusion:** Student feedback on eText and Quick Checks is mixed. While the qualitative results show that students appreciate certain aspects of both adaptive technologies, the TAM survey results indicate that students have technical difficulties with both technologies, suggesting that further mitigation needs to occur. A future plan is to ensure that learning materials for both technologies are readily available to students.
 - Next Steps:** Quality Matters implementation and data gathering.

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PRESENTED AT:



OVERVIEW & PROJECT TIMELINE

View Video Presentation Here

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Overview

- Preliminary results of a two-year project
- Examining the impact of the incorporation of adaptive technologies and Quality Matters® Rubric standards
- Online asynchronous LIS course

Project Timeline

- **Two-Year Project Timeline:**
 - Fall 2019: No changes to course (baseline)
 - Spring 2020: Incorporation of adaptive technologies (IU eText and Quick Checks)
 - Fall 2020: Incorporation of Quality Matters course design
 - Spring 2021: Completion of data analysis and dissemination of results

PROJECT DESIGN

Research Methods

- Course Design updates
- Technology Acceptance Model (TAM) based survey to measure ease-of-use and usefulness
- Open-ended qualitative questions (originally intended to be a focus group, but changed due to Covid-19)

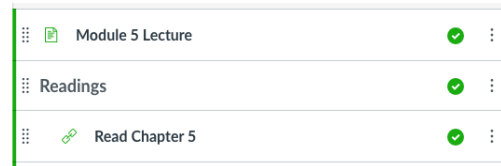
Research Questions

1. When incorporating adaptive technologies into online courses, what is the perceived usefulness and ease of use for students interacting with these technologies?
2. When implementing the Quality Matters© standards into an online course, what is the perceived usefulness and ease of use for students interacting with a course site based on the Quality Matters© standards?
3. Do adaptive technologies and Quality Matters© standards, by removing technology barriers, assist students' overall outcomes in online courses?

COURSE DESIGN UPDATES

IU eText (<https://etexts.iu.edu/>)

- Online textbook provided by IU
- Significantly decrease the cost of textbooks
- Highlight, tag, annotate
- Embeds directly into the Learning Management System
- Access all materials in one environment
- Provides analytics and note sharing with students



Quick Checks (<https://toolfinder.eds.iu.edu/tool/quick-check>)

- Ungraded assessments, short quizzes
- Incorporated as part of lecture materials
- Prepare students for future formal assessments
- Provides immediate feedback and students can repeat
- Provides students unlimited attempts

Quality Matters (<https://www.qualitymatters.org/qa-resources/rubric-standards>)

- Research and standards-based online education and course design quality assurance system
- 42 Specific Rubric Standards
- Provides guidance to ensure a well-design online course and creates ideal learning conditions
- QM-informed course template previously created through previous funding, an IUPUI Center for Teaching and Learning Curriculum Enhancement Grant

PRELIMINARY RESULTS

Qualitative Results

IU eText

Generally, students found eText easy to use and appreciated that they could highlight, take notes, and search for keywords. Students appreciated the cost savings and the time savings for not having to hunt for cheap textbooks online. Students stated that although they prefer to read a physical textbook, the cost savings and convenience of the eText was worth using it over a physical textbook.

Quick Checks

Generally, students preferred to have Quick Checks incorporated into the course lecture. They found the Quick Check interface easy to use. Additionally, they appreciated being able to prepare for quizzes and exams, and "see examples of what quiz and exam questions would be like." They would prefer to have some more advanced questions incorporated into the Quick Checks.

TAM Results

- Some students found both eText (5.75 +/- 0.83) and Quick Checks (6.25 +/- 1.3) required significant mental effort.
- Some students found that both eText (6.00 +/- 0.71) and Quick Checks (6.00 +/- 1.22) take significant effort to become skillful at using.
- Some students found the eText (5.5 +/- 1.12) and Quick Checks (6 +/- 1.22) systems frustrating.

CONCLUSION

Student feedback on eText and Quick Checks is mixed. While the qualitative results show that students appreciate certain aspects of both adaptive technologies, the TAM survey results indicate that students have technical difficulties with both technologies, suggesting that further mitigation needs to occur. A future plan is to ensure that training materials for both technologies are readily available to students.

Next Steps

- Quality Matters implementation and data gathering, currently occurring
- Comparative analysis of formative of summative assessments from baseline course
- Full analysis of TAM and qualitative data and dissemination of results

Acknowledgments

This project was generously funded by the IUPUI STEM Education Innovation & Research Institute (SEIRI Seed Grant).

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AUTHOR INFORMATION

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ABSTRACT

Adaptive Technologies and Quality Matters© Rubric standards have been created to mitigate the technological challenges for students taking online courses, to improve the overall quality of online courses, and to increase the effectiveness of student learning in online courses. This poster presents preliminary results of a two-year project that is testing the potential usefulness of these online teaching techniques. The activities for this project include incorporating Adaptive Technologies and the Quality Matters© Rubric into an online LIS course and measuring the impact of these changes to the online course through student focus groups, Technology Acceptance Model (TAM)-based surveys, and formative and summative assessments. The objective of this project is to measure the effectiveness of Adaptive Technologies and the Quality Matters© Rubric in improving the online educational experience of the students impacted. This project addresses the following research questions: 1. When incorporating Adaptive Technologies into online courses, what is the perceived usefulness and ease of use for students interacting with these technologies? 2. When implementing the Quality Matters© standards into an online course, what is the perceived usefulness and ease of use for students interacting with a course site based on the Quality Matters© standards? 3. Do Adaptive Technologies and Quality Matters standards, by removing technology barriers, assist students' overall outcomes in online courses? The purpose of this study is two-fold, to test how well these tools improve online education and to develop a framework for incorporating Adaptive Technologies and Quantity Matters© in other online LIS courses.

REFERENCES

MarylandOnline. (2020). *Home | Quality Matters*. QualityMatters. <https://www.qualitymatters.org/>

Murillo, A. P., & Jones, K. M. L. (2020). A “just-in-time” pragmatic approach to creating Quality Matters-informed online courses. *Information and Learning Sciences, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/ILS-04-2020-0087>

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