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Assessment of Two Online Tutorials: Student Learning, Student Preferences

Dianna E. Sachs, Kathleen A. Langan, and Carrie C. Leatherman – University Libraries, Western Michigan University

1. Research Questions

- Do students have better learning outcomes after viewing Searchpath or ResearchPath?
- Do students prefer Searchpath or ResearchPath?

2. Background

Online Library Research Tutorials:
- Asynchronous
- Teach information literacy
- Quizzes that assess student learning
- Primarily for undergraduates

Searchpath (1999-2009)
- Static HTML pages
- Some interactivity
- Dated images, content, and style

ResearchPath (2009-present)
- Audio/visual, interactive
- Student voiceover
- Screencast
- Aligned with best practices for Millennials

What is Information Literacy?
Information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. It is adopted by the American Association for Higher Education (1999)
- In line with WMU Academic Affairs Strategic Plan (2010)

Closing the assessment loop
Timeline:
1999-2000: Searchpath created (E. Jayne and M. Bundza)
2000: Searchpath created (E. Jayne and M. Bundza)
2009: Created ResearchPath – Millennial-friendly
2009-10: Conducted pilot study to assess tutorial effectiveness
2011: Re-revamped ResearchPath according to results
2011: Received Faculty Assessment Grant
Fall 2011-Spring 2012: Conducted study to assess effectiveness of changes – closed assessment loop

Best Practices
- Interactive, visually engaging, active learning, concept-based games
- Streaming media, audio, ease of use, brief
- Availability at point-of-need, à la carte modules

3. Methodology

Phase 1: Quiz
- How effectively did students learn?
- 30 WMU undergraduate participants
  - Had not taken either tutorial
  - Half completed Searchpath, half ResearchPath
  - All completed quiz
  - Participants given $15

Phase 2: Mock Research Project
- How effectively did students apply what they learned?
- 30 WMU undergraduate participants
  - Had not taken either tutorial
  - Half completed Searchpath, half ResearchPath
  - All completed mock research project
  - Participants given $20

Phase 3: Focus Groups
- Student preferences of presentation style
- 3 focus groups, 4 participants in each
  - Participants viewed both tutorials
  - Two investigators led discussion
  - Recorded discussion – audio
  - Asked standard questions of all focus groups
  - Followed up on issues which arose at time of discussion
  - Participants given $25, pizza and snacks

4. Results

Phase 1: Quiz
The mean score for students who viewed Searchpath was 79% correct, for students who viewed ResearchPath was 82%.
Despite comparable overall scores, there was a marked difference in student performance on some questions. This could indicate different levels of comprehension of specific concepts.

When analyzed using Pearson’s Chi-Squared test, the scores for four quiz questions showed significant (0.00-0.05) or marginally significant (0.051-0.10) difference between tutorial groups

Phase 2: Mock Research Project
The mean score for students who viewed Searchpath was 66% correct, for students who viewed ResearchPath was 58%.

Phase 3: Focus Groups
- Searchpath
  - Likes: Hands-on, self-paced, thorough
  - Dislikes: Boring, text-heavy, not engaging, game difficult, too much information

- ResearchPath
  - Likes: Interactive, animation, engaging, audio, especially college student voice-overs, animation, school colors, describes other campus resources
  - Dislikes: Not enough control on how move through tutorial, not enough interactivity

5. Discussion and Conclusions

Was our assessment successful? Yes!
- Answered our research questions

What did we learn from this assessment?
- No significant increase in student learning from “old” static tutorial and “Millennial friendly” tutorial
- Contrasts assumptions in education/library literature
- Strong preference among participants for the “Millennial friendly” aspects of tutorial

Performance disparity between the ResearchPath and Searchpath groups on some questions/concepts. Why?
- Tutorial did not present concepts well
- Quiz or Project was not an accurate reflection of tutorial concepts
- Next step – revise tutorials to address areas of poor performance

Further Discussion:
- Are students able to learn equally well regardless of format?
- How well did we implement best practices?
- Was the artificial “research study” environment an accurate reflection of how students learn in “real life”?

Student preferences matter! Reason enough to revamp the tutorial

6. Future

1. Ongoing assessment of ResearchPath
   - Quantitative and qualitative
   - Assess students’ information literacy skills
   - Focus groups

2. Update regularly based on evidence

3. Create additional online tutorials as needed

4. Use eLearning environment
   - Assess “real life” quiz data

What will the next generation’s learning styles be?

7. Thank you!

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- Faculty Assessment Grant Program
- WMU Office of Institutional Effectiveness
- Dr. Jeff Terpstra and Benedict Domitorio, WMU Statistical Consulting Center
- Jennifer Walters, WMU Libraries Graduate Assistant

Timeline:
- Fall 2011-Spring 2012: Conducted study to assess effectiveness of changes – closed assessment loop
- 30 WMU undergraduate participants
- Asked standard questions of all focus groups
- Participants given $25, pizza and snacks

Mean Quiz Scores

Mean Project Scores

Graph 1: ResearchPath screen shot
Graph 2: Searchpath screen shot

Graph 3: ResearchPath mean score
Graph 4: Searchpath mean score

Graph 5: Mean Quiz Scores
Graph 6: Mean Project Scores

Graph 7: Quiz Questions with Significant Marginal Sig. Differences Between Tutorial Groups
Graph 8: Project Questions with Significant Marginal Sig. Differences Between Tutorial Groups

Graph 9: ResearchPath mean score
Graph 10: Searchpath mean score