

Using Wikis: A (Closer) Look at Collaboration in the Classroom

Presented by:
Dr. Mauricio Vásquez
Assistant Professor in MIS
University of Puerto Rico at Mayagüez
mauricio.vasquez@upr.edu

Using Wikis: A (Closer) Look at Collaboration in the Classroom



Motivation

- Wiki is a server software that allows users to create and edit Web page content using any Web browser. Wiki supports hyperlinks and has a simple text syntax for creating new pages and cross links between pages on the fly.
- Despite their popularity, little is known about factors that foster or discourage adoption of this technology (Ives et al., 2005)

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Motivation

- Provide a foundation for later and more comprehensive studies of wiki and technology adoption in general
- Use of Structural Equation Modeling (SEM) as a method for understanding technology adoption, still growing in the IS field.

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Research Question

Do training, perceptions of critical mass and complexity have a significant effect on intention to adopt wikis?

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Hypotheses

- *H1: PU has a positive impact on users' intention to adopt wikis.*
- *H2: PEOU has a positive impact on users' intention to adopt wikis.*
- *H3: Perception of Complexity has a negative impact on Perceived Ease of Use, influencing users' intention to adopt wikis.*
- *H4: Perception of Complexity has a direct negative impact on users' intention to adopt wikis.*
- *H5: Training on how to use wikis has a positive impact on Perceived Ease of Use of wikis.*
- *H6: Perceptions of critical mass (PCM) have significant positive effect on Perceived Ease of Use of wikis.*
- *H7: PCM have a significant direct influence on users' intention to adopt wikis.*

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Method

- **Task**
 - Participants worked together populating a wiki for academic purposes
 - First: subjects were required to write at least five questions from a chapter or topic from the textbook
 - Second: participants were asked to edit questions from other chapters, improving language, choices, clarity, meaning and level of difficulty.

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Method

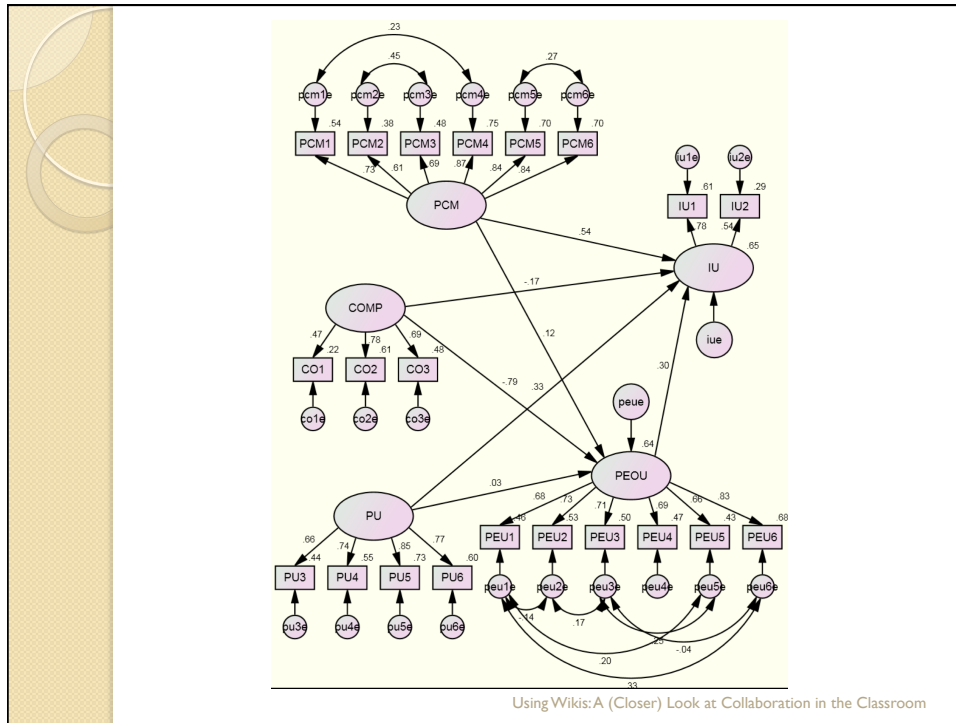
- Task (continued)
 - Third: Participants were required to repeat stages 1 and 2 again, making them focus on the way users post and retrieve content.

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Results

- Participants
 - 456 undergraduate students were asked to participate in this study.
 - Fewer than 300 turned in the questionnaire. Much higher than the 80+ participants reported in group system studies (Fjermestad and Hiltz, 1998).
 - After a list-wise deletion process to remove partial responses and missing data, 269 were considered for this analysis.

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Hypothesis Testing

Hypothesis	Path	Estimate	P-Value
H1	PU -> IU	0.372	< .01
H2	PEOU -> IU	0.376	< .05
H3	COMP -> PEOU	-0.892	< 0.01
H4	COMP -> IU	-0.240	0.255
H6	PCM -> PEOU	0.082	< .05
H7	PCM -> IU	0.462	< .01

Overall variance in IU explained by the model: 0.648

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Hypothesis Testing

Construct	Direct Effect	Indirect Effect	Total Effect
PCM	0.545	0.036	0.581
COMP	-0.17	-0.237	-0.407
PEOU	0.301		0.301
PU	0.326		0.326

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Discussion

- H1 and H2 were supported at $p < .05$
 - TAM applies to wikis
 - No surprise, given the extensive previous research on TAM
 - But it is a surprise! R^2 was ~65%
 - Editing wikis is a relatively new exercise for most people, which may lead users to believe that novelty artifacts that are easy to use can be adopted easier.

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Discussion

- Complexity
 - Strong negative correlation between COMP and PEOU –the highest reported in this study
 - Higher complexity means lower ease of use
 - However, Complexity didn't have a significant effect on IU

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Discussion

- Complexity (cont...)
 - Two complexity factors:
 - Wiki size: as the wiki grew, it became harder to find relevant information and make meaningful contributions
 - Wiki interface: as content grew, so did links and pages and navigation became cumbersome
 - *“There was no undo button. Many times I wrote something, but I accidentally deleted it, and I was not able to go back.”*
 - *“In the beginning, it was unclear where to post our work, which was aggravating. Also, other people changing my work to sound worse than my original did was a negative.”*

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Discussion

- Complexity (cont...)
 - Users inadvertently erased previous posts partially, even completely
 - “...When I clicked the chapter 7, which I majorly contributed to, all the content was gone and was replaced with this message, "whoo hoo! what happened here?" All the hard work people put into contributing the the chapter 7 (...) is gone. Do we have to write summaries all over again?.”

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Discussion

- Perceived Critical Mass
 - Positive impact on IU
 - Adoption is influenced by whether or not the tool is used by other peers
 - Awareness of participation seems more important than just knowing about the technology
 - Positive impact on PEOU
 - Widespread use of technology lead users to believe it's easy to use, in spite of the fact that many consider this tool complex to use

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Discussion

- Perceived Critical Mass
 - Positive impact on PEOU
 - Collective adoption portrays the impression of ease of use
 - Value of wikis increase with the number of people that use it
 - When many people use the technology, they become confident about it. Thus a significant correlation between PCM and PEOU

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Discussion

- Perceived Critical Mass
 - Positive impact on PEOU
 - The more people contribute to the site, the more useful and interesting it turns, thus attracting more users and contributors. This turns into better PEOU and IU

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Conclusion

- Achieving a critical mass of active users and not just readers should be a top priority if the wiki is to be successful.
- Initial set of users may prove critical in attracting more users to the platform
 - Easier in educational environments: many students were truly interested in using the wiki regardless of extra credit

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Conclusion

- Complexity may not necessarily be a threat to wikis if handled properly
 - The organic structure makes wikis a complex apparatus
 - At the same time, wikis make it really easy to create web pages without technical knowledge
 - Doing the same thing coding HTML would have been extremely complicated and impractical

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Conclusion


- In academia, students do benefit from wikis...
- But so do instructors!
 - Possibility to see the evolution of a written assignment
 - Tracking and streamlining group projects
 - Knowledge base for instructors, due to searchable capabilities and categorization

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Conclusion

- In organizational environments
 - Wikis as knowledge repositories –depending on context and particular needs
 - In some cases, wikis may be perceived less complex than similar artifacts while serving the same purpose

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Questions?
Thank you!

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