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Wiki Technology: Promoting Academic Success in the Science Classroom

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Abstract
The Georgia Gwinnett College campus wiki site has progressed from a tool to accompany the traditional educational platform to a site utilized by multiple faculty and students to generate a collaborative learning environment. Biology faculty’s utilization of the wiki varies classroom to classroom, including solving case studies or problems, completing group research projects, and student development of chapter reviews and exam study guides. In all three applications of the wiki, students consistently rank the wiki in the top three course resources that are useful to help achieve academic success, surpassing the course textbook. It ranks as the number one course resource in classrooms using the wiki to develop reviews and exam study guides. Additional data results from the student survey will show the comparison of the student’s experiences in wiki and non-wiki classrooms, as well as the effectiveness of the wiki in various aspects of student learning.

Project Outline

Methodology: wiki set up
Campus wiki site provides the platform for course material.

Methodology: wiki implementation 1
1. Course lesson objectives were entered as the template for student entry and response.
2. Students answered lesson objectives on the wiki.
3. Responses graded and corrected by faculty member.
4. Student uses final version of wiki to study for exams.

Methodology: wiki implementation 2
1. Project topic outlines were entered as the template for student entry and response.
2. Students completed the information on the wiki.
3. Responses graded by faculty member.
4. Students present final versions of project via the wiki.

Methodology: collection of data
1. A post-course survey consisting of qualitative and Likert scaled questions to determine student views of the effectiveness of the wiki in their course work and learning.
2. Survey results for this conference consist of multiple upper and lower division biology classes with 97 students participating.

Preliminary Data

Preliminary Conclusions

1. Useful to achieve academic success
Preliminary results show that the wiki is ranked by the students (n=97) as the second most useful course resource (data shown at left). This was ranked from ten utilized resources in the classroom, including videos, websites, in-class group activities and study groups. For classes where the wiki was developed as a exam study tool, students ranked the wiki as the top resource to help them study for the course. The wiki was used once a week for the whole semester with student inputting their answers to the course lesson objectives. Ranking second is PowerPoint lectures which were used every class session. In-class group activities which were used the once a week (similar to wiki) ranked third (data shown to left).

2. Effective in studying for the course
Preliminary results show that for classrooms where the wiki was developed as a exam study tool, students ranked the wiki as the top resource to help them study for the course. The wiki was used once a week for the whole semester with student inputting their answers to the course lesson objectives. Ranking second is PowerPoint lectures which were used every class session. In-class group activities which were used the once a week (similar to wiki) ranked third (data shown to left).

3. Effective in seeking answers to questions
Preliminary results show that for classrooms where the wiki was developed as a exam study tool, the wiki ranked on par with the PowerPoint lectures for effectiveness in seeking answers to questions in the course (data shown to left). All three teaching methods showed achievement in this area for all methods of wiki use (data not shown, n=97).

Future Directions
Research in the wiki will progress into analyzing the method of wiki implementation within the classroom. This seems to affect the students views on use and effectiveness. It is unclear if there can be a clear determination into which wiki method is the most successful in helping students be successful in Biology courses. The wiki may be secondary to the effectiveness of the teaching style by the instructor.