

# Best Practices for Blackboard

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## Abstract

This study investigated the use of computer technologies as learning tools at a small, liberal arts college in a rural Midwestern community. The college instituted a plan to incorporate laptops and wireless networking into the classroom. The faculty were assigned laptops to help them plan and create lessons at the beginning of the winter 2001 semester. The next semester they received a one day training session on Blackboard, an online course management software package. This same semester students were issued similar laptops.

The study explored three research questions, Where do the faculty, as a group, lie along the continuum between Androgogy and Pedagogy? What are their attitudes towards Chickering and Gamson's (1984) best practices in undergraduate education? Finally, how do they implement the best practices through Blackboard?

## **Introduction**

The faculty of a small, private, liberal arts college were issued laptop computers, at the beginning of the fall semester of 2001, thus beginning the laptop initiative. They were also given access to an interactive web course management program called Blackboard, and they received a one day training session on this program. They were subsequently asked to use this program in their classes. The next semester students were given similar computers. This study marks the second anniversary of the laptops initiative and use of Blackboard.

This study seeks to answer three research questions. The first is where does faculty profess to lie along the spectrum between Androgogy and Pedagogy? The second question is to what extent do they agree with Chickering and Gamson's seven best practices for undergraduate education? The final question is how do they use Blackboard to facilitate those best practices? The faculty responses to these questions describe the overall quality of the on-line education at this institution as well as the success of the laptop initiative.

Pedagogy is the professional practice of teaching children; while androgogy is the practice of teaching adults (Smith, 1996). Pedagogy is compulsory education, while androgogy is voluntary. Pedagogy is teacher-centered and androgogy is student-centered. Learners have minimal control of learning in a pedagogical environment while an androgogical environment is designed to provide students with greater levels of freedom over what they learn. Pedagogy is concerned with training for life experiences while androgogy assimilates life into the learning experience. Pedagogy encourages convergent thinking while androgogy encourages divergent thinking. Androgogy involves learners in active learning experiences as opposed to rote learning methods practiced in pedagogy. Pedagogy is dependent on the educators' knowledge while androgogy engages students and faculty as partners in a learning community. Pedagogy imparts information while androgogy opens vistas for continuous learning and discovery. College students respond more positively to androgogy because it engages them as equals in the pursuit of knowledge.

Chickering and Gamson (1994) purposed seven principles for best practice for undergraduate education as a result of their meta-analysis of over fifty years of research. Each practice in itself enhances the educational experience. However, best results are achieved when following all seven of the best practices. The following paragraphs provide a brief discussion of each.

The first principle is that best practice encourages student-faculty interaction. Colvin (1998) recognized interaction as an integral part of learning and suggested the professoriate consciously strive to maximize the frequency and quality of interactions with students. Interaction should be formal and informal. Faculty should be visible at

college functions including sports events and other extracurricular activities. Faculty should hold regular office hours. It is entirely appropriate for faculty to eat, work, and play with students.

Encouraging cooperation among students is the second proposed best practice in undergraduate education. Fisher and Ford (1998) reported that people learn better in cooperative learning environment than in competitive settings. Furthermore, Johnson, Johnson, and Smith (1998) discovered college students participating in cooperative environments exhibit higher academic achievement and higher self-esteem than their peers. Cooperative learning can be practiced in many ways including assigning groups of students to solve case studies together.

The third best practice is to encourage active learning. Weimer (1993) stated that students learn more, retain information longer, apply knowledge better, and continue learning when actively engaged. Structured walk through is a technique often used in the field of Information Technology to engage participants in the process of discovering potential improvements of software. This technique can be applied in the classroom to actively engage students in the process of learning to code software. English faculty frequently engage learners in a process of sharing their written work and critiquing the work of others with the result of improving writing skills.

Prompt feedback is the fourth best practice proposed. Black and Wiliam (1998) found a direct and positive correlation between frequency of feedback and learning. The best feedback is timely feedback. Email is one of the best ways to facilitate quick feedback.

Best practice emphasizes time on task. Sorcinelli (1995) suggested educators need to structure and manage class time to maximize time on task. In this way we model good time management skills. Including a course schedule with deal in the syllabus focuses student attention to the tasks at hand.

Chickering's best practices encourage communicating high expectations. Competency-based, outcomes-based, and authentic assessment theories provide models for developing course curriculum that clearly communicate expectations. Hayes (1999) indicated learning objectives focus attention and effort, thereby improving the quality of time spent on task, but only to the extent they are clearly written and relevant to occupational skill requirements. Experience reviles that students live up to or down to faculty expectations. However, student self-esteem is enhanced when the bar is raise.

Accommodating diverse talents and learning styles enhance the educational experience. Silver, Strong, and Perini (1997) reported most theorists recognize four basic learning styles: Mastery, Understanding, Self-Expressive, and Interpersonal. Mastery style learners characteristically absorb information concretely, process information sequentially, and value clarity and practicality. An understanding style learner focuses on ideas and abstractions. They question, reason, and test ideas. They also value logic and evidence in learning experiences. The self-expressive style learner seeks icons of knowledge, constructs new ideas from feelings, and assesses learning experiences by

their artistic aspects. Interpersonal learners seek knowledge to help others while focusing on concrete information and preferring social learning experiences. The educator's challenge is to create learning environments to address the needs of each style.

Blackboard is an interactive web course management system. The intended purpose of Blackboard is to provide stand alone on-line courses. However, since this institution is a residential campus, Blackboard is most often used to augment traditional classroom experiences.

Several Blackboard features were identified as corresponding to the best practices. The research team met on several occasions to associate Blackboard features with the best practices. The first session was used to identify potential associations. A second brainstorming session was held to identify any additional associations. The third session culled the list to those features that were tightly coupled to a best practice.

We found Blackboard's email, virtual classroom, chat, and discussion forum features were most likely to facilitate student-faculty interaction. Cooperative learning can be facilitated by using group and group pages features. Active learning may be achieved by posting assignments and links to external web pages. Automatically graded quizzes and exams and an on-line grade book provide prompt feedback. The use of on-line calendars and task management may help to optimize the time students spend on task. The tracking feature that maybe activated on Blackboard content modules are designed to help faculty monitor the time individual students spend on task. High expectations can be communicated in the syllabus, and assignment rubrics posted. Blackboard may be used to accommodate diverse learning styles by providing content for student review or by providing supplemental materials and alternate learning experience.

A web survey was constructed to answer our research questions by polling faculty on their attitudes and teaching techniques. The survey was reviewed by the Director of Institutional Research and the Dean of Academic Affairs. All full-time faculty were emailed a request to participate in the study on Wednesday January 29<sup>th</sup> at 3:25 pm. A link to the survey was included in the email. We had our first response in less than five minutes and seven more within half an hour. In all thirty-five of the forty faculty members responded. We entered all the responses into a Microsoft Excel spreadsheet and performed a descriptive statistical analysis on the data. Our findings are listed below. The validity of our findings is based solely on the honesty of the respondents' answers.

## **Findings**

This institution's faculty, for the most part, professes to believe in androgical principals. They state a firm agreement with the seven best practices for undergraduate education. Faculty are making good use of Blackboard to facilitate four of the seven principles. These include student-faculty interaction, active learning, communicating high expectations, and accommodating diverse talents and learning styles.

Our first research question was where do faculty lie along the continuum between Androgogy and Pedagogy? The first survey question I asked them to answer this was “Do students attend college by personal choice?” This question explores whether or not students want to learn. The pedagogical theory is that students attend schools because they must. In contrast, the androgogical approach states that students attend school because they wish to learn. Ninety-one percent of the faculty reported the belief that students do attend by personal choice.

The second question I asked was “Should students exercise some control over what they learn?” This question addresses the amount of freedom students have in selecting majors, minors, electives, and learning experiences. Ninety-one percent of the faculty expressed agreement with the premise that students should have control over what they learn.

The third question survey question pertaining to androgogy/pedagogy asked was “Should students be active participants in the educational process?” This question pertains to the dichotomy between didactic lecture and active learning experiences. We believe students learn more and retain information longer when actively engaged in the learning process. One hundred percent of the participants agreed that students should be active participants in the education process.

The fourth survey question I asked was “Are students capable of assimilating life experience with course content?” This question relates to student’s intelligence and maturity. Maturity has a positive affect on the quality of cooperative experience. Adult students bring divergent life experiences into the class room that may benefit all learners when shared. In the practice, androgogy the lines between teachers and students blur. Eighty-six percent of faculty said that students can assimilate course content with life experience.

The next survey question was “Can students analyze and integrate information?” Analytical thinking and integrating information are key to theory classes. Eight-nine percent of the faculty agreed that students had this ability. We were surprised that eleven percent of the respondents said students lacked analytical ability.

The next two survey questions I asked were “Do students prefer active learning experiences over rote learning experiences?” and “Do students prefer group discussions over didactic lectures?” Seventy-seven percent reported that students prefer active learning experiences over rote learning. Only sixty-six percent said that group discussion is preferred over lectures. As a student these questions are very simple. From the other side of the room though, it is not as clear. Faculty comments suggest that students are reluctant to participate in group discussion and active learning experiences. As a student, the problem seems to lay in the professors abilities to incorporate group discussions and create interesting activities.

The final survey question in this category was “Should learning be a life long process?” This question pertains to the fact that we live in the information age where the amount of information expands continuously. Therefore, well informed citizens must be life long learners. One hundred percent of faculty expressed agreement that learning should be a

life long process. However, it should be noted that Life long learning is part of the mission statement of this institution.

In conclusion, the general consensus of the respondents indicates a strong propensity toward an androgogical approach. Faculty responded unanimously that classes should be student centered and that learning should be a life long process. The responses, while generally favorable to androgogy, suggest faculty development in the areas of active learning and group learning strategies maybe beneficial.

The second research question this study set out to answer is “To what extent do they agree with Chickering and Gamson’s seven best practices for undergraduate education?” The ninth question our survey asked to answer this was “Can student-faculty interaction enhance learning?” Student-faculty interaction is the most important factor in student motivation and involvement. Frequent and consistent interaction between students and faculty lets the students know that their professors take an interest in them and that encourages them to do better in their work. Who wants to do a bad job if they know someone with an interest in them will see it? The faculty answered unanimously that interaction can enhance learning.

Our tenth survey question was “Can student cooperation enhance learning?” Learning like many other things is best accomplished as a team event. Each student works off of the strengths of every other student. They point out each others short comings for the betterment of the team’s learning. One hundred percent of the faculty agreed student cooperation can enhance learning.

The faculty also unanimously agreed with the premise posed in the eleventh survey question, “Does prompt feedback enhance learning?” Prompt feedback encourages students who do well and allows students who do poorly to learn from their mistakes. Corrective measures work best when the event to be corrected is still very fresh in the learner’s mind.

The next question survey posed to the faculty was “Do active learning experiences enhance learning?” Students are not computers. They do not remember everything put in front of them. They need activities events that will stand out in their memory. One hundred percent of the faculty agreed active learning activities enhances learning.

Our thirteenth survey question was “Does time on task enhance learning?” Time on task refers to how long a student is actively engaged in the learning experience. It is a common assumption that there is a direct and positive correlation between the amount of time spent studying and the level of understanding attained. Ninety-one percent of faculty said that time on task does enhance learning.

The fourteenth survey question we asked “Can communicating high expectations enhance learning?” Conventional wisdom tells us that students will live up to faculty expectations. It is the faculty who decide how high to raise the standard. Higher standards can lead to

higher levels of understanding and self-esteem. Ninety-four percent of faculty reported that expressing high expectations can enhance learning.

The fifteenth survey question we asked in this area was “Can accommodating diverse talents and learning styles enhance learning?” Different people learn best in different ways. They also bring divergent talents and experiences to the class. In as much as possible faculty are well advised to provide alternate learning experiences. A database built over time may provide a rich collection of learning activities designed to accommodate diverse learning styles. Web course management systems, such as Blackboard, allow faculty to build such databases. Ninety-one percent of the respondents reported that accommodating diverse talents and learning styles can enhance learning.

The respondents expressed strong overall agreement with Chickering and Gamson’s (1984) best practices for undergraduate education. They are unanimously agreed that student-faculty interaction, student cooperation, prompt feedback, and active learning can enhance learning. They are still over ninety percent agreed on the other two practices.

Finally in response to the third research question asked “How do faculty implement the best practices through Blackboard?” The previous research questions explored faculty attitudes and beliefs about higher education. This question explores how they put those attitudes and beliefs into practice. Faculty were asked to describe what Blackboard features to implement each of the best practices. They were presented with a group of choices, including “other”. They were instructed to select all of the choices that applied and to list any other features they used for the stated purpose.

The sixteenth survey question explores how faculty use Blackboard to interact with students. Specifically in interaction, Ninety-two percent of professors reported using email. Eight percent had used chat. Thirty-nine percent used the Discussion board forum, and twenty-eight percent listed using other features. Under the category of other, faculty reported posting information and assignments (14%), using the grade book (3%), announcements (6%), and one-on-one discussion forums (3%). Percentages equal more than one hundred percent because faculty were asked to mark all the choices that applied. The data suggests faculty are making a conscientious effort to interact with students through Blackboard. Several creative strategies were indicated under the category of other including one-on-one discussion forums.

The next survey question quaries faculty about their use of Blackboard features to facilitate cooperation among students. Sixty-one percent of the respondents reported using the groups feature, six percent used group pages, and six percent reported using other features. Group quizzes (3%), email (3%), and external websites (3%) were listed in the category of “other”. The responses shown above are more than one hundred percent because faculty were asked to mark all the choices that applied. The data suggest faculty are exploring the use of Blackboard to create cooperative learning communities. However the use rate of the group feature indicates that group learning may not be universally practiced.

The eighteenth survey question asked faculty how they used Blackboard to engage students in active learning. Eighty-eight percent of professors reported using assignments, sixty-one percent using websites, and twenty-two percent using other features. The other features reported include discussion board forums (6%), group presentations (3%), posting power point presentations and other information (9%), study guides (3%), practice quizzes and essays (3%). This data suggests faculty are making a conscientious effort to engage students in active learning experiences through Blackboard.

The ways in which faculty used Blackboard to provide prompt feedback was our nineteenth survey question. Quizzes and exams were used by a fifty-three percent of the respondents. Forty-four percent used the grade book feature and twenty-five percent used other features. The other features reported include emailing papers with comments back to students (17%) and the discussion board (3%). Considering the security concerns associated with on-line assessment, this data indicates exploration into how Blackboard can facilitate feedback but acceptance is relatively low.

The next survey question examined how faculty used Blackboard to facilitate time on task. Nineteen percent of the respondents reported using the calendar feature. Thirty-three percent used the tasks feature. Thirty-six percent reported using the student tracking feature. Three percent reported using individual reports under the other category. The features we feel having the greatest positive effect on motivating students into time on task were calendar and tasks. The data suggest acceptance of Blackboard features to motivate students to spend time on task is below expectations. This may be due to the user friendliness of the software itself.

The twenty-first survey question asked participants to report how they expressed high expectations through Blackboard. Eighty-nine percent of the respondents reported using the syllabus feature to express high expectations. Fifty-eight percent reported using assignments and rubrics. Eight percent used other features including quizzes with rubric (3%), announcements (3%), and one-on-one discussion groups (3%). The data suggest the faculty are beginning to take advantage of Blackboard's capacity to communicate educational standards.

Our twenty-second asked faculty how they used Blackboard to accommodate diverse talents and learning styles. Class preparation time is limited at this institution due to the number of different courses taught in a semester and a two year course rotation. Given this caveat, the responses indicate faculty interest in using Blackboard for this purpose. Seventy-two percent of the faculty reported providing supplemental materials on Blackboard. Fifty-eight percent reported providing review materials. Thirty-one percent reported providing alternate learning experiences through Blackboard. Eight percent used other features including study guides (6%) and drills (3%).

Although use of Blackboard is voluntary the overwhelming majority is finding unique ways to use this tool. The faculty use Blackboard to communicate with students through email, communicate high expectations with syllabi, and use assignments to facilitate



active learning. The least frequently used features of Blackboard are chat, group pages, calendar, and tasks. Group pages could be used to asynchronously share the work of teams of students with a whole class. Chat rooms maybe an effective tool for facilitating synchronous group discussion when participates cannot meet in the same space. Expert guests can participate with a class from remote locations using the chat feature. The calendar and tasks features can be used either individually or in combination as time management tools. In time, we anticipate a broader use of the Blackboard features.

The laptop initiative succeeded in meeting its objective of making laptops and a web course management system available to students and faculty. The data suggests the faculty believe in the androgogical approach to teaching and in the principles outlined by Chickering and Gamson. The majority of the faculty adopted Blackboard as a teaching tool and they are using it in ways consistent with the best practices. The data does not suggest any connection between these three outcomes.

## **Recommendations**

We make two broad suggestions to improve computer-mediated teaching. First, the data suggest faculty development is needed in the areas of active learning and group learning strategies. Second, additional training in the use of Blackboard is needed and should focus attention toward the constructive use of chat, group pages, calendar, and tasks.

## APPENDIX A

### MMC Blackboard Faculty Survey

This study is designed to explore the ways faculty use Blackboard to facilitate learning. It has been approved by the Dean of Academic Affairs and the Office of Institutional Research. Your input will be invaluable to our effort to learn how to best use this course management tool. The results will be shared at the upcoming Midwest Instruction and Computing Symposium.

Thank you for your cooperation.  
Justin Carlin & Mark Vinegar

#### Pedagogy/Androgogy

- Do students attend college by personal choice?  
Should students exercise some control over what they learn?  
Should students be active participants in the educational process?  
Are students capable of assimilating course content with life experience?  
Can students analyze and integrate information?  
Do students prefer active learning over rote learning experiences?  
Do students prefer group discussions over didactic lectures?  
Should learning be a life-long process?
- |                              |                             |
|------------------------------|-----------------------------|
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |

#### Best Practices

- Can student-faculty interaction enhance learning?  
Can student collaboration enhance learning?  
Does prompt feedback enhance learning?  
Do active learning experiences enhance learning?  
Does time on task enhance learning?  
Can communicating high expectations enhance learning?  
Can accommodating diverse talents & learning styles enhance learning?
- |                              |                             |
|------------------------------|-----------------------------|
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |

#### Blackboard

What features do you use to interact with students? *Please check all that apply.*

- Email       Chat/Virtual Classroom       Discussion Board       Other

If other, please specify:

What features do you use to facilitate cooperative learning? *Please check all that apply.*

- Groups       Group Pages       Other

If other, please specify:

What features do you use to engage students in active learning? *Please check all that apply.*

- Assignments       Web sites       Other

If other, please specify:

What features do you use to provide prompt feedback? *Please check all that apply.*

- Quiz/Exam       Gradebook       Other

If other, please specify:

What features do you use to facilitate and/or monitor time on task? *Please check all that apply.*

- Calendar       Tasks       Tracking       Other

If other, please specify:

What features do you use to communicate high expectations? *Please check all that apply.*

- Syllabus       Assignments with rubric       Other

If other, please specify:

How do you use Blackboard to accommodate diverse learning styles? *Please check all that apply.*

- Review       Supplemental material       Alternative experience       Other

If other, please specify:

Thank you for taking time out of your busy day to complete this survey. Your responses are important to our research and we will hold them confidential.

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