

Assessing Online Learning and Best Teaching Practices

Presenter

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Introduction

- **Online education has great potential, but it continues to face concerns about its quality.**
- **Until recently most of the research in distance education was based on small samples and anecdotes.**
- **UMUC is the largest provider of online education in Maryland and one of the largest providers in the U.S. and the world.**

Our Best Online Instructional Practices Study

- **Developed research instrument-- Instructional Practices Inventory (IPI) based on a meta-analysis of literature**
 - **IPI measured instructor proficiency in frequency and ease of use in 41 teaching practices.**
- **Piloted with small sample of highly achieving faculty (8 faculty)**
- **Extended study to a representative sample (114 faculty members)**
- **Identified best practitioners and learned how practices are implemented via interviews (30 exemplary faculty)**
- **Detailed assessment of learning outcomes and the process (15 selected courses)**

Methodology

Using mixed-methods approach:

- 1) a survey of participating instructors' experience as teachers using the IPI**
- 2) Peer-review of archived course**
- 3) Interview selected instructors and use of focus groups among them**
- 4) Student evaluations and institutional data and their association with practices**
- 5) Detailed assessment of learning outcomes**

Instructional practices associated with high student retention:

- Effective implementation of providing opportunities for **collaborative learning** (e.g., participation in groups that share experiences, perspectives, questions, alternative explanations of experience, and discussion of issues with others)
- Providing continuous constructive **feedback**. Having the class organized, in which timelines for completing successive steps are **spelled out clearly**
- **Engaging** students by allowing them to draw from their own **experiences** on the job and in non-course activities; introducing them to a variety of **cultures or subcultures**; incorporating **their goals** into the course
- Encouraging students to **question assumptions**

Instructional Practices associated with passing/learning:

- **Working with students to try more than one approach to solving complex problems**
- **Using role playing, simulations, or other activities to supplement lecture and discussion in learning**
- **Encouraging students to draw on their own experiences, considering alternative interpretation of their experiences and that of others, and introducing them to cultures and sub-cultures**
- **Posing learning tasks in terms of solving problems as well as knowledge accumulation**
- **Providing opportunities for collaborative learning**

BOIP: Student Outcomes Pilot

Purpose:

- Assess the effectiveness (including learning outcomes) of selected teaching strategies.**
- Assess the overall learning outcomes in courses taught by faculty who have carefully implemented strategies of teaching as identified in the study.**
- Identify the characteristics of effective learners and measure the impact of effective learning styles when best practices are implemented**
- Invited exemplary faculty who participated in the interview phase of the study.**
- Sample: 9 courses (5 SUS, 4 GS) totaling 158 students**

(BOIP: Student Outcomes Pilot cont)

Students in the selected sections were asked to complete a learning style inventory (OLPI)

Faculty participation requirements:

○ Complete assessment plans

○ Administer pre- and post-test

○ Maintain reflective journals

BOIP: Student Outcomes Pilot

Preliminary Findings:

Pre- and Post-test Results show an average increase of 22 points, significant at the .002 level.

The main themes from the faculty reflective journals centered on assessing:

- The skills, weakness and strengths of their students**

- ways they could improve their own teaching by incorporating new techniques and strategies into the online classroom**

Communication 490: Seminar in Technical Communication Case Study

Create an Assessment Plan.

- 1. Goals for the course and specific learning outcomes and objectives were developed, along with their indicators.**
- 2. Assessment strategies, tools, and techniques were identified and associated with the specific learning outcomes. Rubrics and evaluation criteria were developed for all graded assignments and activities.**
- 3. A map was created to clarify the relationships between activities and learning objectives and their assessments.**
- 4. A pre-course survey was administered by the researchers to determine students' pre-course characteristics.**
- 5. Next, a pre-test was given to students in the class to measure knowledge of the subject matter of the course before the course was started.**

Implement several strategies.

- 1. Course was logically and clearly organized – student comments indicated this as well as good online practice of constructing modules around thematic subjects.**

- 2. Several feedback strategies were used – comments to students in the conference discussions; individual and group email to students; comments on assignments; two research assignments that received individual feedback.**

- 3. Several interaction strategies were used – group work, group presentations, required responses to classmates, group summaries.**

- 4. Course goals and objectives were identified and reiterated throughout the semester – comments by me pointing to course goals and objectives.**

5. **Opportunities were provided for students to share experiences and apply new learning to their professional and personal goals, both in groups and in the general conference discussions.**

6. **Opportunities were provided for students to participate in creating course goals through conference presentations and facilitation of discussions.**

Group Project Assignments	Objectives/Outcomes
* Weekly Presentation of Topics and Discussion Facilitation by student groups	1 - 7
* Conference Summary - groups	1, 2, 4, 5, 7
Individual Project Assignments	Objectives/Outcomes
* Weekly responses/participation	1 - 7
* Research Paper & Conference	2 - 7
* White Paper & Conference	2 - 7
* Critiques & Summaries`	3, 4, 7
* Electronic Portfolios	1 - 7
* Final Exam	2 - 7

Map Assignments to Outcomes

Expected Learning Outcome/Objective:	Assessment Tools:	Mapping assessment to outcome:	How often will data be collected?	Comments
<i>What should students be able to do after completing the course?</i>	<i>What exercises and assignments will ensure that all students have the opportunity to learn this?</i>	<i>How and what will be used to assess how well students are learning?</i>	<i>Daily? Weekly? Midterm? End of term?</i>	

Grade Distribution (16 students)

Withdraws – 3 (2 “failed” pre-test; 1 did not take)

F – 3 (did not take pre-test)

A – 5

B – 0

C – 4

D – 1

Highlights of the Experience

Students who did not become interactive in the conference within the first two weeks eventually dropped the class or failed.

The structured planning of the overview for the course was able to overcome the outdated course materials.

Having all modules and content available to students from the start of the class gives the students planning time and establishes the expectations that they are responsible for knowing what is coming and planning for it.

In spite of expectations for collaborative work, students still experience difficulty coordinating their schedules and work habits. However, when collaboration worked, it was high quality.

Detailed rubrics provide learning all by themselves and make grading less confrontational.

Social responses DO serve purposes in the formal class discussions to move the discussion along and invite others to join.

Scheduling assignments for different times during the virtual week, rather than at the end of the virtual week, provides a better quality response and interactivity. Possible future research?

Substantive responses improved with substantive feedback in the public discussion area – for both poor and excellent responses.

Some assignments need more forecasting than others, especially where new skills are being taught (e.g., required online portfolios).

In spite of continued reminding and interaction, if students do not regularly participate in the class, they will become disoriented, fall behind, and produce inferior work.

Students do NOT necessarily need to be reminded of the learning objectives, especially when the teacher has integrated them into the course design and assignments.

Summary of Study Phases

First Phase of Study

Based on a meta-analysis of the face-to-face (f2f) and online teaching literature, the following principles emerged as effective in teaching.

- 1. Make learning goals and one or more paths to them clear.**
- 2. Use deliberate practice, including opportunities to continue the effort until skill or content is mastered.**
- 3. Provide prompt constructive feedback.**
- 4. Provide an optimal balance of challenge and support that is tailored to the individual students' readiness and potential.**
- 5. Broaden the learners' experience of the subject matter.**
- 6. Elicit active, critical reflection on student's growing experience base.**
- 7. Link inquiries to genuine problems or issues of high interest to the learners.**
- 8. Create an institutional environment that supports and encourages inquiry.**

The research group concluded that the strategies that were effective in teaching could

be modified and/or adapted for teaching online.

In their responses to the initial IPI online instructors reported that they favored certain practices over others; the following are among the most favored:

- **Striving to clarify goals by emphasizing content and providing some form of reminders throughout the semester**
- **Continuous feedback through course conferences, Email or other methods**
- **Encouraging interaction and promoting involvement from the beginning of the course and throughout the semester through methods such as group projects and role-playing**
- **Linkage of course content to personal experiences and interests**
- **Seeking critical thinking from students and making an effort to develop research techniques by way of research assignments and similar methods.**
- **Use of learning modules and objects in addition to some audio and video aids**

Faculty indicated in response to the IPI that the following were most challenging:

- **Assessing students' difficulties with instruction, making goals clear, making sure students comprehend course goals, and accomplishing course objectives**
- **Conveying, demonstrating, and making sure that students understand technical information**
- **Designing research and case analysis and planning weekly lectures**
- **Development of critical thinking skills and relating topics to real world situations**
- **Giving and receiving feedback, keeping students motivated and engaged, and starting and sustaining group and classroom interaction**
- **Development of lessons and course content directed at skill level; helping students to achieve higher grades on proctored final exams**
- **More efficient way to grade essays**
- **Students sometimes lack good writing skills and it is hard to teach these skills effectively.**

- **Web structure is difficult to use**
- **Getting students to use WebTycho tutorial**

Further, student evaluations were analyzed and indicated that certain teaching styles were favored and expected from instructors. Some of the elements of style and practice favored included:

Teaching style and the faculty knowledge of the subject matter

- **Faculty knowledge of the subject matter and the ability to incorporate personal experience into the course.**
- **Faculty is informative.**
- **Organizational skills and using a logical format**
- **Attitude and enthusiasm for the course: encouraging, caring, flexible, and helpful**
- **Offering diverse topics for analysis and discussion**
- **Presentation and utilization of interesting course materials**
- **Accessible and providing timely reminders**
- **Clear goals and objectives**

Feedback

- **Constructive feedback and feedback that has relevant content on assignments and other work**
- **Weekly grades via email or grade book**
- **Timely/regular feedback and proactive feedback**
- **Providing notes that are pertinent and insightful**
- **Weekly commentary and suggestions**

Interaction

- **Interaction with faculty and other students**
- **Encouragement of teamwork, e.g., collaborative papers, group projects and study groups, case discussions and group discussions**
- **Participation in class discussions and work**

Application to individual needs

- **Allowing and respecting students' perspectives**
- **Making subject matter relevant to student interests and goals.**
- **Providing material that is helpful to students' careers**
- **Applying course content to personal life situations and personalizing projects**

Encouraging the use of critical thinking skills

- **The ability to look at issues from many different angles**

Modules and learning objects, especially in technical courses

Second Phase of the Study

The second phase of the study focused on gaining a concrete understanding of how the identified teaching practices were implemented in the online classroom. Examples of strategies are presented under four broad headings: Providing Feedback, Fostering Interaction, Facilitating Learning, and Maintaining Enthusiasm and Organization.

Providing Feedback Strategies

- **Clearly express grading requirements through the use of matrices and rubrics**
- **Respond to students as promptly as possible**
- **Provide students with individualized feedback**
- **Use feedback to provide encouragement and referrals to services**

- **Develop question “banks” to respond to frequently asked questions**
- **Be creative to accommodate early/on time submitters and discourage lateness (e.g., password-protected solutions and use password as an incentive for prompt submission of assignments)**
- **Follow-up with absentee students**
- **Use feedback to identify mistakes and ways to correct them**

Fostering Interaction Strategies

- **Make expectations for course participation and interaction clear**
- **Provide students with a rubric for what good participation looks like**
- **Provide study groups with successful tips**
- **Encourage and facilitate a dynamic introduction**
- **Post issues and questions that are interesting and thought provoking**

Facilitating Learning Strategies

- **Identify and reiterate course goals throughout the course, not only at the beginning or in the syllabus**
- **Provide opportunities for students to ask questions and/or share areas of confusion**
- **Include assignments that purposefully draw from students’ experience.**

- **Tie contemporary examples into class content**
- **Encourage students to share personal examples and how they apply to the course**
- **Ask students to discuss what they have learned**
- **Invite experts and guest speakers through well organized and small group sessions**

Maintaining Enthusiasm and Organization

- **Develop and maintain organization, structure, and a visible presence in the class**
- **Be reasonable with required course assignments**
- **Make regular self-assessments of teaching methods and style**

Linkages to Class Outcomes: Relationship between certain strategies and withdrawal and passing rates

The following strategies are associated with lower withdrawal rates:

- **I encourage students to incorporate their own goals into the work of the course.**
- **I continually provide feedback on student performance.**

- **I encourage student to draw on their own experiences on the job or elsewhere to assist in their learning.**
- **I introduce students to a variety of cultures or subcultures.**
- **I provide opportunities for collaborative learning (e.g., participation in groups that share experiences, perspectives, questions, alternative explanations of experiences, and discussion of issues with others).**
- **I encourage students to question assumptions made by others or by themselves.**
- **I pose learning tasks in terms of solving problems as well as in terms of accumulating knowledge**

The following strategies are associated with higher passing rates:

- **I encourage student to draw on their own experiences on the job or elsewhere to assist in their learning.**
- **I introduce students to a variety of cultures or subcultures.**

- **I provide opportunities for collaborative learning (e.g., participation in groups that share experiences, perspectives, questions, alternative explanations of experiences, and discussion of issues with others).**
- **I encourage students to try more than one approach to solving complex problems.**
- **I pose learning tasks in terms of solving problems as well as in terms of accumulating knowledge.**
- **I use role-playing, simulations, or other activities to supplement lecture and discussion in learning.**
- **I encourage students to consider alternative interpretations of their own experience and other's experiences.**

Translating Student Expectations into Faculty Practices: Associating Course Evaluation Data to Faculty Responses

The following list represents students' expectations and satisfaction with different aspects of a course. High student expectation and satisfaction were met when faculty proficiently and frequently employed the listed practices. Evaluation criteria are underlined.

Instructor preparation/clarity of presentation:

- 1. I spell out a timeline for completing successive steps toward meeting the objectives.**
- 2. I make students aware early in the course of the importance of being a skillful learner.**
- 3. I make students aware of the characteristics of highly effective learners (ones that will help them in this class).**
- 4. I encourage students to use tools and skills that enhance their learning while also saving their time.**
- 5. I adapt challenges to students on the basis of differences in their prior knowledge and skill levels.**
- 6. I assess student's skill as learners at the beginning of the learning experience.**
- 7. I make students aware of resources for their master of recall and skill, including my own expertise.**

Stimulate interest:

- 1.I continually provide feedback on student performances and feedback not only identifies errors, but also includes their causes and ways to correct the errors.**
- 2.I am enthusiastic about the subject and student's learning about it.**
- 3.I encourage students to question assumptions made by others or by themselves.**
- 4.I encourage students to use tools and skills that enhance their learning while also saving their time.**
- 5.I encourage students to incorporate their own goals into the work of the course.**
- 6.I provide supports related to the risks or difficulties each student faces as the course progresses.**
- 7.I check inferences for validity and encourage the students themselves and their peers to do so as well.**

Work was graded fairly and the grading criteria were clearly stated in the syllabus:

- 1.I continually provide feedback on student performances.**
- 2.I advise students in need of remedial work of ways to get the needed help.**
- 3.I make students aware of resources for their master of recall and skill, including my own expertise.**
- 4.I adapt challenges to students on the basis of differences in their prior knowledge and skill levels.**
- 5.I assess student's skill as learners at the beginning of the learning experience.**

Received helpful feedback on my assignments and projects:

- 1.I continually provide feedback on student performances and my feedback not only identifies errors, but also includes their causes and ways to correct the errors.**
- 2.I provide opportunities for collaborative learning (e.g., participation in groups that share experiences, perspectives, questions, alternative explanations of experiences, and discussion of issues with others).**
- 3.I make students aware of the characteristics of highly effective learners (ones that will help them in this class).**
- 4.I encourage students to use tools and skills that enhance their learning while also saving their time.**

The instructor was accessible and demonstrated concern for my progress in the course:

- 1.I continually provide feedback on student performances and my feedback not only identifies errors, but also includes their causes and ways to correct the errors.**
- 2.I make students aware of resources for their master of recall and skill, including my own expertise.**
- 3.I provide supports related to the risks or difficulties each student faces as the course progresses.**
- 4.I advise students in need of remedial work of ways to get the needed help.**
- 5.I elicit student analysis of what worked and did not work in their problem-solving experience.**
- 6.I encourage students to evaluate their efforts to become more proficient learners.**
- 7.I encourage students to use tools and skills that enhance their learning while also saving their time.**

My personal goals and professional goals were met by the course:

- 1.I encourage students to incorporate their own goals into the work of the course.**
- 2.I clarify the course objectives further by discussion in class or online.**

- 3.I advise students in need of remedial work of ways to get the needed help.**
- 4.I encourage students to use tools and skills that enhance their learning while also saving their time**

I would recommend this course and faculty member to other students:

- 1.I continually provide feedback on student performances.**
- 2.My feedback not only identifies errors, but also includes their causes and ways to correct the errors.**
- 3.I make students aware of resources for their master of recall and skill, including my own expertise.**
- 4.I am enthusiastic about the subject and student's learning about it.**
- 5.I encourage students to question assumptions made by others or by themselves.**
- 6.I make students aware early in the course of the importance of being a skillful learner.**
- 7.I encourage students to use tools and skills that enhance their learning while also saving their time.**
- 8.I spell out a timeline for completing successive steps toward meeting the objectives.**

9.I encourage students to incorporate their own goals into the work of the course.

Conclusions

We learned. . .

1. Successful strategies in traditional classrooms can be successfully adapted to the online classroom with some major enhancements. Enhancements evolved around providing an interactive and “live” classroom.

2. Faculty must be knowledgeable, organized, creative in involving students, open to engaging students through enthusiasm and interesting work, and attentive to student needs.

3. Courses need to be clearly organized, enriched with real applications, and focused on students’ backgrounds and areas of interests.

4. Guidance must be prompt and constructive. Assignments must be regular and well-designed; textbooks must be well selected.

Third Phase of Study

This phase focused on assessment of student learning outcomes and the implementation of effective teaching practices as identified in the first two phases of the BOIP study. Secondary goal was to measure to what extent exemplary faculty were mindful of learning outcomes and course development.

Course Assessment Plans

- **Faculty were asked to develop a rubric of classroom assessment (based on Suskie 2004).**
- **Faculty identified core learning objectives, measured specific course level goals, selected appropriate strategies and tools, and established an assessment timeline.**

Reflective Journals

- **Faculty kept reflective journals and submitted them monthly for analysis by research team.**
- **Faculty comments and reflections covered several areas:**
 - **Faculty preparation**
 - **Class organization**
 - **Formal and informal assessments**
 - **Activities and assignments that might be used later in the course or in subsequent courses**

- **Usefulness of the assessment plan**
- **Usefulness of pre-test as an assessment tool**

Usefulness of journals:

- **Enabled an ongoing formative assessment process**
- **Showed how faculty mediated the online course by assessing strength, skills, weaknesses, and needs of students**
- **Showed how exemplary faculty reflect on ways to improve their teaching and incorporate new techniques and strategies**

Conclusions

We learned. . .

- **The utility of assessment plans for encouraging faculty to reflect on and improve their teaching**
- **Course interactivity, student satisfaction and engagement affected by the extent to which faculty plan for and link course assessment goals to varying activity formats and assessment measures.**