Research on Best Practices

Course Structure and Content

Set clear course goals.

The Teaching Goals Inventory, found on pages 13-24 of Angelo and Cross (1993), is "a simple, effective tool for identifying and clarifying…teaching goals." This inventory had the input of "nearly five thousand college teachers who took part in three separate TGI survey administrations." It has also been extensively field-tested. An online version is available from the Center for Teaching at the University of Iowa.

Design an effective syllabus.

McKeachie (1991) provides some practical tips for teaching and learning in the college classroom, including guidelines for creating a useful and informative syllabus. See also McKeachie, Pintrich, Lin, and Smith (1986) for practical teaching tips based on educational research.

Palloff and Pratt (1999) provide an extensive discussion effective practice with respect to online syllabi, examples of online syllabi, and guiding questions for syllabus preparation, in Chapter 7, "Building Foundations" (pp. 87-109) and Resource A (pp. 169-188).

Recognize that students may have different learning styles, and make an effort to match your teaching to multiple learning styles.

Grasha's (1996) work suggests that preferred learning style and preferred teaching style is only one part of the dynamic of effective instruction. Many other factors impact the outcomes, such as learner preparedness, motivation, and study habits. Grasha suggests that instructors may not be as effective as possible if they go too far beyond their preferred teaching style, and as such recommends instructors not try to affect styles that are not suited for them.

Pulsinelli and Roubie (2001) describe a virtual learning environment based on a diversity model developed at George Mason University for students with learning disabilities. Research suggests that serving a range of learning disabilities opens the potential for user-interface confusion. As such, diversity modeling can serve as a powerful design tool.

Design learning environments that support a variety of learning styles.

Martinez (2001) has documented some key design considerations for personalized learning on the web. Martinez makes the following suggestions:

> •"For transforming learners, design environments that are sophisticated, discovery-oriented, mentoring environments where learners who want to be assertive, challenged by complex problem solving situations, and able to self-manage learning and self-monitor progress can attain higher standard, long-term goals.

> •For performing learners, design environments that are project- or task-oriented, energizing, competitive, interactive (hands on) environments, which use coaching, practice, and feedback to encourage self-motivation, holistic thinking, problem solving, self-monitoring progress, and task sequencing, while minimizing the need for extra effort and difficult standards.

> •For conforming learners, design environments that are simple, scaffolded, structured, non-risk environments that use explicit, careful guidance. They should help individuals learn comfortably in an easy, step-wise fashion. These environments should also encourage learners to take assertive, challenging steps towards more independent, self-motivated achievement."

If teaching online, create course content pages so that they support web user reading techniques.

Jakob Nielsen has one of the classic web design columns. Nielsen (1997) recommends that pages be set up newspaper style with the conclusion stated first. He also advocates highlighting keywords, creating meaningful subheadings, using bulleted lists, and being terse. This article can be found online.

Give students significant control over navigation of course materials.

Ford and Chen (2000) conducted an empirical study of individual differences in hypermedia navigation and learning. Excerpts from the abstract: "From this and other research, there would appear to be considerable evidence that people with different cognitive styles display characteristically different learning strategies. However, the extent to which and the conditions under which such different strategies affect learning outcomes can be affected…However, when students are allowed more control over navigation in relatively nonlinear learning environments (including hypermedia), the evidence is less consistent, and a number of studies have reported no significant differences in learning outcomes despite learners displaying characteristic learning strategie...The present study also found no significant interactions between learning strategies displayed by learners of different cognitive style and learning outcomes."

Provide learners with some control over the sequence of learning activities.

Dillon and Gabbard (1998) conducted a review of research on hypermedia as an educational technology. They were interested in effects of variables such as learner comprehension, control and style. Hypermedia offers users more control over access and exploration than traditional formats (such as paper). Although the effects of increased control do not significantly affect low and middle performing students, there is some research that shows promising results for improving the learning of high performing students.

When using technologies, provide content in multiple media to support the formation of more robust mental models.

Kozma (1991) draws several conclusions about learning based on a literature review of learning with media. Two of the more important conclusions were:

> •The combined use of audio and visual representations "resulted in more recall than visual-only and audio-only presentations."

> •"..the bushier nature of representations derived from the visual symbol systems are better for building mental models of the situation than are representations based on audio-linguistic information."

Kozma also reviewed the literature on hypermedia up to 1991, pointing out many pros and cons of learning in this medium that are still relevant today (pp. 202-205).

In online environments, be aware of the effects of download time for varying multimedia file sizes.

A study by Davis and Hantula (2001) hypothesized that there would be increased student dissatisfaction with increasingly long download delays. The results pointed to a more complex state of affairs. The effects of download delay may be greater when the material is more complex. There may be a timeframe in which a delay is beneficial because users take the time to study the other material on the page more thoroughly. After a certain amount of time elapsed, users did stop studying. If graphics are highly pertinent, users will view them as suitable despite lengthy download delays.

Recognize that learners will approach the course from different perspectives.

Wilburg (1994-95) found that men and women approach technology differently for learning purposes. Findings include that men have a more random approach to technology, whereas women are more goal-oriented. Wilburg wrote that

men, "see a computer as a machine that extends their power and get excited about the computer itself, while woman (sic) approach the computer more relationally, seeking ways to use it to relate to other people" (p. 8).

In addition, Shuell and Farber (2001) found that undergraduate and graduate students' perceptions of technology were driven by their active engagement and personal characteristics. They wrote, "The data suggest that students' perceptions depend on the way technology is used in the course, on the students' learning preferences, and on students' gender. Those students actively engaged with the technology were more likely to perceive positive effects of technology as a learning tool, reflecting the importance of active learning" (p. 134).

Design activities that encourage "active" learning in which students are expected to participate.

A study by Zoller (1999) compared large and small chemistry classes at two different institutions in order to challenge the traditional approach to chemistry education in which the instructor covers material that will appear on an examination. This study applied an inquiry-oriented approach to class discussion requiring more active learning on the part of the students. The author concluded that an active learning approach to class discussions is "feasible and effective" (p. 593) even for large classes.

When using case studies, write interesting and effective cases.

Paraschos (1991) discusses the elements of good cases and bad cases in teaching. Written from a diplomacy perspective, this paper provides a very good description of the characteristics of a well-written and effective case. In this paper, a case also includes teaching notes about how to effectively moderate a case discussion. Their recommendations include the following:

- write good teaching notes that will help you teach the case to students

- keep your own analyses out of the case - leaving analysis up to the students

- keep personal opinions out of the case

- capture the human element

- hook the readers by making it interesting

- give attention to the structure, or "plot" of the case

- avoid sweeping generalizations and excessive detail.

Simmons (ND) provides a good introduction to using case studies in teaching. This article defines four phases in teaching a case and suggests six questions to use to structure a case discussion.

In addition, Barnes, Christensen, and Hansen (1994) have authored a classic book on case method in the Harvard School of Business.

Use problem-based learning to apply course concepts.

Sage and Torp (1997) demonstrated that student learning is greater with a problem-oriented approach compared to a fact-oriented approach. They also suggest that student motivation, development of critical thinking skills, and a deeper understanding of content are all improved using a problem-based learning approach.

Adequately prepare students for problem-based approaches to learning, and provide feedback to students during the process.

Oliver and Omari (2000) found that while students perceived valued and gained from learning in a collaborative, problem-based environment, many expressed a preference for a more conventional teacher-directed form of learning. The study's authors felt that merely participating in problem-based learning was not sufficient for student development of problem-solving skills. Rather, students needed guidance regarding the group and the problem-solving process.

According to the authors, "The development of these skills it would appear must come from some deliberate strategy aimed at helping students to reflect on their learning processes and through feedback which informs and encourages their progress" (p. 45).

When using problem-based learning, provide adequate structure for group work.

Oliver and Omari (2001) explored satisfaction and outcomes of 240 first-year students doing problem-based learning in a web-enhanced environment. Recommendations from this study include creation of stronger guidelines for group work, the need for reliable technology, and the need for teaching problem-solving and metacognitive skills to this population.

Provide appropriate individual and creative problem-solving opportunities.

For individual work, provide more alternative solutions. For group work, provide a common mental model that is appropriate to the task, and provide a more limited range of alternatives that the group can then evaluate and refine. Mumford, Feldman, Hein, and Nagao's (2001) study of individual and group creative problem solving performance involved undergraduates who were assigned randomly to work as individuals or in 3-person groups. Some individuals and groups received advanced training to provide them with a common mental model that may or may not have matched their problem. Some were given a survey that presented an increased number of alternative solutions to the problem. They found that:

> •Individuals did not outperform groups.

> •Shared mental models are important to groups because they support group coordination and effective exchange.

> •Groups "produce more workable, but not necessarily more original solutions to novel problems."

The study also found that individuals with a wider range of alternative solutions available to them performed better. Groups who received advanced training pertinent to their problem performed better. Also, groups with a limited number of high quality alternatives performed better.

Provide activities such as summarizing or generating questions that will encourage students to think critically and generate their own meaningful connections with the materials.

Radmacher and Latosi-Sawin (1995) found that students who used summary writing in one class performed 8% higher on than the mean score of a class without summary writing.

An article by King (1995) provides a model in which student questioning can be used within the curriculum. King's article provides an inquiry-based model for promoting critical thinking in psychology, and provides research findings to substantiate the model.

Insert questions, charts, and/or diagrams into text to help students better regulate their own comprehension or visualize a concept.

Richards and Denner (1979) conducted a review of the research on inserted questions as aids to reading text. They reviewed studies on type, placement, and processing of questions. Findings from several studies suggested that inserted questions can have a significant impact on reading comprehension and other outcomes. In addition, there is evidence that poor comprehenders may benefit more from inserted meaningful post-questions than good comprehenders.

Encourage students to use good learning strategies, such as re-reading, note-taking, distributing learning over time, and time management.

Weinstein and Mayer (1986) discuss the importance of several kinds of learning strategies, such as rehearsal strategies, elaboration strategies, organizational strategies, comprehension monitoring strategies, and affective/motivational strategies. They present research findings on the effectiveness of these strategies, as well as ways in which instructors can encourage the use of these strategies in their classes.

Encourage critical thinking by presenting students with tasks that require analysis, synthesis, and problem recognition, and problem solving, inference, and evaluation.

Kurfiss' (1988) review of the literature on critical thinking provides some recommendations for activities to promote critical thinking. Included are recommended activities that require students to analyze, synthesize, and recognize problems.

See also, Angelo's (1995) Classroom Assessment for Critical Thinking for additional information on problem solving, inference, and evaluation.

Provide adequate support for students so they can perform course activities successfully and efficiently.

Jones and Laffey (2001) conducted a study to identify the components that supported the transition of MBA students from classroom to online instruction. They found that the following issues impacted the ease of transition: perceived advantage, computability with tasks, complexity of tasks, training, observability of tasks, and institutional culture. When these elements conflicted with the goals for online learning, the adoption process slowed down; conversely, when these elements were in synch with online learning, they supported the process.

Provide frequent and prompt feedback to students.

Kolb's work (1982) identified providing learners with the opportunity to reflect upon feedback and trying again as a key component of the learning process.

Ramsden (1992) did work that is based on an Australian study in which learners consistently ranked feedback as the most important issue in teacher quality. In Ramsden's study, those teachers who gave prompt and meaningful feedback were perceived as better teachers by their students.

Provide opportunities for frequent interactions between yourself and your students.

A study by Zack (1995) found that the use of e-mail and computer conferencing resulted in the instructor being more accessible. As such, the students perceived the instructor as more responsive and committed to their learning.

Convey high (but reasonable) expectations of your students; be careful to hold the same expectations for all of the students in your course.

In a review of the research on teacher expectations, Good (1987) highlights the Brophy-Good model of teacher expectations, which describes how an expectation communication process might happen in the classroom. The model describes how differential expectations can lead to differential treatment of the students. This treatment tells students something about how they are expected to behave, and leads to a self-fulfilling prophecy which then reinforces the teacher's expectations. The differential treatment of high and low achievers has been well-documented in research. Examples include:

- •Waiting less time for lows to answer questions

- •Giving lows the answers or calling on someone else to provide the answer

- •Criticizing lows more often for failure

- •Failing to give feedback to the public responses of low achievers

- •Seating low achievers farther away from the teacher

Although much of the research in this area has been done in middle and secondary schools, there may be evidence to suggest a continuation of these findings into college teaching.

Observe copyright and fair use policies and guidelines.

Your institution will likely have its own resources and policies regarding copyright and fair use. Smith, Eddy, Richards, and Dixon (2000) conducted a multiple case study of ten Research I and II institutions and found that 90% of the respondents had centrally controlled distance education administration and related copyright and intellectual property polices.

Course Communication

Establish clear goals for classroom or virtual communication, and share these with your students.

McKeachie (1999) lists the following objectives that can be addressed with effective discussions:

•Help students learn to think in terms of the subject matter by giving them practice in thinking.

•Help students learn to evaluate the logic of, and evidence for, their own and others' positions.

•Give students opportunities to formulate applications of principles.

•Help students become aware of and formulate problems using information gained from readings or lectures.

•Use the resources of members of the group.

•Gain acceptance for information or theories counter to folklore or

 previous beliefs of students.

•Develop motivation for further learning.

•Get prompt feedback on how well objectives are being attained.

In Palloff and Pratt's (1999) Building Learning Communities in Cyberspace, Chapter 7 discusses establishing the foundations for an online learning community. They discuss the creation of goals and provide examples of syllabi for a variety of subject areas.

Incorporate electronic discussion forums into course design.

Students participating in a study by Karayan and Crowe (1997) were more likely to answer questions, think more before answering, develop positive relationships with their instructor and peers, and participate in class outside the normal workday as a result of participating in class electronic discussion forums.

Encourage peer-to-peer interaction between students.

Shuell and Farber's (2001) study of undergraduate and graduate students found that participation in electronic discussion forums increased learners' perceptions of the quality of interaction with their peers. The authors noted, "As students participated more fully with each other using more interactive forms of communication technology, their perceptions of overall learning and motivation increased as well" (p. 129).

Devise a plan for using conscious questioning to encourage, initiate, and guide student discussion.

An article by Wolf (1987) describes three attributes of questions: range, arc, and authenticity. The author defines several question types which relate to different level's in Bloom's taxonomy and discusses the use of an "arc of questions" to support inquiry. She recommends that the art of questioning be studied. She notes that many school environments are not conducive to the use of questioning and that it is very important for students themselves to have this skill.

Use cooperative learning techniques for small group learning activities.

Millis and Cottell (1998) authored Cooperative Learning for Higher Education Faculty, a book that provides a compelling argument for using cooperative learning techniques. It also describes the techniques and gives a plethora of examples. Finally, it provides a comprehensive literature review and bibliography. For a description, table of contents, and excerpts from the book, see the National Teaching & Learning Forum article.

Place students into small groups of 2-4 members (mixed gender and ability) for problem-solving and discussion-oriented activities.

Webb's (1985) chapter in Learning to Cooperate, Cooperating to Learn summarizes a body of research examining the specific interaction variables and sequences of behavior that predict achievement in small groups. Webb discusses non-specific interactions, peer tutoring, giving help, receiving help, and sequences of behavior. She also discusses predictors of interaction, such as ability, extroversion and introversion, intellectual achievement responsibility, group ability composition, and group gender composition. Webb summarizes by providing implications for the research.

Provide students with strategies for working in groups.

It is important to provide students with cooperative learning strategies when working in teams. A study by McDonald, Larson, Dansereau, and Spurlin (1985) on cooperative dyads found that exposure to a systematic cooperative learning strategy facilitated initial learning and also led to positive transfer on a subsequent individual learning task.

Use collaborative learning to support asynchronous discussion.

Hiltz, Coppola, Rotter, and Turoff. (2000) authored a report of a 3-year longitudinal study of 26 courses which showed that outcomes resulting from the use of collaborative learning techniques in asynchronous discussion are as good or better than that of traditional classes, and better than outcomes associated with students who worked alone.

For effective discussion teaching, encourage a partnership between the students and instructor, encourage the evolution of a learning community, form an alliance with students, and manage the content and process.

A text by Christensen (1991) provides premises and practices for discussion teaching. One chapter discusses each of the following four precepts in detail and provides examples.

> •A discussion class is a partnership between students and instructor.
>
> •A discussion class must evolve into a learning community.
>
> •Instructors form an alliance with students.
>
> •Instructors demonstrate the ability to manage content and process.

Use good listening skills to be sensitive to the messages being sent and to the multiple dimensions of what participants have to say, and to show respect for participants and their contributions. Create opportunities for participants to develop these skills as well.

One chapter (Leonard, 1991) in Christensen's Education for Judgment: The Artistry of Discussion Leadership describes a variety of good listening skills and the diagnosis and treatment of listening pathologies – both instructor and student. Finally, it deals with the all-important issue of how to develop a class environment that encourages listening that, in turn, supports meaningful discussion.

Use effective questioning, listening, and response to manage discussion.

Christensen (1991a) defines several question types that can be used to support different teaching goals. He also discusses the emotional dimension (tone, body language) and the level of abstraction of questions. He provides a list of what to listen for. Examples include student command of content, involvement, continuity of thought, use of value-laden language, and ability to listen to others. Response is the most complex of the three dimensions because it requires

multiple, simultaneous, on-the-spot decisions. In preparing for what to say following a student comment, Christensen describes a decision tree that supports class objectives. This part of the chapter is very helpful for instructors wanting to incorporate discussion into their classrooms.

Help students develop good class participation skills.

Hertenstein (1991) states that developing good participative skills is an important learning goal. She discusses three dimensions to follow for each student and for the class as a whole: content, process, and frequency. She advocates developing a method for tracking participation, and providing individual and class feedback at regular intervals.

Course Assessment

Match learning objectives with assessments.

Morgan and O'Reilly's Assessing Open and Distance Learners contains some useful tips for applying good assessment practices to teaching, especially in the online environment. See Chapter 5: "Designing Assessment Tasks" (pp. 46-62.). A sampling of the points made in this chapter:

> •Types of assessments should be appropriate for the course materials and desired course outcomes.
>
> •Use quantitative assessment when objective and numeric assessment is needed.
>
> •Use qualitative assessment when that kind of thinking and writing is needed.
>
> •For group projects, use both group and individual measures.

McKeachie (1999) also provides some practical strategies for assessing learning. See in particular, Chapter 7, "Testing and Assessing Learning: Assigning Grades is Not The Most Important Function" (pp. 85-110). This chapter contains sections on balancing specified objectives with various types of test items; test construction (describes the strengths and weaknesses of various question types), helping students learn to take tests, grading, helping students and yourself learn from the test, and other methods of assessing learning. Contains references to several studies in very specific areas of testing.

In Chapter 10 of Morgan and O'Reilly's text, they discuss developing assessment policies. (pp.93-97). The chapter encourages making students aware of student appeal procedures, assignment extensions and conditions for special consideration, and grading practices (turnaround time). It also explains plagiarism and the importance of resource citation.

Take precautions to limit the possibility of cheating.

See Chapter 8 in McKeachie (1999): What to do about cheating. (pp. 111-116) McKeachie suggests several ways to minimize student cheating:

> •Relieve pressure by providing multiple opportunities for students to demonstrate mastery of course goals.
>
> •Create a meaningful assessment that is not overly long.
>
> •Administer assessment in small group sections where students are known and the student sense of accountability may be greater.
>
> •Create randomized tests.

According to the Commission on Institutes of Higher Education (CIHE) (2000), high-stakes assessments such as exams should be administered in circumstances that include firm learner identification. If proctoring is used, there should be an established effective procedure for selecting proctors. Available online.

Frye (2000) wrote an article on preventing online learners from cheating. Although this article focuses on corporate training, the issues it raises about online testing are the same as those faced by many instructors. The article suggests the following solutions to cheating problems: online proctored exams, performance testing, daily computer-graded online quizzes, and spot checks. In addition, the article includes a discussion of biometric authentication, including thumbprint, voiceprint, and facial ID. Although these technologies are becoming more prevalent, the article concludes by mentioning that building motivation not to cheat into an online course can be the best means of deterrence.

Communicate assessment tasks clearly.

In Chapter 6 of Morgan and O'Reilly's (1999) text, they discuss communicating assessment tasks. In creating an assessment, provide a rationale, explain terms, offer suggestions for methods of approach, explain any conventions that govern the form of student response, use clear language, be terse, provide clearly defined marking criteria, and be available to answer questions and provide guidance when needed.

Use formative assessment to promote deeper learning; consider alternative forms of assessment such as portfolios.

Askham (1997) conducted a study utilizing ongoing portfolio assessment as a vehicle for formative feedback. The study also incorporated learning journals as a means for reflective learning. Regarding the value of ongoing feedback, the author noted, "Feedback generated progressively makes it much easier to respond to individual and collective problems and students are better placed to identify these" (p. 312). Using portfolio evaluation as the vehicle for formative feedback, the author wrote, "Although marking portfolios can be time consuming and may create additional problems of objectivity, these issues can be addressed by the careful structuring of material to be submitted" (p. 312).

Use self-assessments to improve learning and self-awareness.

Sluijsmans, Dochy, and Moerkerke (1998) conducted a meta review of 62 studies that explored the effectiveness of self-, peer-, and co-assessment. Here is what they concluded about self-assessment:

> Self-assessment is primarily used as formative assessment, allowing learners to reflect on their own progress. Generally, weaker students tended to overrate themselves, and good students tended to underrate themselves. Additionally, students who engaged in overt self-assessment during the learning process had a higher percentage of correct responses on exams than those who did not undergo self-assessment. The authors concluded, "Overall, it can be concluded that research reports positive findings concerning the use of self-assessment in educational practice. Students in higher education are well able to self-assess accurately and this ability improves with feedback and development over time. Moreover, students who engage in self-assessment tend to score higher on tests" (p. 300).

See also Chapter 4 in Morgan and O'Reilly (1999): "Online technologies in open and distance assessment" (pp. 33-42) and pp. 170-172 in the case studies section. Traditionally, self- and peer- assessments have not been used widely in distance education, but online technologies have made these types of assessment more feasible. Self-assessment is a valuable life skill and can be encouraged in lifelong learning.

Have students conduct peer-assessments (may be particularly effective when used in conjunction with group work).

As mentioned in the previous item, Sluijsmans, Dochy, and Moerkerke (1998)Morgan and O'Reilly (1999) conducted a meta review of 62 studies that explored the effectiveness of self-, peer-, and co-assessment. Here is what they concluded about peer-assessment:

> Peer-Assessment: defining it as groups of individuals who give each other feedback, the authors wrote, "Peer assessment is not only a grading procedure, but also part of a learning process in which skills are developed. Peer assessment can be seen as a part of the self-assessment process and serves to inform self-assessment" (p.300).

They described 3 forms of peer-assessment:

>1. Peer Ranking - each member ranks the others contributions from best to worst

>2. Peer Nomination - members are rated on particular characteristics

>3. Peer Rating - similar to above, but ratings are completed along multiple characteristics

In Chapter 4 of Morgan and O'Reilly (1999), they argue that peer assessment is a valuable skill as well as a contributor to motivation, group effort, and community building. With new online technologies for tracking assessments, peer assessment may be a more do-able part of class activities.

When conducting performance assessments, take into account the role of feedback in short-term versus long-term retention.

Schroth (1997) conducted a study on the effects of frequency of feedback on transfer in concept identification. Findings reveal that although lowering the percentage of feedback trials slowed concept attainment, it facilitated transfer on all transfer tasks. In general, the fewer the number of feedback trials subjects received, the greater the amount of transfer. Results are consistent with other studies that suggest that conditions that make it more difficult for students to initially learn a task may have positive benefits for transfer. These results are in line with previous research demonstrating that "conditions that make it more difficult for subjects in the acquisition phase of a learning task have positive benefits for transfer." Subjects who received less feedback had slower concept attainment but higher transfer rate. "In general, the fewer the number of feedback trials subjects received, the greater the amount of transfer." The hypothesis is that greater feedback at the time of knowledge acquisition narrows the focus and may encourage students to use memory rather than higher levels of thinking. This enables a better outcome at the time of knowledge acquisition. Less feedback at the time of knowledge acquisition may encourage focus on concepts and generalities, enabling them to better apply their learning in learning transfer situations.

Evaluate your assessment practices.

Morgan and O'Reilly's Chapter 11: "Evaluating Your Assessment Practices" (pp. 98-102) lists the following areas to examine:

>•Appropriateness of assessment items within a subject (examples: alignment with objectives, validity, authenticity, frequency, size, diversity)

>•Student response (student perception, motivation, meaningful demonstration of learning)

>•Nature and quality of feedback provided and its contribution to learning

>•Nature and quality of support (tutoring; answering questions)

It also points out that evaluation is now thought to have to do with satisfaction of student goals that are increasingly diverse, particularly given the diversity of the online learning population.

Conduct a mid-semester and/or end-of-semester course evaluation to collect feedback on the workings of the course.

Marsh (1984) provides an overview of findings and research designs used to study students' evaluations of teaching effectiveness. Marsh concludes that class-average ratings are:

>•Multidimensional

>•Reliable and stable

>•Primarily a function of the instructor who teaches the course rather than the course being taught

>•Relatively valid against a variety of indicators of effective teaching

• Seen to be useful by faculty as feedback about their teaching

• Seen to be useful by students for course selection

• Seen to be useful by administrators for use in personnel decisions

Marsh also examines the implications of these findings and provides possible directions for future research in this area.

Select appropriate items for your mid-semester or end-of-the semester course evaluation.

What kind of items should be included on a course evaluation? Shatz and Best (1986) conducted a study to determine which items on a course evaluation were considered to be most important by faculty and students. They found that, when asked to rate importance of items from a large pool, students and faculty had substantial agreement. A list of items with their rankings is presented, along with implications for interpreting evaluations.

If you administer a course evaluation, consider answering the questions yourself and comparing them with the responses of students.

You may have wondered whether students' ratings of the course and your teaching are accurate. Drews, Burroughs, and Nokovich (1987) found that, indeed, faculty self-ratings are significantly correlated with student ratings. Specifically, they found consistency in the areas of material covered, instructor performance, and overall impressions of the success of the class.