

## Instructional Strategies for Distance Education: Research Based Examples

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Friedman and Fisher's (1998) *Handbook on Effective Instructional Strategies: Evidence for Decision-Making* made 14 evidenced-based teaching generalizations, built on research in face-to-face settings. This paper looks at “how” these 14 instructional strategies are incorporated into distance learning environments by using benchmarks explored by Friedman and Fisher.

Instructional strategies are those tactics used by the instructor to promote learning. Friedman and Fisher’s classroom based findings support the effectiveness of the identified instructional strategies in improving student learning. The 14 strategies are generalizable across “academic disciplines, types of students, and educational settings” (xvii).

Literature reviews (Abrami, 2001; King and Weber, 2001) demonstrated many instructional styles or strategies used in the online environment. However, few studies examine the micro level of instructional strategies as defined by Friedman and Fisher and fewer still that compare their effectiveness when used in the distance classroom, especially the online environment. An observational study was conducted to analyze whether effective instructional strategies found in the face-to-face environment could be identified in the distance learning environment. This study was conducted over two years with data extracted from observations recorded in student papers, coded and aggregated to identify if Friedman and Fisher's strategies could be found and what variations of the strategies might exist. For this paper, we are reporting instructional strategies in the online environment. They are shown in Table 1 with specific tactics and examples following each instructional strategy noted in the text below.

Table 1. *Strategy Categories and 14 Instructional Strategies from M.I. Friedman and S.P. Fisher (1998).*

Process strategies to enhance students’ learning and adaptation. Providing:	Reminders Transfer of Learning Instructions Teamwork Instructions
Teaching strategies to increase students’ learning. Increase students’ learning by:	Taking student readiness into account Defining instructional expectations Providing effective evaluation and remediation Providing contiguity Utilizing repetition effectively Clarifying communication Reducing student/teacher ratio Providing subject matter unifiers
Strategies to manage the classroom by use of appropriate time dimension:	Providing ample learning time Keeping students on task

(Note: some of the tactics and examples below have been condensed and consolidated for space reasons.)

*Providing Reminders Strategy*–“Achievement of learning objectives is enhanced when reminders are used to cue the recall of information needed to perform assigned tasks” (p. 294). In the online setting:

Mnemonic devices used; highlighted words represented terms in glossary or were links to maps or examples. Examples used that illustrated application of learning to the real world.  
Weekly audiovisual updates with PowerPoint and e-mail

*Providing Transfer of Learning Instruction* “Achievement of learning objectives is enhanced when students are taught beforehand the knowledge and skills needed to perform assigned tasks and how to determine when learned knowledge and skills can be used to perform . . . tasks” (p. 295). In online settings:

- ❖ Assignments given in “building block” format. Modules are related to previous modules and drawn from previous knowledge. Directed to additional or previous material to problem solve.
- ❖ Students describe in discussion threads how current learning is relevant in their own lives.
- ❖ Project sheets direct students to learn an objective, and then apply to real world situations.

*Providing Teamwork Instruction Strategy-* “Achievement of learning objectives is enhanced when students are taught to perform complementary tasks as a team in pursuit of the objective” (p. 295). In the online setting:

- ❖ Encourage collaboration and discussion; refer to responses; synthesize responses; provide information; offer insight; provide additional input and provide opposite perspective from participants and ask them to think about and redirect response.
- ❖ Threaded discussion: Continual collaborative feedback enhances active learning socially, not competitively; prevents isolation of student. Assign person to lead and to start activity.
- ❖ Providing tools for groups to give and receive constructive feedback including instructions to do so and examples of good feedback. Include FAQ that gives students answers to what to do when the group isn’t working as a group. Small groups established with 5-10 students as virtual classes within the larger class for discussion and a higher level of participation.
- ❖ Study groups formed in response to student panic after first unit exam (statistics).
- ❖ Groups of 4; points given for introductions in group room; grades for chapters are given as groups not individually; brainstorming within group –one member reports back for group.

*Taking Student Readiness into Account-* “Achievement of learning objectives is enhanced when students possess the readiness capabilities to achieve learning objectives” (p. 293). In an online setting:

- ❖ Course orientation quiz covering course requirements. First lesson reviewed basic concepts. Students are introduced first to concepts of distance learning as a prelude to course content.
- ❖ From welcome screen students move to syllabus. The acceptance of the syllabus document is an assigned requirement, which confirms students understand expectations.
- ❖ Students wrote a personal history paper that was content related at very beginning of class.
- ❖ Division of material into units with each providing prerequisite skills for subsequent skills.
- ❖ Program has step-by-step approach moving from simplest concepts to most complicated.

*Defining Instructional Expectation:* “Achievement of learning objectives is enhanced when prior to instruction (1) learning objectives are derived for students, (2) procedures to be used in the performance of tasks to achieve the objectives are identified, and (3) student outcomes designating achievement of the objectives are defined” (p. 293). In an online environment:

- ❖ Initial face-to-face or videoconference meeting. Expectations are restated in e-mail to the student.
- ❖ Syllabus provided grading scale, performance expectations, course outline, and focused toward learning objectives. Define objectives based on ABCD=audience (the students), behavior (learning task/performance), condition (how to learn the objectives), and degree (performance criteria). Detailed explanation of how web course will work.
- ❖ Percentages assigned to group participation, individual participation, and projects helped to define what was required to achieve course goals. Performance criteria are matched with checklists provided throughout the course to ensure students were meeting expectations.
- ❖ Getting-started section to articulate structure of course. Examples of work/lessons as guideline.
- ❖ Classroom profile section provides listing of completed activities. Step-by-step instructions specifying what procedures students were to follow within the course.
- ❖ Discussion is considered a key course requirement; requirement for 350-500 word essay response to instructor’s questions.
- ❖ Definition from course catalog and then teacher’s definition of course provided...using own words. Prerequisites listed to give student a “sense” of being qualified.

*Providing Effective Evaluation and Remediation:* “Achievement of learning objectives is enhanced when appropriate remediation is provided: (1) evaluation procedures and remedial tasks are formulated when task sequences are planned, (2) student task performance is frequently evaluated, (3) feedback on evaluation is given to students without delay, and (4) incorrect performance is immediately remediated, based on evaluation results” (p. 293). In an online environment:

- ❖ Grade book is included that may be accessed at anytime.
- ❖ Pre-test, post-test, mid-quarter, and final exam testing on objectives to ensure students learn what they need to learn. Feedback given as students perform exercises and practice sets. Self-tests with immediate feedback. Unit projects email to instructor with 1-3 day turn around for grading.
- ❖ Continual feedback throughout the course reinforces expectations.
- ❖ Teacher marks student responses and student redirected if material not understood. Students allowed to redo notebook and unit projects to improve grades.
- ❖ Positive feedback on well-done assignments and suggestions for improvement on others.
- ❖ After each lesson give quiz of 5-7 questions. May retake quizzes. Immediate feedback with comments on incorrect answers. Students may use threaded discussions to discuss quizzes.
- ❖ Contact instructor-email provided; also participates in threaded discussions.

*Providing Contiguity:* “Achievement of learning objectives is enhanced when events students are to associate are presented to them close together in time and space” (p. 294). In the online environment:

- ❖ Posting assignments for other students to comment on before submitting to instructor; substantive-useful feedback from instructor before next learning objective.
- ❖ Material is organized according to subject-matter topic and assignments are grouped by subject-matter topic. Course material is structured so that the assignments build upon each other.
- ❖ Lessons presented sequentially utilizing information from previous lessons.
- ❖ Assignments divided into small manageable amounts of material with concepts building on each other; students began by reading or researching about concept followed by activity or assignment.

*Utilizing Repetition Effectively:* “Achievement of learning objectives is enhanced when there is repetition in instruction and tasks students are assigned to perform” (p. 294). In the online setting:

- ❖ Vary assignments within the same topic to enhance deep learning. No single explanation is clear to all students. Final exams are an accumulation of quiz and test questions.
- ❖ Students discussing learning of activities through discussion threads (even though some of the comments may be repetition) helps to provide repetition of information for deeper learning.
- ❖ Important information repeated several times and in several locations.
- ❖ Varying activities to reinforce learning followed reading; graphics and pictures repeat concepts.
- ❖ Test questions on final were from earlier assignments.
- ❖ Units are broken down into lessons. Summary ties all together at end of unit.

*Clarifying Communication-*“Achievement of learning objectives is enhanced when information on objectives, tasks, and evaluations is clearly communicated to students” (p. 294). In the online setting:

- ❖ Constant direction to resources. Information provided for technical support.
- ❖ Multimedia used provides stimulation to participation and engage different learning styles.
- ❖ Syllabus-succinct and directive; expectations-reading studying and writing.
- ❖ Format of class including quiz schedule, projects, attendance policy, supplemental material to lecture, video presentations, access to college library, requirements for communications (email and website discussion board); office hours and encouragement to communicate.
- ❖ Thorough outline of class schedule; include student names that lead discussions.
- ❖ Grouping tasks together for each assignment and specifying how each assignment related to different learning objectives. Familiar items selected to demonstrate concepts.
- ❖ Clarified with e-mail, discussion area and on several web pages.
- ❖ Videotaped lectures in adjunct to online course; weekly audiovisual updates with PowerPoint and e-mail. Instructor takes an active role in threaded discussions; frequent clarifying questions to eliminate confusion and encourage participation.
- ❖ Course orientation quiz covering course requirements and stressing the contact information for the instructor.

After quizzes instructor available by phone.

- ❖ Study Guide defines procedures step by step and encourages students to contact instructor to verify understanding; information and project sheets are clearly written with precise instructions.
- ❖ Re-clarifying assignments and providing resources within the course for additional clarification.
- ❖ Journal writing was used to relate content to students' experiences. Numerous graphics and links to illustrate concepts; observations, research, demonstration of concepts.

*Reducing Student/Teacher Ratio:* "Achievement of learning objectives is enhanced when there is a lower student-to-teacher ratio in teaching situations" (p. 294). In the online environment:

- ❖ Ratio for this online course is typically 11:1, however, this evaluation period was 4:1; and still team-taught. Automation of grading quizzes gives instructor more free time.
- ❖ Interaction done individually without known numbers in class. Student has no knowledge of how many students in class. Ratio of 6:1 allowed for individuation of instruction.

*Providing Subject Matter Unifiers:* "Achievement of learning objectives is enhanced when a scheme is used to highlight parts/whole relationships in the subject matter students is assigned to learn" (p. 294). In the online environment:

- ❖ Models and diagrams are used and developed by students; problem based/knowledge based environment to create higher level of thinking.
- ❖ Rich in research, design and format –related links, metaphors, recommended readings.

*Providing Ample Learning Time:* "Achievement of learning objectives is enhanced when students are given ample learning time to perform tasks" (p. 295). In the online setting:

- ❖ Optional extra credit quizzes are to be done during the assignment that is scheduled for that timeframe. Re-dos on papers were encouraged.
- ❖ Course was extended to a 10-month period because it was a writing course.
- ❖ Students are given one year from registration date to complete class. Self paced class.
- ❖ A major question is posted on one day of the week and must be answered by noon Mondays.
- ❖ Assignments and tasks were posted at the beginning of the course, as were due dates.

*Keeping Students on Task:* "Achievement of learning objectives is enhanced when students spend more time attending to tasks formulated to enable them to achieve the learning objective" (p. 295). In the online environment:

- ❖ Clarifying expectations and timelines in advance help students focus; reminders; encouraging students work ahead.
- ❖ Assignments were specifically related to the required reading and goals/outcomes of the course-no "busy work". Weekly agenda with list of assignments, instructional activities, and evaluation; all information is in order and on the web.
- ❖ Hyperlinks to additional resources so time is used efficiently; future lessons not available to prevent working ahead and distraction.
- ❖ Tasks are performed in the field and then reported in to Web site. Teacher is not with them during field tasks. Tasks had to meet a timeline.

## **Implications and Conclusions**

In reviewing over 50 online courses, we determined that all 14 instructional strategies were being used. We feel this reinforces that "good teaching is good teaching" and that online teachers exhibit the ability to use instructional strategies identified as successful in face-to-face teaching. We would also note that our online instructional strategy research appears to link to and reinforce other teaching and learning theories and applications (APA, 1997; Chickering, et al., 1987, 1991, 1996; Sattler-Weber, Hunt & King, 2002). We also note that three strategies identified here, "Defining Instructional Expectations," "Clarifying Communication," and "Evaluation and Remediation," may be the most effective of the 14 strategies, or may be the most easily adapted to online teaching as evidenced by the number of strategies observed.

Instructional strategies may be seen as analogous to what is found in the body that rejuvenates cellular activity, DNA, often referred to as the "essence of life." Like DNA, instructional strategies are responsible for the enormous possibilities for variability at the micro level—the "essence of learning." Used in the online environment, the instructional strategies are energizers of the learning experience.

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instructional strategies are utilized and operationalized will differ when the characteristics and capacities of technology in the online environment are analyzed. Principles and practices are the invisible threads of interrelated actions and teaching theory that make up effective strategies. In building an instructional paradigm, teaching in the online environment must be both purposeful and mindful of the interrelatedness of principles and practices. While these 14 strategies are the “DNA” of good teaching, the applications are everyday activities most teachers commonly use. We believe that we can show that these strategies are effective in the distance education environment as well as the face-to-face setting.

### Reference

(A full bibliography is available upon request)

Friedman, M.I., & Fisher, S. P. (1998). *Handbook on effective instructional strategies: Evidence for decision-making*. Institute for Evidence-Based Decision-Making in Education, Inc: Columbia, SC.

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