The Ten Categories of Instructional Design: Long Term Memory Design Methods

The goal of an instructor is to achieve instructional objectives effectively and successfully with the learners. The instructional methods, if used successfully, aid the learner to internalizing the information, and storing that information for future use. Learning is accomplished when information is successfully transferred from the short term memory to the long term memory. If information is delivered effectively, applied outside of the classroom environment, and satisfies meaning to the learner, it will reside in the long term memory. The learner will retain the information since it can be applied to his/her environment. If not, then the information most probably will be lost after temporarily visiting the short term memory.

Instructional design methods are techniques and procedures an instructor uses to promote learning. There are ten methods listed by Heinich, Molenda, Russell, & Smaldino (2002). These are: Presentation, Demonstration, Discussion, Drill-and-Practice, Tutorial, Cooperative Learning, Gaming, Simulation, Discovery, and Problem Solving. Any of these methods can be used with different media and are not limited to one or another.

Presentation

The presentation method constitutes a one-way communication from a particular source to the learners. The source can be the instructor, a textbook, a videotape, audiotape or other medium. This method does not employ feedback, responses, or interaction between the source of information and the learners. An instructor giving a lecture to students, or presenting a PowerPoint, video or audio presentation would be using the method of presentation. This method can be effective for learning when the learners are sufficiently motivated to acquiring the information for its rich meaning.

In my Public Speaking course, I would use the presentation method when playing a videotape of a student’s speech. During the presentation, students would view the videotape and no interaction or feedback would occur simultaneously.

Demonstration

The demonstration method presents a credible example of what is to be learned. Unlike the presentation method, the demonstration method allows for interaction between the instructor and the learners. The videotape of a student speech, if paused at predetermined intervals, not only serves to present specific skills but also to promote discussion and demonstrate the skills and performance utilized during the student’s speech. Through interaction, comments, feedback, questions, and answers, certain proficiencies are highlighted, communicated, and learned.

The demonstration method is used frequently in all my classes. In my Expository Writing class, I teach both MLA and APA to my students. After presenting basic criteria for either MLA or APA, I project a blank Word document on the screen. Through interaction with the students, we develop a formatted document together. Through demonstration, students learn how to set up the header, the title page, the reference or works cited page, parenthetical citations, block quotations, and other formatting specifics. During the demonstration, discussion, questions and answers, interaction, and feedback contribute to the learning experience.
Discussion

Through discussion before the presentation of a concept, an instructor can assess the students’ knowledge on the subject, set the mood, and raise the level of interest and consciousness by emphasizing the value of a concept and relating the concept to the students’ environments. Discussion where students exchange ideas, opinions, and perspectives related to the subject help develop a collaborative atmosphere. Discussion prior to presentation stimulates students’ interest, and provides meaning.

Discussion is also effective after the presentation of a concept. Through discussion after viewing a student speech, certain features of the speech are highlighted, reviewed, and critiqued. Through discussion, students communicate the positive and negative features of the speech such as the use of eye contact, poise, voice projection, identification with the audience, and so on.

Drill-and-Practice

This instructional method uses practice exercises after learning a particular subject. During this method, feedback is provided in order to correct errors and reinforce positive responses.

Since the majority of my students are native Spanish speakers, they frequently mispronounce words. I write habitually mispronounced words on the board (such as government, February, library, picture, secretary, nuclear, etc.), pronounce the word correctly, and have students repeat the word in its correct pronunciation. Through drill-and-practice, I ask students individually to pronounce the words and either correct or reinforce their responses. Through drill-and-practice, students learn the correct pronunciation.

In my Expository Writing class, I project grammatically incorrect sentences on a white board. Through discussion and interaction, students correct the grammatical mistakes and form the correct sentences. As they correct the sentence, I correct the mistakes on the white board with a marker. After completing the collaborative exercise, I erase the white board and give the students a hand-out of the same grammatically incorrect sentences. Students individually correct the sentences. Discussion follows the exercise where students then compare their answers, correct mistakes, and refine their writing skills.

Tutorial

The tutorial method is more individualized and usually performed one on one. Here, the subject matter is communicated, questions are presented, answers are evaluated, feedback is provided, and practice ensues until learning is accomplished. This method is especially useful since it approaches the individual learner’s deficiencies and aids in remedying them.

I use this method when students visit me with their speech outlines, or essay rough drafts. After reviewing the student’s work, I ask them specific questions related to their task, point out inaccuracies, and have the students respond to my questions, expand on the task, and correct their mistakes.

Cooperative Learning

With cooperative learning, students learn together through teamwork. The idea is that students who learn to work in teams are more able to transfer that competency to the work environment. Through cooperative learning, competition is reduced and cooperation is reinforced.
Heinich, Molenda, Russell & Smaldino (2002) argued that competition “is contrary to societal requirements of cooperation in life and in most on-the-job situations” (p. 18). I disagree partly with this statement. Cooperation is beneficial in all job situations, but competition exists at all levels of society. Reducing the opportunity of acquiring competitive skills in the classroom can disadvantage students immensely. One’s ability to compete many times determines one’s success in life. Competition is an active part of daily life. Schools must promote competition and develop competitive skills in the students. If students learn only through collaboration, what will happen if no one is around to collaborate with them? Will it be more difficult for them to learn, since they have only learned from collaborating with others?

Cooperative learning is an effective instructional method as long as it is not over employed. My classrooms consist of a total of 7 groups composed of 4 to 5 students. During the first days of class, I have students sign up to a group of their choice. Through their group peers, students can obtain extra course related information, notes, and reinforcement.

In my Expository Writing class, students review their peer’s various rough drafts. Each member of the group reads the draft, then notes questions, errors and recommendations on the paper for the writer. Though this collaboration, the writer can improve his/her paper and correct or clarify any defects. This type of peer critique is beneficial since the student learns from his/her peers, and cooperates in promoting their improvement.

In my Public Speaking class, I give students the option of preparing a videotaped commercial for their Persuasive speeches. Students may collaborate together to create an imaginary product, develop a script for promoting the product, produce a videotape of the commercial, and present the videotape to the classroom. The commercial is optional, those students who choose to present their persuasive speech individually, in front of the audience, and on a topic of their choice are able to do so.

**Gaming**

Through gaming, the learners follow a prearranged set of rules to accomplish an objective. Gaming is an effective method in that it challenges and motivates the learner to solve a problem through applying the knowledge learned in order to achieve reinforcement.

Gaming can be used as competition between individuals or groups. The most correct answers produced by an individual or group would determine the winning team. This is especially useful when teaching terminology, or drilling before a quiz or exam. Through motivation and competition, learning is achieved.

**Simulation**

This method mirrors a real-life situation within the classroom. Simulation permits the learner to perform and practice in a lifelike replication of a skill without being exposed to the dangers and risks it might pose in reality. Role playing is frequently used in the simulation method.

For my students Informative speeches, some chose to simulate and role-play certain professions. For example, one group chose to give their Informative speech on alcohol. The first speaker role played a bartender. He informed the audience on how to prepare specific mixed drinks with the ingredients, their measurements, and background history. The next speaker posed as a Medical Doctor and informed the audience on the effects of alcohol on certain organs of the body. The following speaker posed as a Psychiatrist and explained the psychological effects of alcohol on the brain system. The last speaker posed as a policeman. He presented the state’s laws...
on drinking and driving, pointed out the pubs located in the town, and the ordinances related to the town’s policies on drinking.

Discovery

This method promotes inquiry, observation, and explanation in order to discover principles related to a subject. Students many times have trouble selecting a topic to concentrate on when preparing an essay or a speech. They have to follow certain specific criteria but need to formulate a concrete and tangible focus. Through discovery, students brainstorm amongst themselves and with the instructor in order to explore ideas and discover new approaches.

After viewing a student speech, students participate in applying principles learned in class to the actual speech. Here, they discover solid examples for the concepts learned. This method allows students to identify the concept and discover concrete examples that exemplify the concept.

When students have to decide on a topic for a certain type of speech, we go through a collaborative exercise where we chart common interests related to places, people, activities, objects, events, goals, values, problems, and campus related concerns. All these areas are listed on the board, and students contribute with subtopics that interest them and they can relate to. This exercise helps students discover and focus the topics for their speeches.

After selecting their particular topic, students use the computer to search and explore more in depth coverage of the information. This also contributes to the discovery method.

Problem solving

This method is similar to Simulation in that students are provided with a lifelike situation. Unlike simulation though, students are presented with a realistic problem that they must attempt to solve through collaboration, research, and materials provided by the instructor ranging from text to videotaped presentations. The students must use their learned skills in critical thinking, inquiry, and research to assist in finding a viable solution to the problem.

As an example, I received an email from a student at the University of Iowa (of all places!) who happened upon my professional web site while searching for universities in Puerto Rico. He explained that he was graduating this year, but wanted to study a year abroad at a university in Puerto Rico before he started medical school. The young man asked me for information related to the university, courses in science that were offered, whether courses were given in English or Spanish, and general information related to living in Puerto Rico.

After receiving the consent of the Iowa U student, I gave my students the assignment of responding to the young man’s inquiries and presenting the university in the most favorable light. So, the problem they had to solve was to find the answers to the student’s questions through discovery, and write a grammatically correct and orthographically organized email in English to the student that not only answered his questions but also promoted the university. The assignment was a total success! All 60 students individually responded to the student, then posted their emails as Discussions on WebCT, where they responded to each others’ postings with feedback and constructive criticism.

Instructional methods can be very useful in long term memory acquisition and retention of knowledge. As instructors, our job is to relate concepts that can be utilized and applied in the real world. Through creativity and imagination, instructional methods can achieve that goal.
Just as one medium does not determine the success of learning, one method does not as well. Through the resourcefulness of the instructor, the concrete application of concepts, the motivation generated through the method, the promotion of discussion, the use of practice and repetition, the individualized attention, the association with reality, and the challenge of discovering, learners will want to learn and grow in order to succeed and compete in life.
References


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