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# ENCOURAGING ACTIVE LEARNING

BY SHIRLEY ANN FREED

**W**hat is active teaching and learning? “Active learning” has become such an educational buzzword that it has almost lost its meaning. However, by using an unexpected area—wrestling—we can gain insights into the differences between active and passive learning. At a wrestling match, one wrestler commonly receives a penalty for “passivity.” The penalty is assessed not by point deduction or “sitting out” the game, as is often the case in sports, but rather by the wrestler’s being forced into a position where “activity” is imperative to continue the game. The “passive” player kneels on all fours; when the whistle blows, he immediately must be “active” to resist the moves of his opponent.

Just so, then, active teaching is getting students into positions they cannot get out of unless they think, unless they are actively involved and expend energy in the academic experience.

In defining active learning, Chickering and Gamson suggest:

*Learning is not a spectator sport. Students do not learn much just by sitting in class listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.<sup>1</sup>*

In contrast, passive learning occurs when teachers explain and tell (the “now I told you; now you know” paradigm) and students primarily listen. In these settings, we often hear students ask, “Do I need to learn this? Will it be on the test? Tell me what I need to know.” The student’s role is to be the recipient of information, while the teacher is the “knower,” or giver of information. This type of learning inspires comments such as this: “The information passed from the teacher’s notebook to the students’ notes without passing through the heads of either.”

In his landmark study, Goodlad found that “three categories of student activity marked by passivity—written work, listening, and preparing for assignments—dominate in the likelihood of their occurring at any given time at all three levels of schooling” (elementary, junior high, and senior high).<sup>2</sup> He described much of the writing as answering questions in workbooks or doing fill-in-the-blank types of activities. Contrast this method with the writing described by Chickering and Gamson, where students write about their experiences and tell what they are learning.<sup>3</sup>

My students’ journal entries vividly portray the difference between passive and active learning. One student wrote, “I realize I am not a very active learner. I do only what I am taught to do.” Another wrote, “I am used to being a passive learner—it’s easy because you can check out in class and you don’t have to think! It’s hard to become an active learner. I don’t think I’ve been taught this way before.”

## Empty Vessels?

To understand more fully these contrasting ways of teaching and learning, let's look at some assumptions behind each method. Passive teaching assumes that students are "empty vessels," or "blank slates." Active teaching assumes that students are meaning-makers, active constructors of their own knowledge; that they bring to each learning experience a reservoir of information from which they will draw as they try to understand. The active teacher will seek to find what students know, and add to it.

Passive teaching assumes that students are primarily auditory and therefore learn best by listening. Active teaching assumes that students learn in a variety of ways, including visual and tactile-kinesthetic methods, and that teachers therefore need to use many different teaching strategies. In surveying a number of different groups of people using informal learning-style assessments, the author has yet to find a group in which more individuals have auditory strengths than visual or tactile-kinesthetic. Yet we continue to use lecturing and explaining as the dominant teaching method. When Goodlad surveyed students' classroom activities, he found that listening was the activity in which they were most likely to be engaged at the junior and senior high school levels and the second most frequent activity in elementary schools (preceded by writing).<sup>4</sup> Little has changed in the 10 years since his study. Check your own classroom by setting a timer to go off every half hour and noting what the students are doing each time the timer sounds.

Various studies suggest that listening is not an efficient form of learning. In studying the level of concentration by medical students, a population that presumably is highly motivated, Stuart and Rutherford found that it initially rose sharply, reaching a maximum at 10 to 15 minutes, but fell off steadily thereafter.<sup>5</sup>

Another assumption that separates active and passive learning and teaching

relates to the nature of knowledge. What is knowledge? Is it a set of facts to be acquired? Or is it something that an individual makes sense of personally? Is there a difference between information and knowledge? Do we care what level of learning our students achieve? In other words, are we satisfied with learning that consists mostly of rote memorization? (This may be a necessary and occasionally useful method, but is it all we want stu-

dents to take from our classrooms?)

The key, then, to active learning is the role played by prior experiences in the learning process. Ausubel said, "If I had to reduce all of educational psychology to just one principle I would say this: The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly."<sup>6</sup> Ellen White, in commenting on Jesus' education, suggests that it was acquired

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from Heaven-appointed sources—one of those being the experiences of life.<sup>7</sup> In Britain, the Education for Capability movement asserts that in active learning, students "learn through the practical activity of doing and through applying to their own experiences their knowledge and skills."<sup>8</sup>

## How Students Learn

How do students learn? Garfield, in his study of peak performers, came to believe that human beings are meaning-seeking organisms.<sup>9</sup> We were created with an innate desire to make sense of our environment. Is it possible that education, as it is typically practiced, often reduces people to conformists rather than seekers for meaning? As a result, they may stop trying to make sense of what we teach, and strive only to regurgitate it to get the cov-

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eted grade. To help our students become peak performers, we must nourish in them the desire to search for meaningful connections and authentic explanations of why things are the way they are.

As teachers, it is our task to educate, which comes from the Latin root *educare*, meaning “to bring out.” What is it that we “bring out”? Our students’ past experiences. We can understand this better by using the analogy of a computer. We help students to find the disk and then the place on the disk where they stored information about the topic we plan to present. As they talk about what they already know, they are validated as learners and meaning-makers and are motivated to learn more. The file is open and ready to store more information. What we say is tested against what is already stored there. New connections are made as students discuss and comprehend on a deeper level. Misconceptions, misinformation, and illogical arguments give way to meaningful understanding. The file is changed and saved in its altered form. In this case, we have helped create the magic of “active learning” simply by listening to students and allowing them to listen to one another.

Following are five specific techniques that will help you discover what students know. These techniques can be easily

adapted for use with all levels—elementary through college.

#### **Inductive Reasoning: List, Group, Label**

Hilda Taba popularized an inductive approach that can be used to access students’ prior knowledge before teaching any topic.<sup>10</sup> The steps are as follows:

1. The teacher suggests a topic.
2. Students brainstorm words associated with the topic. These can be written on index cards or on the chalkboard for

younger grades.

3. Students group items according to some basis of similarity. They decide what goes together.

4. Students name the groups.

5. They then look for relationships between groups. (To facilitate this, the teacher might ask, “Do you see any similarities, cause/effect, etc?”)

6. Students look for applications. (“What would happen if . . .?” “Why would this happen?”)

This activity helps the teacher to understand what the students know, as well as to identify misconceptions that they may have. The process of categorization forces students to clarify their thinking and to share their understanding with those who don’t “know”—thus working through some of their differences before teaching occurs.

#### **Think - Pair - Share**

Frank Lyman<sup>11</sup> introduced this simple technique, in which the instructor first poses a question. It could be as simple as, “What do you know about \_\_\_\_\_?” Or it may demand analysis, evaluation, or synthesis. Three steps follow after the question is posed.

1. *Think*: Students are given a minute or two to think through an appropriate response.
2. *Pair*: Students are assigned or

Figure 1  
**KNOW • WANT TO KNOW • LEARNED (K-W-L)**

KWL \_\_\_\_\_  
Topic of Study \_\_\_\_\_

What We Know	What We Want to Know	What We Learned

choose a partner (usually someone beside, in front of, or behind them).

3. *Share*: Students share responses with their partner.

This method can be expanded so that responses are shared with the whole group. This technique enhances the quality of discussion, giving all students an opportunity to learn by reflection and by talking about their knowledge and experiences.

**Write - Pair - Share**

An adaptation of think-pair-share, in this technique students respond to a question by writing their best answer and then sharing it with a partner.

This can easily be adapted to a lecture style. The teacher can pause after 10 minutes and ask students to respond to a leading question. The question could help the student to apply what has been presented or might introduce the next section.

**Know - Want to Know - Learned (K-W-L)**

Three easy steps comprise this technique, which was developed by Ogle.<sup>12</sup> (See Figure 1.) Each step can be done individually, in small groups, or with the whole class.

1. Students write what they know about the topic (or tell the teacher what they know).

2. Students list what they want to

*Passive learning occurs when teachers explain and tell and students primarily listen.*

know about the topic.

3. After instruction, reading or watching videos, they tell what they have learned.

This strategy has been successfully used by college teachers at the beginning of a semester. After completing parts one and two in small groups, the professor then says, “You have just generated the final exam questions—if we don’t answer your questions in this course, we’ll refund your money.” This engenders a tremendous amount of active learning because students are ready for instruction!

**Know - Questions - Learned - Application (K-Q-L-A)**

My adaptation of K-W-L is K-Q-L-A, a four-step model that addresses Ellen White’s concern that “Every youth should be taught the necessity and the power of

application. Upon this, far more than upon genius or talent, does success depend. Without application the most brilliant talents avail little.”<sup>13</sup>

1. First, have students tell what they know about the topic.

2. Then have them ask questions about the topic.

3. Present the content and have the students identify what they have learned.

4. Finally, have them explain how to apply the information they have gained.

A primary function of each of these strategies is helping the teacher to evaluate students’ understanding. This needs to be done not only at the beginning of a lesson, but also several times during the lesson to check for understanding. The following suggestions (adapted from Gross<sup>14</sup>) help to explain the relationship between the students’ knowledge, their skills, the difficulty of the material, and active teaching and learning. After assessing the students’ prior learning, the teacher does a quick mental check against the level of difficulty of the material. This means, of course, that he or she must be aware of the match between the two facets and able to make adjustments—either to the material or to the students’ knowledge. As the lesson progresses and their knowledge increases, the level of difficulty can also be increased. This fine balance will give the lesson a sense of movement, thrust, direction, and action. Students sense when they are learning and are motivated by that reality.

However, staying in the zone of active learning is often difficult, which makes teaching more an art than a set of techniques. Strategies can help us to monitor the learning process, but our focus must be the students’ learning—not the techniques.

**Cooperative Learning**

Many aspects of cooperative learning facilitate active learning because students are placed in situations where they must share and clarify their viewpoints. Why is cooperative learning touted as “one of the biggest, if not the biggest, educational innovations of our time”?<sup>15</sup> Probably because it facilitates meaningful talk and active learning so well. As teachers structure cooperative learning groups, the prob-

Figure 2

**KNOW • QUESTIONS • LEARNED • APPLICATIONS (K-Q-L-A)**

KQLA \_\_\_\_\_  
Topic of Study \_\_\_\_\_

What We Know	Questions We Have
What We Learned	How We Can Apply It

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lems associated with traditional classroom structure (dominance by one person, slackers, wasted time, etc.) are diffused. Despite the cliché, talk really isn't cheap—it's one of the most significant ways that students gain ownership of the information teachers give. One of the best resources for learning cooperative-teaching strategies is Kagan's compilation titled "Cooperative Learning."<sup>16</sup>

Good writing follows good talking. As students create and test their arguments on their peers, they prepare themselves to write what they know. Talking and writing become the avenues through which students actively construct their own sense of reality. These expressive forms of communication can be generalized to form the basis of active learning instead of concentrating on listening and reading, which are receptive forms that may encourage passive learning.

Another very important way to increase active learning is through the use of computers. Kathy and Tom Roosma, teachers at Central Valley Junior Academy in Oregon, actively use computers in their classes. The sidebar on page 9 suggests ways they have found to use the Internet

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to increase the level of interest and excitement in their classrooms. The beauty of computer use is its appeal to tactile-kinesthetic strengths, which are often prevalent among at-risk students.

As we try to make active learning the norm in our classes, let's keep in mind the words of Solomon, "A person's thoughts are like water in a deep well, but someone with insight can draw them out" (Proverbs 20:5, T.E.V.) and another quote from Ellen White: "It is not the best plan for teachers to do all the talking, but they should draw out the class to tell what they know."<sup>17</sup> ✍

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# CAUGHT IN THE (INTER)NET\*

KIDLINK (kidlink@vm1.nodak.edu)

Kidcafe Exchange of e-mail between keypals all over the world  
Kidforum Exchanges between classroom group of students on set topics  
Jan-Feb - Sports/Olympic Games  
Mar-May - Shelter Under the Sun (Architecture & Eclipse)  
March 21 - Length of shadow cast by a meter stick at noon

Kidprojects Multicultural Calendar - Year-long project where students write about the cultural festivals and celebrations of their locality.

MATH MAGIC K-3; 4-6; 7-9; 10-12 (mathmagic-4-6@forum.swarthmore.edu)  
(use the grade level you wish to subscribe for the address) Problem solving with a team at another site. Discuss problem, come to agreement on a solution, submit answer.

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ASK PROF MATHS (MATHS@sbu.edu)  
Mathematics questions answering service. Responds to content and pedagogy questions.

ASK A SCIENTIST (telnet newtoncdep.anl.gov)  
Science questions answering service.

FISH-JUNIOR (Listser@searn.sunet.se)  
A forum for knowledge transfer between marine scientists and students.

BOOKREAD MATCH PROJECT (mailserv@wcu.edu)  
A mailing list for the purpose of identifying others who wish to exchange e-mail between classrooms about a specific book or author.

YOUNG AUTHORS ELECTRONIC JOURNAL (JMM12@psuvm.psu.edu)  
Electronic journal publishes works by students ages 11-18 five times a year.

SPRING GEOGAME (geogame@acme.fred.org)  
Geography project for middle-upper elementary. Purpose to learn geography terms, how to read and interpret maps, increase awareness of geographical and cultural diversity.

## PROJECTS AND REPORTS FROM VARIOUS PARTS OF THE WORLD

Africa Trek  
Live From Other Worlds (Antarctica)  
Arctic Report  
Wolf Study  
Jason Project (Belize)  
Russian Far East Exchange Kamchatca  
Around the World in Seven Days - The Circumpolar Expedition  
NASA Foster On-line Airborne Astronomy Missions

For further information on any of these projects, contact  
Kathy Roosma (roosmak@csos.orst.edu)  
Central Valley Jr. Academy  
31630 SE Highway 34  
Tangent, OR 97389  
U.S.A.

\*These Internet addresses were all functioning in the summer of 1994.

man, "Cooperative Learning in Post Secondary Education: Implications from Social Psychology for Active Learning Experiences," a presentation to the annual meetings of the American Educational Research Association, Division J, Chicago, Ill., April 3-7, 1991, p. 29, ERIC ED330262.

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