COACHING VS. "PROFESSING" Which Kind of Teacher Are You?

BY ROBERT D. BORAM

ecently I moved to a new town. In the course of getting established, I needed to find a dentist. Following the recommendations of colleagues, I was able to pick a competent practitioner. I didn't investigate what grades the dentist made in school. Rather, I looked for someone with a good reputation who could do an adequate job. I assumed that the dentist had mastered the basic skills of dentistry.

Because people are not machines, some skill variations will always exist among different dentists, pilots, and contractors. However, all must have mastered some basic skills before they are allowed to sell their services to the public. Although most professions require some classroom learning, the key step to certification is the *application* of what each candidate has learned to reallife situations. To achieve this, novices often associate with one or more "masters" of their profession.

The Teacher as Coach

We teachers, too, are masters of what we do: teaching students. But too often we simply teach our subjects *to* students, with the emphasis placed on

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the content rather than on the learner. However, our primary focus should be our students, not the subject matter. Teaching in this way is based on the idea of being a coach.

This was what some of the first teachers in the teacher-guild colleges were called: coaches. The word came from the French spelling of the Hungarian town of Kocs, which was well known in the fifteenth century for its carriages. Teachers were those who coached their students—i.e., carried them along as a carriage does its occupants. It wasn't until the larger European universities sprang up that many teachers stopped

coaching their students and began "professing" to them what they knew.¹

The role of the teacher has traditionally been that of a fountain of knowledge. Students are to fill themselves by drinking this knowledge. In an effort to impart to the students as much knowledge as possible in the time provided, the teacher often lectures in order to "cover the material." The resulting attitude of some teachers becomes "if you got it, good; if you didn't, too bad." This "professing" model of teaching focuses on the teacher and content. I know of few teachers who would look at their students and say, "I want some of you to be excellent, some of you to be good, some average, some poor, and some of you to fail and drop out," yet this attitude subconsciously permeates our educational system.

In contrast, coaches desire the success of each person in their charge. They set up a program that ensures maximum success for most participants. This doesn't mean that everyone will be successful. The students must not only have the prerequisites as determined by the coach, but also put forth the effort that is within their capacity. However, the program is student centered. The

students are apprentices coming to the master (coach), believing that the coach wants them to succeed and that a structure has been set up to facilitate, not detract from that end. A core principle of the Coalition of Essential Schools states that "the governing practical metaphor of the school should be student-as-learner, rather than the familiar metaphor of teacher-asdeliverer-of-instructionalservices. Accordingly, prominent pedagogy will be coaching, to provoke students to learn how to learn and thus to teach themselves."2

Mastery Learning

This is the essence of mastery learning: creating a curriculum that does not ask: "How will I teach this much material to these students in 180 days?" but rather, "How can I teach these students so that they can master the subject successfully within the time that I have with them?" This means changing the emphasis of the class from the content covered by the teacher to the concepts mastered by the students. For years teachers have deluded themselves into thinking that because they covered a concept and its related vocabulary in class, the students understood it. Much more is accomplished if the students *master* some of the key concepts, so that they can use them and internalize them in their thought processes. "The school's purpose should be to help students learn to use their minds well; the school's goal should be that each student master a limited number of essential skills and areas of knowledge."3

This philosophy requires the teacher (coach) to take a long look at the curriculum and use his or her mastery skills to focus on the basics. This will mean eliminating some concepts and including others. There is a good chance that every topic found in a framework cannot be mastered by all the students. For example, in science, it may not be productive to study biochemistry with general biology students, especially when most of them haven't had any chemistry, yet it is included in most of the general biology textbooks. As Robert Hutchins said,

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"The good teacher is recognizable by the important things he or she declines to teach."4

Structuring the Curriculum

One successful approach to mastery learning structures the curriculum around several units, with each unit assigned a specific time period, often three or four weeks. When the time is up, the unit is closed. A typical physical science unit dealing with electricity might include concepts dealing with open and closed circuits, series circuits, parallel circuits, resistance, potential, current, insulators, conductors, and electromagnetism. Rather than lecturing on each of these topics, it is much more effective to have the students interact directly with the materials and develop the concepts from their experience. The teacher sets up the equipment for appro-

priate student experiences and coaches the students to ensure that they master the concept. These experiences provide a foundation for classroom discussions, activities, labs, demonstrations, and mastery conferences.

The Mastery Process

What is mastery and how is it determined? Learning is a process. In most apprenticeship programs the learner passes through a series of experiences, with the aid of a master where appropriate. Mastery means that the master of the profession has determined, using his or her criteria, that the apprentice has indeed mastered the required skills and comprehension through the process of guided apprenticeship. The master/apprentice relationship necessitates getting to know each other so that progress toward mastery can be evaluated. Too often in traditional "professing," the tests and assignments that are scored, graded, and entered into a computer take the place of meaningful student/teacher interaction.

One way to establish the coaching relationship is to require the students to keep a log or journal. This can be done successfully during the first five minutes of class, when students thoughtfully write, in their own words, about their understanding of the reading assignment. At the end of the class period, five minutes more is provided for students to write what they learned best from the class and what confusion they still have about the concept. Whenever possible they are encouraged to write down specific questions. The logs are turned in at the end of each day and returned to the students after the teacher has read them.

The logs provide valuable feedback about what the students understand and what concepts are not well understood. While reading the logs, the teacher can supply appropriate comments for the students. If enough students are having Picture Removed

difficulty with a concept, the teacher may want to discuss it with the class. In order to understand the progress of individual students, the teacher should read the logs at least twice a week. At the end of the week the students write a weekly summary of the major concepts, which is stapled together with the logs and other classroom assignments (labs, problems, etc.) and turned in. This process continues through the end of the unit.

Mastery Conferences

The more the teacher is involved in the learning process with the students, the better able he or she will be to determine mastery. Some teachers include a five- to seven-minute mastery conference with each student. During the conference the student is asked one or more questions regarding the topic under study. The teacher should repeat the answer back to the student to be sure that the teacher heard it correctly. If the student has mastered the topic, this is recorded in the grade book. However, if any of the answers do not indicate mastery, the student is given the list of questions on a mastery-conference sheet. The students may return as many times as they wish until time for the mastery conference in the next unit. After the first mastery conference, most students

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will have one or two questions remaining to master. The students often meet with the teacher before or after school, during a break, or at lunch to demonstrate mastery of the questions.

Trying Again and Again

The opportunity to come back again

and again keeps the door open to learning. Charles Kettering of General Motors once said,

I think it was the Brookings Institution that made a study that said the more education you had the less likely you were to become an inventor. The reason why is: from the time a kid starts kindergarten to the time he graduates from college he will be examined two or three or four times a year and if he flunks once, he's out. Now an inventor fails 999 times, and if he succeeds once, he's in. An inventor treats his failures as practice shots.⁵

Portfolios

Another method of evaluating for mastery involves portfolios. These can be used for weekly unit or grading term assessment. Four classes of evidence are often included in portfolios; artifacts, reproductions, attestations, and productions.6 Artifacts are documents produced in the normal course of the student's classwork. They could include written reports, outstanding lab reports, tests, homework, projects, logs, or journals. Not every document produced by a student should go in the portfolio. However, some assignments may be given solely for inclusion in the portfolio. A revealing aspect of portfolios is asking students to select their best lab

report or project for inclusion in the portfolio.

Reproductions are documents about typical events in the work of the student who developed the portfolio, events that usually are not captured as artifacts. These might include photographs of an invention, an original bulletin board display, an outdoor project such as rocket launches or solar heating experiments, or an audio or video tape of a special presentation or project.

Attestations are documents about the student's work prepared by someone other than the student. These could include a letter of gratitude from the organizers of an environmental clean-up day or a note by members of a cooperative learning group acknowledging the artwork on a science report.

The last class of documents are *productions.* These are documents prepared especially for the portfolio. This class of document includes at least three types of items: goal statements, reflections, and captions. The goal statement is the stated purpose of the portfolio. It provides the focus for the portfolio development process. Depending on the intent of the portfolio, the goal statement may be defined by the teacher or selected by the student.

The reflective statement usually is written just before the portfolio is turned in to the teacher. In this statement, the students summarizes the documents in the portfolio and traces how they have captured and portrayed student growth, learning context, or concept integration.

A *caption* is attached to each document, answering the questions: What is it? Why is it evidence? What is it evidence of? The caption transforms documents into evidence. The captions are important because they help students articulate their thoughts.

The criteria for portfolio evaluation must be clearly identified before starting the evaluation process. One common method is to use four levels of mastery: novice, apprentice, proficient, and distinguished. Sufficient mastery is achieved at the proficient level. In some classes it may be appropriate to provide a passing grade only when sufficient mastery is achieved for all

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units. In other classes, grades may be based on the number of concepts or units mastered.

Approximately 80 percent of what a person learns in college is forgotten within the four years after graduation. A recent National Science Foundation research study concluded that "standardized tests, as well as those in many math and science textbooks, do more harm than good in that kids wind up knowing less than they might have if the tests had never happened."7 We can do better than that if we teach for mastery.

Because Adventist schools tend to have lower enrollments, we can provide something that other schools cannot: smaller classes, more personal attention, and better coaching. Teaching

for mastery is easier and more effective with small student/teacher ratios. However, this plan has been used effectively with classes as large as 40 students. But most importantly, as Adventists, we should teach for mastery because we want our students to be truly educated, not just to have experienced schooling.

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NOTES AND REFERENCES

- 1. Horace Lucido, "Physics for Mastery," The Physics Teacher 30:2 (February 1992), p. 96.
- 2. Holly M. Houston, "Restructuring Secondary Schools," in Building a Professional Culture in Schools, Ann Leiberman, ed. (Teachers College Press, Teachers College, Columbia University, New York and London, 1988), p. 126.
 - 3. Ibid., p. 110.
- 4. G. Wiggins, "Creating a Thought-Provoking Curriculum," American Education 11:10 (1987).
- 5. Mark Bernstein, "A Self-Starter Who Gave Us the Self-Starter," Smithsonian 19:4 (July 1988), p.
- 6. Angelo Collins, "Portfolios for Science Education: Issues in Purpose, Structure, and Authenticity," Science Education 76:4 (July 1992), p. 456.
- 7. "The Trouble With Tests, Part Two," Newsweek (October 26, 1992), p. 58.