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DO TEACHING METHODS REALLY MAKE A DIFFERENCE?

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What actually happens to students when teachers close the door of their classrooms and teach? Teacher educators may feel they have "graduated" a very good group of beginning teachers or just completed an excellent inservice program, however, the real impact of their effort depends solely upon the interaction of the teachers and students when the teacher returns to the classroom. Consequently, efforts to enhance the effectiveness of teachers may be of relatively little value if teachers cannot or will not perform in the desired manner in the classroom.

It is not an uncommon occurrence to hear experienced teachers and/or administrators discuss the question of how to teach with a beginning teacher. Generally, they come forth with a statement to the effect that "now is the time to forget whatever those teacher educators told you in your education classes and do it your way." This statement may be followed by an inference that teacher-educators just don't know what kids are really like because they have not taught for so many years. We really only talked about how to teach in our college courses. It is not uncommon to have a student-teacher state something to the effect that they really see little need for a lesson plan because the supervising teacher that they observed never used one. One further point was recently made by a principal when he stated that beginning teachers do know how to teach and he had a good notion to start his own teacher education program.

What the teacher does in the classroom depends to some degree upon his approach to the learning situation. In visiting secondary and post-secondary schools, one noticeable practice utilized by teachers is to observe them lecturing, frequently from college notes, and students idly listening or conversing with a classmate. It seems the question could be raised, why are students so disinterested? Could it be that we now have a generation of disinterested students? Or in our quest for the ultimate in curriculum and flexibility in scheduling, could it be that interest of students has been lost because the teaching methodology is not particularly challenging or directed toward students? Possibly as educators have engineered programs, people may have been forgotten.

In a U.S.O.E. publication entitled *How Teachers Make A Difference,* Mood suggested a number of messages from research which should guide teachers as they interact with students. Some of the following clues from research seem to be critical for effective teaching: 1) pay attention to what students say and put it to use, 2) increase every student's sense of personal worth, 3) minimize lecturing and passing down information from on high, 4) create much activity for students, 5) use desperate means, if necessary, to combat apathy, and boredom, 6) diversify your teaching. Too frequently, research in education and teaching are at opposite ends of a continuum and the teaching act is performed with little regard for the clues and insights of research.

Agricultural educators have been strong advocates of problem-solving teaching, but, what is *really* happening when agriculture teachers close the door and interact with students? Could it be that teacher educators have simply talked about problem-solving teaching whereas the methodology involved in actually performing a problem-solving situation has become more teacher centered and less student centered?

What does problem-solving really mean? From general observations, it seems that to some educators, problem-solving is simply asking students numerous questions. However, is that all there is to problem-solving teaching? Do undergraduate students leave teaching methods courses with real abilities to utilize problem-solving teaching methods or do they leave college with a somewhat mixed attitude about teaching methods? Possibly they possess knowledge but cannot really perform in the classroom. Is it really any great shock to find teachers, faced with classes of students, to decide, that an outline of a chapter is the most expedient way to cover the subject matter in a text or reference book? Could teacher educators be accused of conveying an idea that most anyway you teach is satisfactory. Hence, teachers are actually encouraged to find their own style of teaching.

PROBLEM-SOLVING TEACHING METHODS

With these observations and questions facing agricultural educators at the University of Nebraska and later at the University of Minnesota, it was determined that a real need existed to identify some basic performance areas in teaching methods. Ultimately this was an attempt to assure those employing teachers that they could perform effectively in a teaching situation.

With this background in mind, it was felt that teacher education courses in teaching methods should focus on providing prospective teachers with the essential skill to utilize the five basic problem-solving teaching methods. Rather than talk about a wide range of teaching techniques and the merits of using each technique, it was felt that focusing primarily on what student teachers will be able to do was a more critical issue. Thus, an individualized competency-based performance oriented teaching methods course was developed. This course was designed to provide accountability in an agricultural education teaching methods course. The central purpose of the course was to produce teachers with the ability to enter teaching with the capability to simply prepare lesson plans and teach students in an effective manner. Which rather surprisingly was not happening with sufficient regularity.

In becoming accountable for specific behaviors in a beginning agriculture teacher, a group of experienced teachers and teacher-educators identified behaviors they felt were critical for a beginning teacher to possess so far as teaching methods were concerned. These behaviors or performance areas were then arranged into a hierachy which began with simple behaviors and then the more complex. Thirty performance areas were identified as critical behaviors for the beginning teachers to possess. Consequently, these 30 performance areas became the basis for 30 individualized instructional modules. Each module was organized into a worksheet around a format which included: 1) Module Title, 2) Introduction, 3) Objectives, 4) Pre-assessment, 5) Learning Activities, 6) Learning Resources, 7) Assignment, and 8) A Worksheet Section. Each module directs the student to listen to an audio-tape recorded discussion and/or the reading of materials pertinent to the performance area. Following these experiences, the student may observe a video-taped demonstration teaching situation which utilizes one of the problem-solving methods or a teaching technique. Finally each student must perform each of the required tasks. This results in each student developing a minimum of 12 lesson plans and actually teaching each of them one time. Each teaching performance is evaluated on a satisfactorry or an unsatisfactory basis. Each student is video-taped on at least two or three of his micro-teaching experiences. If a performance is not acceptable, it is repeated until it can be performed satisfactorily. The modules included in the 30 performance areas are as follows:

Module 1: Operating Audio-Visual Equipment and Learning Resources

Module 2: Filing of Teaching Materials

Module 3: Teacher-Pupil Planning

Module 4: Five Problem-Solving Teaching Methods.

Module 5: Identifying Student Problems to the Problem-Solving Teaching Methods

Module 6: Utilizing a Daily Lesson Plan Form

Module 7: Writing Behavioral Objectives

Module 8: Motivational Activities and Techniques

Module 9: Reinforcement . . . Techniques

Module 10: Questioning Techniques

Module 11: Concluding a Discussion

Module 12: Utilizing a Supervised Study Time

Module 13: Handling Discipline Situations

Module 14: Constructing Objective-Type Tests

Module 15: Constructing Subjective-Type Tests

Module 16: Constructing Performance Evaluation Instruments

Module 17: Grading Student Performance

Module 18: Writing and Teaching a Lesson Using the Steps and Key Points Teaching Method

Module 19: Writing and Teaching a Lesson Using the Possibilities and Factors Teaching Method

Module 20: Writing and Teaching a Lesson Using the Advantages and Disadvantages Teaching Method

Module 21: Writing and Teaching a Lesson Using the Present Situation vs. Ideal Situation Teaching Method

Module 22: Writing and Teaching a Lesson Using the Question-Answer-Discussion Teaching Method

Module 23: Presenting a Shop Demonstration.

Module 24: Preparing Individualized Study Materials

Module 25: Utilizing Resource Personnel

Module 26: Utilizing Games and Simulated

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Module 27: Utilizing Field Trips

Module 28: Team Teaching

Module 29: Utilizing Discovery Teaching Techniques

Module 30: Teaching the First Day of School

The performance areas covered attempt to begin with developing teacher-pupil planning skills so that a beginning teacher can develop the ability to acquire the problems and concerns of students and then formulate these problems into meaningful lesson plans. This is followed by developing skill in utilizing critical behaviors in teaching and finally putting it all together by developing these problems into a complete lesson plan and actually teaching it.

This list of performance areas obviously does not address itself to a number of behaviors thought critical by some for teachers to possess. It is the writers contention that for too long teacher educators have tried to infuse too much into an undergraduate program resulting in considerable teacher-educator talk but relatively few actual teaching skills being developed by student teachers. Consequently, the decision was made to attack some key areas and develop the student teachers ability to perform the essential teaching skills.

To clarify what the writer means by problem-solving teaching, Rhoad, Deems and others have outlined five problem-solving teaching methods. These five methods attempt to cause the teacher to become student-centered. These five methods involve basically a logical process for solving problems students encountered in their supervised experience programs whether they be from working in an agri-business firm to farm or laboratory experiences. These five methods may be briefly described as follows:

1. The "Possibilities and Factors" method. This method is used when making a selection. Whenever a student's problem deals with making a selection, this method is appropriate. In this method, there are more than two possible courses of action to follow. The key words used in the problem statement are "what source," "what variety," "when should." In drawing a discussion to a close, a concluding statement is an essential aspect.

2. The "Steps and Key Points" method. This method is used when the problem deals with teaching students a process or procedure. The key words in the problem statement are "what procedure should," "how should." The steps should each show action and begin with a verb and they form the conclusion to the problem.

3. The "Advantages versus Disadvantages" method. This method is most appropriate when making a decision between two courses of action. The key word for beginning the problem statement is "should." A concluding statement is an essential feature when using this method.

4. The "Present Situation Compared with an Ideal Situation" method. This method is most appropriate when determining if changes should be made in an existing situation. The key words in the problem statement are "what changes, if any." A list of recommendations forms the conclusion to the problem.

5. The "Question-Answer-Discussion" method. This method is appropriate for presenting factual information. The previously listed methods all are directed at leading students through a procedure to solve a specific problem. This method is a more generalized method. The key words used are "what are the essential . . . " A review of the main points discussed serves as the basis for a conclusion.

Utilizing these five methods as a basis for writing lesson plans to use with a group of students, provides the teacher with a repertoire of means to solve problems. It may be noted that using key words in the problem statement is an important behavior. Without clear-cut problem statements, it becomes difficult for a class to solve a problem. On the basis of these five methods, techniques such as field trips, resource personnel, simulated activities and games may be utilized to provide teachers with a variety of teaching behaviors.

As a result of utilizing this system with approximately 140 students at the University of Nebraska and Minnesota, some encouraging observations have been readily visible. Students have expressed satisfaction with the teaching methods course. First of all, they appreciate the individualized approach to the class plus the fact that they are able to organize a unit of instruction, prepare a lesson plan and teach it to a group of students. They feel a degree of confidence in their ability to teach prior to student teaching. Supervising teachers have expressed that they now feel the student teachers are more capable of handling a class in a group situation than those student-teachers prepared in an earlier, more traditional teacher education (lecture-discussion) program.

A follow-up study was conducted at the University of Nebraska which utilized a paired-comparison technique with the State Department of Education Agriculture Supervisors serving as a jury to rate beginning teachers' performance. In this study, 21 beginning teachers were rated, each against all others, as to who were the most effective classroom teachers. Of the 21 beginning teachers, 10 had been taught a teaching methods course in a traditional lecture-discussion system and 11 had been taught teaching teaching methods utilizing the individualized competency-performance-based system. The supervisors were not aware of which system the teachers had been taught.

They only knew them as beginning teachers. As a result of their comparison, 8 of the top 10 beginning teachers listed as the best were prepared in the competency-based individualized system. With these evidences it seemed something other than mere chance was involved in improving the quality of beginning teachers.

Hopefully, as a result of utilizing this system of teacher education, secondary and post-secondary teachers are better prepared for teaching. When they close their classroom doors, there appears to be evidence that students are being taught in an effective manner. The system has provided a means of making agricultural teacher educators in Minnesota and Nebraska more accountable for the quality of their product. The attitudes, skills and behaviors of student teachers ultimately touches the lives of hundreds of elementary, secondary and post-secondary students and that is an awesome responsibility that must receive serious thought and action by teacher educators. Skill in utilizing teaching methods does make a difference.

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DR. MARTIN B. McMILLION

Dr. Martin McMillion has accepted an assignment at Virginia Polytechnic Institute as Professor of Agricultural Education. Martin and his family left in July for their new position. The Agricultural Education Department will have a difficult time to replace Dr. McMillion. He initiated work in the preparation of teachers to teach Agriculture Occupations and Agribusiness programs. Martin has served on many University Committees, taught in-service courses for teachers, taught and advised undergraduates, been involved in research and advising graduate students plus other tasks as requested. He has made many contributions to the University of Minnesota.

The Visitor wishes the very best for Martin and his family as they accept the new assignment where they will enjoy continued success.