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ABSTRACT

In an effort to curb high first-year attrition rates and to motivate students from a state of passive learning to one of active participation, Bergen Community College implemented a program of peer teaching-learning and group inquiry strategies in a preclinical dental hygiene course. To determine freshman students' learning styles, the following tools were employed: weekly student interviews; a checklist of interests and skills; interest in the syllabus; background knowledge probes; journal-keeping by students; autobiographical sketches; study habit inventories. In addition, a colleague visited the classes to observe students' learning styles, take notes on the classroom environment, and assist the instructor in zeroing in on class reactions to planned teaching strategies. As the semester progressed, the traditional lecture format was increasingly replaced by group inquiry and collaborative learning. For example, after new instruments were briefly introduced in lectures, the actual use of the instruments on manikins and fellow students was learned through the group inquiry strategy. Student interviews and journals indicated that students were more comfortable learning from each other, and that they learned the usage of instruments at a faster pace. The instructor emerged as a resource person rather than an authority figure. Peer involvement diminished competitiveness, fostered professional partnerships, reduced anxiety, increased motivation, and facilitated active involvement in the learning process. (JMC)

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ARE YOU SPOON-FEEDING YOUR STUDENTS?

A PAPER ON  
FACILITATING A COLLABORATIVE LEARNING EXPERIENCE

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## ARE YOU SPOON-FEEDING YOUR STUDENTS?

### a paper on FACILITATING A COLLABORATIVE LEARNING EXPERIENCE

As educators, it is our desire to move the students from a passive learning state to one of active participation in their educational experience. Many teaching strategies must be introduced to accommodate the students' diversified learning styles and to open up the classroom for active participation and experimentation. However, according to Ernest Boyer's College, the Undergraduate Experience in America (1987), the majority of professors use the lecture method in which students passively receive information.

Through classroom experimentation at Bergen Community College, Department of Dental Hygiene, Paramus, New Jersey, USA, different strategies were implemented and assessed in the preclinical course. The classroom environment was actively challenged with the strategies of group inquiry and peer learning-teaching, which resulted in moving the students from dependent learning style into one of collaborative interactive style.

This paper addresses these strategies and reviews the results of this course experiment. It was noted that peer involvement diminished competitiveness, fostered professional partnership, reduced anxiety and facilitated active involvement in the learning process. Also, the teachers became more sensitive to the students' individual learning styles, thus empowering students to become life-long learners.

COLLABORATIVE FORMAT

- . student centered
- . active learning
- . collaborative to independent learning style
- . open, decentralized classroom
- . teacher responsibility  
student accountability
- . cooperative learning with a positive interdependence among group members
- . teacher acts as facilitator, environment-setter
- . expanded

LECTURE FORMAT

- . teacher centered
- . passive learning
- . dependent learning style
- . structured, centered classroom
- . teacher responsibility
- . individual competitive setting
- . teacher acts as expert, authority figure
- . traditional

**INTRODUCTION:**

As freshman coordinator and adviser of the Dental Hygiene Program, Bergen Community College, Paramus, New Jersey, I questioned why so many of our freshman students were failing in the 1st semester of our curriculum. 18% of the students were not making it. Why? When I knew from my course work at Teachers College that almost any student given the needed time and ideal teaching strategies could master the material.

A hard look had to be taken of our pedagogical approach. Were we pushing the students too quickly through the class work with too much material to be learned in too short a time span? Were we using only one teaching strategy when different methods could be utilized? Were we spoon feeding the student the needed information - causing them to be passive learners rather than active ones?

Traditionally the pre-clinical course in dental hygiene has been taught in a straight lecture method with the students as passive learners. This approach was now in question for it was not working.

REVIEW OF LITERATURE:

Boyer's College, The Undergraduate Experience in America (1987) states that the majority of college teachers use the lecture format in their classroom. This pedagogical strategy creates a teacher-centered class with students playing a passive role. (Whitman and Fife, 1988) Even when the "Socratic" class discussion is employed, only few students tend to participate while the majority of the class will sit in passive silence, uninvolved. (Etchison, 1988) These passive students will "view themselves as empty bowls to be filled up, after which they would pour their learning back...on an exam." (Etchison, 1988)

Boyer (1987) asserts that all students must be actively engaged in their learning. It is not acceptable for only a few students in the class to actively participate while others are allowed to be mere spectators. A course must be shared as a collaborative effort between student and teachers with both parties actively receiving benefits from the experience. (Katz and Henry, 1988) It is the teacher's responsibility to assist the students' transformation to one of active, curious and inquiring participants.

Through the introduction of alternative teaching strategies, such as peer learning and teaching and group inquiry, the students can bridge their learning styles from dependent, passive to collaborative, active participants. The peer learning and teaching strategy is considered part or subject of the collaborative learning movement in higher education." (Whitman and Fife, 1988, p. 4)

The collaborative learning movement was developed in the 1950's and 1960's in Britain by secondary teachers and medical educators. Through the use of small groups of medical students working together, the art of the medical judgment and diagnosis was learned more proficiently than when the students worked individually. (Bruffee, 1984) These students acquired good medical judgment faster when the entire group discussed the case history report and collaborated on the diagnosis.

In the 1970's, collaborative learning made its way across the Atlantic. The new term encompassed the old familiar terms of peer tutoring, peer evaluation, classroom group work, peer assistance, learning and teaching. (Bruffee, 1984) This concept of using fellow students to instruct, collaborate, assist and inquire together is not new for the ancient Greeks used student leaders as "student-teachers" and in the late nineteenth and early twentieth centuries, educators used peer teachers and assistants in the one-room schools in rural America. (Whitman and Fife, 1988)

Today, the use of peer teaching-learning proves to contribute greatly to an increase in learning and presents a positive, supportive classroom atmosphere. (Etchison, 1988). Students' work improved when help was given by peers, and those peers in turn learned from the students they helped and from the act of helping itself (Bruffee, 1984). Collaborative learning brings new power to peer influence and challenges the traditional format of education.

How can a teacher open up the classroom to accommodate a group inquiry, collaborative learning format? What changes must be made in the teacher's approach to teaching and the student's style of learning? How can we motivate those students who are only comfortable with the lecture format and are afraid to participate in a group? To answer these questions, the following pilot experiment was conducted in the pre-clinical dental hygiene program at Bergen Community College.

**METHODS: To Develop our Pilot Study**

Katz and Henry (1988) provide us with excellent tools to observe and analyze our classroom learning environment. To determine our freshman students' learning styles, the following tools were employed:

1. student interviews
2. checklist of interest and skills inventory
3. interest in syllabus,
4. background knowledge probes
5. journal keeping by students
6. autobiographical sketches
7. study habit inventories
8. collaborating with a colleague to investigate the teaching-learning process and classroom environment (Team-teaching approach)

To understand our students and their learning process, weekly student interviews were conducted. Two or three students from each class were selected to participate in the interview sessions. Open-ended questions were asked (Katz & Henry, 1988). How do you study for the class? Are your learning skills and studying skills as sharp as you would like them to be? What could you do to improve them? Does your instructor's teaching style motivate overall class participation? Questions on the students' personal life were also considered: Do you work? What do you do for fun and relaxation? The interview questions reflect on what and how the students learn.

The writings of the student were also assessed. Journal keeping by the student assisted in the understanding of the emotional, intellectual and interpersonal situation. Problem areas in the adjustment of the student to the dental hygiene curriculum were noted. Journal keeping can provide an early warning signal for trouble in study habits, course work or even personal experiences. (Dunphy, 1987).

Autobiographical sketches and likes vs. dislikes background probes of the dental hygiene profession were administered. These background knowledge probes enabled the teachers to gauge the appropriate level of experience and awareness of the student. (Cross and Angelo, 1988). For example, a question from the autobiographical sketch could focus on a "pleasant and successful learning experience." For instance, what situation worked that allowed you to learn? The course-related

interest and skills checklist inventories demonstrated actual skills needed for the application of course-related topics. For example, interpersonal communication skills are needed to teach the dental hygiene home-care techniques necessary for the patient to maintain optimal care of his/her oral cavity. (Cross and Angelo, 1988). Students were given the Wrenn 28-question study habits inventory. The items of the inventory are the habits and attitudes of study that were possessed in different degrees by students of high academic achievement and students of low academic achievement, who were matched for intelligence test ability, sex, length of time in college, and subject matter taken. (Wrenn, 1941). This inventory was most helpful in showing a student where his/her study habits were faulty.

A collaborating teacher-colleague visits the teacher's class to observe the learning styles and attitudes of the students and to take notes of the proceedings within that class. Are the students paying attention? Is the material presented at a well-modulated pace? Does the instructor have rapport with the students? During this same observed session, the instructor also will take his/her own notes of observations of the learning process. Later the two faculty members will meet to discuss and share their thoughts and findings. This inquiry system uncovers many aspects of students' participation or non-participation. Are the students passive or active learners? (Katz and Henry, 1988).

RESULTS:

During the first week of school, the class members introduced themselves, stating work experience and career goals. A few students did not have any background in the dental field, i.e. dental assisting. These young women became visibly anxious and uncomfortable with the thought that the material would be beyond their ability. By administering the course-related interest and skills checklist inventory, established skills could be aligned with dental hygiene course-related topics demonstrating an unexpected expertise. (Cross and Angelo, 1988) For example, the skill of manual dexterity needed for knitting, sewing, etc. can be converted or aligned with the instrumentation subject matter. Students were relieved after reviewing the results of the inventory. One student did drop out of the class, because she felt the others were too advanced in their skills, many of whom were practicing dental assistants.

The student interviews revealed much about the student's way of thinking and learning. Attitudes to authority, relationships with peers and parents and a sense of personal accountability to one's life will show the teacher the workings of the student's mind, it's sophistication and intricacy. Student's notes, tests and papers served as guide to his/her learning situation. What caused the student to learn and when did that student's mind wander in class, resulting in poor note taking? An "instant replay" through the interview process and/or journal keeping will assist in evaluating the occurrence and the events surrounding it. (Katz and Henry, 1988).

By participating in this process, the teacher and the student will share a new openness and sense of communication. The student will begin to accept his/her own accountability for the learning process. The student will move away from a dualistic approach of "why can't you show me the right way to hold the instrument" to one of collaboration with the teacher and peers. (Claxton and Murrell, 1987). The mood will be one of sharing or trying out what he/she has just learned. The student leaves the passive role to enter into an active participation in the learning process. (Katz and Henry, 1988).

Faculty interviews and colleague-instructor classroom observations assist the teacher in zeroing in on class reactions to planned teaching strategies, attentiveness of students, actual outcomes of lesson and personal reactions. Through ongoing exploration into the pedagogical approach, the teacher can assess and elicit what works in the classroom and what does not work. This can lead to new levels of awareness. Self reflection is enhanced. Change in presentation methods can be addressed and growth will be encouraged. The teacher's role can evolve from one of expert and authority figure in the learning style of the dependent student to active participator and environment - setter in the collaborative learner style. For the student with an independent learner style the teacher will act as a facilitator allowing the student to search and experiment in the learning process. (Claxton and Murrell, 1987). The student is moved along this process from dependent to collaborative, and if possible, into the independent style of learning.

**DISCUSSION: (How We Implemented Strategy Into Pre-Clinical Course)**

To invite the dental hygiene students to become active learners and move into an open learning format, the teaching strategy was changed from the traditional lecture to group inquiry, collaborative learning as the semester progressed. When this occurred and discussion with fellow students ensued, the student interviews and journal - keeping notes revealed a positive learning situation. They learned from each other's questions and shared in each other's knowledge. Group inquiry participation was encouraged after new instruments were briefly introduced by lecture format. The actual implementation on manikins and fellow students was employed through the group - inquiry strategy. (Katz and Henry, 1978). Students revealed in journals and interviews that they were more comfortable learning from each other, and they learned the usage of the instruments at a faster pace.

Through the group inquiry strategy, comradeship and a stronger class bond appeared to develop. Each group would report back to the entire class after analyzing the assigned instruments. Questions from other groups would fly back and forth with the new-found knowledge. Learning became a collaborative experience with active participation from the students. The instructor no longer acted in the role of authority figure but entered into the role of resource person, co-teacher and environment - setter. (Knefelkamp, 1978).

It was noted that not all students were entirely comfortable being pushed into a collaborative environment. A few would sit on the outskirts of the group and had to be encouraged to enter into it. They (older student) looked to the teacher, their authority figure, for the correct answer because they felt their peers might teach them incorrectly. The instructor gently suggested that they participate in the group and if they still felt uncomfortable, they could spend time with the teacher showing them during the break. After a few group inquiry sessions, their confidence was built up, and courage was gained to try this new technique.

Tinto (1987) states that social integration by way of peer support is directly related to persistence in a college. Students who form friendship with students of similar backgrounds (interest and commitment to dental hygiene) will tend to remain in college. Support groups or "subculture" promote bonding with the institution. This bonding, facilitated through group inquiry has greatly assisted the freshman dental hygiene student in truly committing to the new experience of college. Many students upon entering the curriculum do not realize the amount of work and dedication needed to pass. This group learning process has assisted them to succeed.

Inventories such as Wrenn's study skills and habits, administered early in the semester, have aided students in learning how to study more effectively. The improvement in the second practical exam and second written test demonstrated that some slow starters have been able to improve their learning. When asked what had occurred for them to become successful after a poor start, they replied that the personal interviews with the teacher demonstrated that the teacher cared. At these interviews, the results of the inventories were shared. Study habits were evaluated and subsequently improved. The students also stated they did not want to let their new friends in their peer group down; they had to pass! It was observed by the instructor that some groups remained together even after class time. Bonding had occurred and persistence prevailed.

**CONCLUSION:**

The following conclusions were observed from this pilot, experimental

study.

1. Group inquiry expanded the students knowledge and allowed them to move through the course work at a faster pace. More research must be done to prove this conclusively.
2. Students became active participants in their learning. Through group inquiry, even the shy students emerged and became part of the group. Self confidence was build reducing fear of failure. Commitment evolved.

3. Bonding of the students appeared stronger in the class, and competitiveness was less evident.
4. Inventories, such as study habits, background probes, etc. aided the teacher in evaluating the student's learning style, goals, personal data, and problem areas. With the teacher-student interview, the student could redirect him/herself onto a successful path. The student learned to accept and share the responsibility in his/her learning process.
5. Strong peer group leaders found peer teaching rewarding and will consider teaching as a career path.
6. Faculty, along with students sharing in the collaborative effort, received benefits and growth from the experience.

**SUMMARY:**

This initial study provided data and framework to develop a new pedagogy for the basic instrument course in dental hygiene. Through classroom observation, teacher awareness, inquiry learning, faculty and student interviews and group participation, students were moved from a passive to an active learning situation. The teacher became open to new strategies. More investigation and research will be needed before conclusive evidence can be given. However, this study does represent a collaborative effort between student and teacher with both parties receiving growth and benefits from the experience.

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