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Building Pedagogical Intelligence in Allied Health: A Primer

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ABSTRACT

Allied health education has changed dramatically over the last ten years with many new educational program faculty drawn to the academy. This recent academic evolution is driving the need for allied health educators to become well versed in content-specific applied pedagogy. This article will briefly explore contemporary teaching techniques relevant to today's allied health educators and it is hoped that they will further explore these pedagogical concepts in their own classrooms and through applicable research.

INTRODUCTION

From desk arrangements, methods of instruction, class size, the lack of campus-initiated incentives for faculty to change through exploration of their teaching, structuring teaching and managing learners in large lecture halls, and the time it takes to prepare for class lectures, assignments, and assessment; faculty members themselves can be one of the primary barriers to classroom change. Another primary barrier is the lack of educational preparation in teaching that exists in nearly all academic fields on college campuses. Straying from a well rehearsed lecture requires that the faculty member take risks; this can create a fear of failure that is uncomfortable in front of 35 and potentially debilitating in a lecture hall with 350 college students. Real and perceived failures can range from students criticizing the faculty for "not lecturing" to the lack of having situational control or to a lack of student engagement with the new teaching technique. Teaching is a work of the heart at all levels of education. And so, a question that needs to be asked when considering pursuit of academia is, "Do you have the heart to teach?" This question is valid whether one is teaching in undergraduate, masters, or doctoral programs.

Allied health education provides a unique opportunity to use and apply many different teaching methodologies. This article is designed to familiarize both veteran and new educators with two emerging classroom teaching considerations and two contemporary pedagogical methods. This paper is not designed to be a comprehensive explanation of any of these teaching considerations or methods, but rather a primer to trigger further interest in these contemporary educational concepts. This article will summarize both the macro and micro stages of teacher/student relationships, the scholarship of college teaching, and two different teaching techniques for today's college classrooms: classroom assessment techniques (CATS) and active learning strategies (ALS). Both CATS and ALS can be used in allied health education classrooms to enhance the classroom experience for students, while providing the educator with different types of assessment on the teaching and learning that is occurring in the course. Understanding the stages that teacher/student relationships proceed through can be helpful in classroom management. Hopefully, this article will stimulate allied health educators to investigate one or more of these methods for themselves, explore them with the students in their classrooms, and become a "teaching professor" by conducting and publishing research in pedagogy applied to allied health education.

STAGES OF TEACHER/STUDENT RELATIONSHIPS

Parker Palmer, the renowned teacher and counselor to teachers, his Center for Courage and Renewal¹ and workshops, and his book *The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life*² have pioneered the recognition that there are designated stages that teachers and their classroom students progress through during a semester. By becoming cognitive of these stages, today's faculty can be better prepared to recognize and foster these stages and improve their relationships with students. By first recognizing the stage of their relationship, a professor can tailor his/her reaction(s) to a student and his/her issue(s), thus minimizing class and course disruptions as well as improving their long-term relationship. This can also improve the course from start to finish and foster personal and professional relationships which can last a lifetime.

The four stages of teacher/student relationships include (1) initiation, (2) experimentation, (3) intensification, and (4) termination. These stages occur at both the micro and macro levels of a college course. At the macro level, they occur individually to each student and each faculty member. They also occur to the students (as a whole) that register for and attend a course. At the micro level these stages occur between a student and the professor, thus resulting in as many teacher/student relationships as there are students in a course. There can also be dynamic changes during a semester when students are absent for illness, simply stop attending, or drop the course. The relationship stages, as well as the macro and micro levels, repeat themselves every semester, every time you have a student, and even if you have the same student for multiple courses in the same semester. With each repetition, the relationship has the opportunity to mature, but maturity is not guaranteed.

Initiation Stage

The initiation stage occurs the first day of a class of a new semester when the students are confronted with a new or previous professor. The students approach the professor based upon their prior experiences with teachers in general and the professor approaches the students based upon prior knowledge of and experiences with previous students. Preconceived notions and stereotypes often cloud this first meeting, making first impressions difficult to change. The challenge, therefore, is to begin each semester with a clean slate and without bringing previously negative experiences with certain students into a new course and classroom, and to be more cognizant of that first class period and what you do in it with the students. For example, instead of taking role and going through the syllabi, try a different approach. Utilize ice breakers and other content related activities that set the stage for the next 15 weeks. (ice breakers can be used no matter how many times you have had the same students in a course). If you wait to present the syllabi in the second class period, the students are more ready to listen and more attentive to it and your outline for the upcoming course, especially since nearly every other professor the student is experiencing on the first day is going to be going over the syllabi. And if you are the third or fourth or even fifth professor of the day for that student, they are not going to be listening to you or engaged in your syllabi presentation.

Experimentation Stage

The experimentation stage of the teacher/student relationship occurs when the professors are discovering what works and what doesn't work with their students in that course. Examples include small group discussions, large group discussions, waiting for students to answer a question that you pose to the classroom or individually calling on students to answer questions. Likewise, the college students are also discovering what behaviors they can and cannot get away with without reprimand. Just because students are now at the undergraduate or graduate level, does not mean that they know appropriate classroom behaviors. So, faculty might find it helpful to provide behavioral expectations for their students within the course syllabi. It is also crucial for faculty members to remember what their own expectations are for the students and to implement those expectations from the beginning of the course. In other words, establishing the expected classroom behavior and to not be fearful of the students or their reactions to you. Fortunately and unfortunately, students and teachers frequently react to one another with these preconceived stereotypical impressions. Fortunately for both parties, this stage is usually brief, unless the teacher displays a lack of confidence in their teaching, is not prepared in behavior management, is not ready to handle classroom discipline, does not establish rules within the classroom, or does not follow the syllabi. So it is imperative for the professor to display confidence, establish rules, and follow their syllabi during the experimental stage.

Intensification Stage

How we communicate with others is learned early in our lives as a result of experiences we've had, and improving our communication skills can be challenging for some people. Both the professor and each individual student bring those past experiences into the classroom.

The intensification stage begins when the communication between the professor and student(s) improves. This can range from better interpersonal communication, to classroom discussions, to more correctly interpreting each other's emails. Both parties need to be ready and willing to communicate with each other. If either side is not ready or willing to communicate, the relationship will not mature. Typically, as the professor and students evolve in knowing each other better, this stage evolves.

Termination Stage

The only stage that is guaranteed to occur is the termination stage. This occurs when the class is ending. It is very possible for the professor and the student(s) to have a wide range of emotions as the semester is ending. If the semester has been difficult, a sense of relief can be experienced by all involved. If the semester has been great, then a sense of loss can be felt. If the course objectives have not been attained, the professor can feel a sense of failure for not fulfilling the course objectives. A semester might end and the formal teacher/student relationship might end, but there can still be a connection between the teacher and the student(s). This connection can range from a student just remembering that they had "such and such professor for a class" or the former student stopping by the professor's office just to chat the next semester or a few semesters later, to the professor/student having another class together, or the professor/student teaming up to conduct research together.

Additional thoughts

How long each of these relationship stages occurs varies and is ever fluctuating. When they occur during a semester cannot always be immediately determined. Being able to recognize which stage you are in with your students during the semester can assist you in understanding interactions, reactions, and tensions between faculty and their students at the macro and micro levels of classrooms relations. In allied health education, as in many other allied health professional preparation programs, the students are also going through these stages with their other professors and also with their clinical instructors. The stages of the teacher/student relationship are one of the many teaching tools in pedagogical intelligence.

THE "TEACHING PROFESSOR" AND THE SCHOLARSHIP OF TEACHING

Webster's Dictionary defines teaching as "to cause to know something" and lecturing as "to deliver a discourse before an audience or class, especially for instruction."³ Are you a teacher or a lecturer? College teaching is a fascinating and dynamic process. It can also be an isolating and lonely experience if we do not talk with others about teaching and especially about our teaching experiences. Becoming a scholar of teaching requires that the teacher to come to peace with the fact that they do not have or need to reach every student every day in every class period. It is also important to acknowledge one's own doubt(s). The doubt about one's teaching, about one's preparation, about the exam you have just spent hours writing, administering, and grading and all of the emotions that have come over you in those processes. For many it is the doubt about the academic commitment of a student, a small cluster, or all the students. Sometimes it is not always the attainment of information/knowledge as much as it is the development of teaching and learning maturity (ie. The student's maturity and your maturity as a professor and as an evolving university faculty member). It is important that faculty members dialogue with other faculty about teaching. It is also important that you talk with other faculty members about your teaching. Scholarship doesn't always have to take the form of traditional research articles in refereed journals....there is scholarship in teaching and the exploration of teaching.

Ernest Boyer was the preeminent educator of the last fifty years and has had a profound impact on the academy. Boyer stated that the scholarship of teaching can be viewed as equal to traditional research, but it will need to undergo assessment to gain that equal viewing.⁴ Boyer's thoughts were further expanded by Glassick, Huber, Maeroff who recommended six standards for the scholarship of teaching.⁵ These standards include: (1) clear teaching goals, (2) adequate teaching preparation, (3) appropriate teaching methods, (4) significant teaching results, (5) effective teaching presentation, and (6) reflective teaching critique of both the class period and overall semester. Another evolution of the scholarship of teaching came in 2004 with the book *Teaching as Community Property: Essays in Higher Education*.⁶ This landmark book told educators that they needed to publish their teaching efforts and communicate their teaching results with their disciplines and also with other disciplines. This concept has hence become known as "teaching as community property." Shulman also makes it clear that an effective scholar of teaching has both content knowledge in their discipline and also knowledge of pedagogy.⁷ Pedagogy is threefold: (1) the overall principles of teaching and instructional methods that have been established through years of practice and research; (2) the successful teaching methods that have been applied to your field of study/discipline; and (3) understanding the principles of learning and learning styles. Pedagogical concepts 1 and 3 are well established. What is not well established in most academic disciplines is concept 2.

Many faculty (whose academic area is outside of teacher education and preparation) can incorporate the exploration of teaching within their subject matter. This is known as being a scholar of teaching. Many academic fields need more published articles in the application of teaching pedagogies within their subject area. This is frequently known as being a scholar of college teaching and can include, but is not limited to, the publishing of one's teaching experiences, the research one does related to one's teaching, and the research related to the student's learning from one's teaching. While one does not need to publish in order to be a scholar of teaching, Boyer strongly stated that a scholar of teaching also publishes in the scholarship of teaching.⁴

Another situation that inhibits development is that college educators believe that all 20+ chapters of a textbook must be taught in a 15 week semester. That notion needs to be discarded. It is not necessary to explore every chapter in a textbook by the end of

the semester, especially if the content knowledge of assigned allied health educational competencies and proficiencies are not in some chapters. Teaching less can result in the students learning more and can also provide opportunities for evolving educators to explore new teaching ideas.

Another myth about college teaching that needs stating is that people do not learn to teach by simply giving them information about teaching. Instead, people learn to teach through dedicated application, practice, reflection, feedback, revision, and adaptation. While many faculty have become comfortable with and dependent upon PowerPoint® presentations, it needs to be acknowledged that technology is a tool and not a teacher replacement. Try low tech teaching. Low tech teaching is not using technology to deliver the information. Low tech teaching frequently results in high touch teaching. High touch teaching is when you reach students at the core of their being and they truly grasped the information, and will retain that moment in their evolution as a student. Table 1 contains the 8 simple rules for the “teaching professor” that were shared in the ongoing publication, *The Teaching Professor*.⁸

Table 1: 8 Simple Rules for the “Teaching Professor”⁸

1. Emphasize the most critical concepts continuously.
2. Provide students with a visual aid when explaining abstract concepts.
3. Rely on logic when applicable.
4. Use in-class activities to reinforce newly presented material.
5. Help students create a link when teaching something new.
6. Recognize the importance of vocabulary in a course.
7. Treat students with respect.
8. Hold students to a high standard.

Faculty who practice the scholarship of teaching spend time in carefully designing techniques to examine, interpret, and share what they’ve learned about teaching. And they improve their teaching in an ongoing process. Faculty who practice the scholarship of teaching also contribute to the scholarly community of their discipline with their scholarship of teaching. Another characteristic of faculty who practice the scholarship of teaching is that they are curious about the ways in which students learn and the effects of their teaching practices on that student learning. The scholarship of teaching also has characteristics that make it different from other forms of scholarship. These different “scholarship of teaching” characteristics include the curiosity found in the discovery, integration, and applications of and about teaching; the examination and interpretation of teaching; as well as the sharing of one’s own learning about teaching with others, and the exchanging of teaching ideas.

The scholarship of teaching professor also engages in classroom research. The scholarship of teaching involves experiencing emotions that range from the exhilaration of an emotional high when everything went perfectly and the planning and teaching was flawless...to an emotional low when nothing went according to one’s planning and one deemed it and oneself a failure. A nickname for these failures is “classroom clinkers” and they can provide learning experiences, especially when turned into a positive experience by viewing them as an unplanned lesson for the teacher and students. The students can be consulted as to why it clinked and the teaching professor can gain new insight into their student’s ways of thinking and learning. So, to turn a clinker into a positive experience, simply ask the students why the idea “clinked.” Using the term “clink” can ease the tension and both parties can laugh and learn from each other. This can bring closure to the experience and both the professor and students can move forward in their relationship. Having closure on the clinker can also prevent the unsuccessful activity from haunting the professor for the rest of the semester. Do you practice the scholarship of teaching? Are you a “teaching professor”? These are questions that all faculty in the preparation of future allied health professionals might struggle with or embrace on a regular basis.

CLASSROOM ASSESSMENT TECHNIQUES

What is your definition of classroom assessment? Quizzes? Exams? Research papers? If you believe that student’s knowledge acquisition needs to be critically evaluated and analyzed via a quantitative approach, then the answer is a “yes.” The most familiar assessment techniques are the quantitative methods of assessment. Quantitative data from traditional exam questions and opscan/scantron technology can provide valuable information on one’s exam writing abilities, how well the students understood the questions one wrote, and one’s students’ memorization of that exam material. Unexpected answers given by students on traditional exam questions in the true/false, multiple choice, matching, and even short answer/essay formats may suggest a disconnect between what the professor was teaching and what the students were learning. What seemed crystal clear to the professor during the class lecture might be found through traditional exam questions to be misunderstood or not comprehended by the students. It is normal for one to yearn for other ways to examine student learning and for self examination to result in the questioning of one’s teaching, and subsequently student learning. Faculty do need ways to assess student learning during the semester, but maybe exams are not the best way to assess the knowledge of today’s millennium students.

Unfortunately, qualitative assessment does not frequently enter one's thoughts. What does qualitative assessment conjure up in one's mind? How does one go about qualitatively assessing students? How does one go about qualitatively assessing teaching? These two qualitative assessments go hand-in-hand with each other.

Faculty need to be researchers of their teaching and exploring alternative assessment options can help in that self-research. One of the best qualitative assessments of teaching and students learning is that of Classroom Assessment Techniques.⁹ Classroom Assessment Techniques (CATS) have been developed by Angelo and Cross.⁹ In their well known book, *Classroom Assessment Techniques: A Handbook for College Teachers*, they provide inquiry into our teaching and student's learning, stating

CATS allow for the teacher to be a student of their teaching and classroom dynamics. CATS allows for qualitative analysis of your students rather than the quantitative analysis of exams and quizzes. The qualitative information includes a "what," "how much," and how well your students are learning from your teaching.

Angelo and Cross also ask the reader to ask themselves two elusive questions as college educators: 1) What are your students learning? and 2) How effectively are you teaching? Classroom assessment techniques provide allied health educators with the opportunity to be researchers of their own teaching and with qualitative data from their students.

Purpose

Classroom Assessment Techniques (CATS) serve two purposes. The first purpose is assessing students in ways that are dramatically different from the traditional methods of exams and quizzes. The second purpose is assessing one's teaching so that one can be a student of one's own teaching and evolve one's teaching skills. CATS can guide students in learning how to study by analyzing their learning process. CATS can also help classroom teachers to objectively analyze what happens in their classroom. And they can guide students in analyzing their learning processes.

Improving Teaching Via CATS

CATS allow the teacher to improve their teaching by gaining a deeper understanding of the learning taking place within the classroom and students.^{10, 11} Teaching can be improved by learning what is and is not working in the conveyance of information to students and the learning and application of that knowledge. Via CATS, one can actually structure one's teaching lesson plans and plan active learning strategies based upon the results of the assessment chosen. CATS can also be used to gather feedback daily, weekly, or periodically throughout the semester. CATS can also help students reflect on their learning and aid in the monitoring of their learning as the semester proceeds.

CATS can also aid the teacher in developing rapport with the students. By informing the students that you are studying your teaching, the students see you differently and that you care about your teaching and likewise their learning. Also, if the professor is having a particularly difficult semester with a group of students, CATS can be incorporated to help dispel the student's issues so that the overall final course evaluations are not impacted.

Planning for CATS

As with all teaching strategies, it is important to plan the CATS. There are three phases of planning for CATS. The first phase is to decide to use a CAT. The second phase is to implement the CAT. The third phase is to respond to the results of the CAT. CATS are best used as planned classroom events rather than unplanned and spontaneous events. The professor can establish the usage of CATS by explaining them in the syllabus, listing them in the semester topics, and putting them on the course calendar.

To Grade or Not to Grade CATS?

CATS are best seen as a form of feedback rather than a formal evaluation. Whether to assign a grade/point value or as ungraded is, of course, the teacher's decision. However, most users will suggest ungraded or very minimal grade values for CATS.

Categories of CATS

Angelo and Cross organized all of their CATS into three over-arching categories: (1) assessing course-related knowledge and skills; (2) assessing learner attitudes, values, and self-awareness; (3) assessing learner reaction to instruction. The actual individual CATS that fall into each of these categories are found in Table 2.

Table 2: Classroom Assessment Technique Examples***CATS that Assess Course-Related Knowledge and Skills***

Background knowledge probes
 Focused listing
 Misconception/Pre-conceptions
 Empty outlines
 Memory matrix
 Minute paper
 Muddiest point
 Directed paraphrasing
 Application cards
 Invented dialogues
 One sentence summary
 Pro/Con grid
 Student generated test questions.

CATS that Assess Learner Attitudes, Values, and Self-Awareness

Classroom opinion polls
 Everyday ethical dilemma
 Profiles of admired individuals

CATS that Assess Learner Reaction to Instruction

Chain notes
 Exam feedback

Using CATS in Allied Health Education

CATS have been widely used and reported on in the literature and have been applied across nearly every academic discipline. Thus far, however, there are no published articles related to CATS usage in allied health education. The 18 classroom assessment techniques that are listed in this article are not an exclusive list of the CATS developed by Angelo and Cross. They have developed over 50 CATS, and these are just the ones most easily applied in allied health education courses. The CATS also do not need to be applied identical to the way they are presented in Angelo and Cross; the authors encourage modification.

CATS need to be introduced to the students. Included in this introduction needs to be the “why” and “how” of these CATS. Why this assessment technique is being used? How the assessment results are going to be used? Once the professor receives the results, it is worthwhile to implement a qualitative approach in reviewing the student’s answers. For instance, one thing to look for might be common results that can be categorized or patterns that might surface. Once this analysis has been concluded, it should be followed up in the next class period and the results shared with the students. Any errors that might have surfaced in the results should be clarified. The final step is to tell the students what was learned about your teaching and how you intend to improve your teaching, and subsequently, their learning.

ACTIVE LEARNING STRATEGIES

The final contemporary pedagogy is that of active learning strategies (ALS). Active learning requires students to be engaged in classroom activities that have them analyzing, synthesizing, and evaluating, all of which involves students in higher order thinking. This can be assignments that require reading, research, writing, discussion, problem solving, creating, role playing, brainstorming, debating, and case studies, just to name a few higher order thinking skill activities. The pedagogical techniques are nearly endless for the professor who is centered in student development.

Allied health has been involved in active learning from the inception of the various allied health professions. The difference between then and now is we have a name for the teaching techniques. But this teaching technique is not one directional from teacher to student. It also involves the students to return the learning back to the teacher. The teacher also needs to be self-reflective about their teaching and what constitutes teaching and what constitutes learning.

Active learning requires the professor to become a teacher. A scholarly approach to instruction is required to become a teacher. One might know one’s discipline, but how one translates this to active learning in the day-to-day classrooms becomes the challenge. It also requires one to step away from behind the comfortable podium and PowerPoint® and to experiment with

alternatives in instruction and teaching. This can cause discomfort to the instructor who has not been trained in teaching. Some instructors can even experience anxiety due to the admission of this lack of preparation in teaching or even simply due to the change in teaching methods causing the anxiety. Many disciplines do not have teaching preparation included in their academic graduate curriculums, thus new faculty have limited experience teaching before they set foot into a college classroom. The combination of limited or non-existent preparation in teaching and newness to the college classroom can be lethal and actually encourage lecture and PowerPoint® as the pedagogical technique. The new faculty member is usually also experiencing a confirmation of their subject matter proficiency with each class preparation. So, lectures and PowerPoint® slides play right into that scenario. Maybe it is expecting too much for a new faculty member to be engaged in their own instructional strategies? Another concern involves the lack of incentives or even encouragement for instructional exploration on some college campuses. While many campuses have been developing teaching centers for faculty, they remain under utilized by the majority of faculty. Also, many aspiring (and even veteran) faculty do not have a teaching philosophy. Do you? If you do not, you need to develop one, as many academic job searches are requiring one. If you do have a teaching philosophy, have you ever shared it with your students? Sharing one's teaching philosophy can help bridge the gap between you and the students in your classrooms. It can also aid the students in their understanding of who you are as an educator.

Classroom management can be challenging for the most experienced classroom teacher. But, for the new teacher, issues surrounding student behavior (even in a college classroom), what can be accomplished within the time period of the class, technology concerns, following the syllabi, datelines and deadlines, and discomfort in managing large numbers of students can be a greater challenge than the teaching of the material.

How can newer faculty and experienced faculty members connect with success with active learning? A suggestion is to start with some of the simpler ALS techniques as these could involve low risks for both the instructor and the students.^{12,13} Once these low risk active learning strategies (ALS) are mastered, they can proceed to strategies of more complication, and once these are mastered, the most completed strategies can be attempted. It is important for the instructor to recognize that their role in active learning is that of a facilitator of student learning.¹⁴ Being a facilitator does require the surrendering of some control of the classroom. Also, active learning pedagogy does not require a complete abandonment of traditional lecture. Rather, it can be incorporated into a lecture format. For instance, listening practices could include short writings in which individual students react to lecture material or complex group exercises in which they apply course material to real life situations/problems. Cooperative learning techniques are more formal structured groups of students that are assigned complex tasks that could be multi-step exercises, research projects, or group presentations. In cooperative learning, students are usually grouped in 3 or more. Collaborative learning is a classroom strategy in which the instructor and students are on equal footing and together they design assignments, choosing texts, and presenting material to the class.

Faculty need to prepare the students in advance of active learning and an ALS. It is incorrect to drop an ALS onto the students in a classroom with no advance preparation or warning. Instead it is important to prepare students for the ALS. Preparation includes explaining the ALS, the benefits to their learning, and how it ties into the course syllabi objectives. Table 3 includes active learning terminology that is frequently used in the writing of course objectives and might be found in one's syllabi. These terms are used in the course objectives, but advance planning is not common for the active learning strategies that are going to be used to encourage the learning. Sometimes the active learning that is promised in the course objectives are forgotten about and do not occur.

Table 3: Common Active Learning Terms

| | | | | |
|--------|------------|---------|----------|-------|
| Engage | Discover | Reflect | Analyze | Apply |
| Read | Synthesize | Process | Evaluate | Write |

So, linking ALS with your syllabi objectives can help in the preparation process with your students. Another suggestion is to have a section in your syllabi establishing that the course has an active learning emphasis. While preparation for active learning and implementation of the ALS are important, just as valuable is successfully concluding the active learning in which feedback about the ALS that was used is elicited from the students and the strategy is evaluated.

There are two stages to the ALS: the instructor's planning for the ALS and then also during the class period in which the ALS is being used. During the in-class usage, there are 3 steps to successfully carrying out the ALS: 1) preparation for using the ALS, 2) implementing the ALS, and 3) evaluating the ALS.

There is limited quantitative research on ALS and more is definitely needed. But qualitative research is abundant. This research also includes experiences with, literature reviews of, and teaching ideas using ALS.¹⁵⁻¹⁸ Also, many college/university teaching centers have resource materials in ALS. Some campuses also have workshops and study groups available in ALS.

A common consensus among ALS advocates is that today's college students are able to be more effective in their learning when they are engaged in learning through ALS.¹⁹⁻²¹ ALS can be incorporated into a classroom question and answer session by posting a follow up question related to how the student(s) arrived at their answer. This could be considered a strategy within a strategy. Table 4 lists just a few ALS that allied health educators might already be using or could use in their courses.

Table 4: Examples of Active Learning Strategies

| | |
|---|---|
| • Modeling clay and play dough used for making life-like joint models | • Panel Discussions |
| • Contests using the formats of popular games such as Jeopardy, Operation, Pictionary, and Scrabble | • Case Studies |
| • Fish Bowl Quizzes | • Group Projects |
| • Undergraduate Research | • Debates Related to Controversial Topics |
| • Role Playing | • Response Clickers |
| • Journaling | |

CONCLUSIONS

There is a direct correlation between active learning and active teaching, and passive teaching and passive learning. Allied health educators can utilize both active learning strategies and classroom assessment techniques for a dynamic classroom environment for both the faculty member and the students. Active learning strategies enhance the faculty member's teaching and the learning experience of the students. Classroom assessment techniques provide feedback regarding the teaching skills of the educator and also the learning that is taking place within the students. Both ALS and CATS are win-win for the educators and the students. Allied health educators can create more effective classrooms by incorporating ALS and CATS.

Allied health educators can become a "teaching professor" by becoming a scholar of their teaching. Allied health professors need to publish their experiences and research on college teaching and its impact on student learning. More research is needed in the art of teaching in allied health in order for the allied health professions to continue to evolve and in the professional preparation of today's and tomorrow's professionals. By researching and publishing in the area of pedagogy and its application in allied health education, all allied health educators can sit at the table with one another knowing that there are shared experiences in all allied health classrooms. Also by enhancing one's self awareness of what stage is occurring in the teaching/student relationship, the faculty member can better respond to student questions, issues, and concerns when they occur in the classroom or during office hours, thus nurturing and enhancing their relationships and avoiding conflicts.

The stages of teacher/student relationships, the teaching professor, active learning strategies, and classroom assessment techniques are unique concepts that need to have their applications applied in allied health education.

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