Lecture is not a Dirty Word,

How to Use Active Lecture to Increase Student Engagement

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Abstract

Lecture is a much maligned classroom method of instruction. Like any other technique employed by educators, there are both effective and ineffective ways to deliver content through a lecture format. Respecting that the college learner has changed, active lecturing strategies maximize student learning of course content, engaging both modern learners and teachers at higher levels. The active lecture strategies presented are grounded in Chickering and Gamson's seven principles for good practice in undergraduate education and provide a balanced approach to providing content and opportunities to connect to the content that help students not only master the material presented in class, but also the out-of-class material students access in their readings and experiences.

Keywords: Student engagement, Active lecture, Active learning, Academic entitlement

1. Introduction

Similar to other techniques employed by educators, there are both effective and ineffective ways to deliver content through a lecture format. When successful, lecture is an extremely efficient method of delivering vast amounts of content in a variety of settings (Armbruster, Patel, Johnson & Weiss, 2009; Barnett, 2006; Silver & Perini, 2010). Some lecturers are dull and cause not only the student, but also the professor to become disengaged (Auman, 2011). Clark (2008, p. 39) describes traditional lecture as the professor talking "at the students while they take notes without thinking." Most college and university professors use passive lecture as the primary instructional strategy (Braxton, Jones, Hirschy & Hartley, 2008). Nevertheless, researchers found this method fails to motivate students and encourages superficial learning, such as "cramming" to remember information for exams (Armbrtuster, et al., 2009; Gauci, Dantas, Williams, & Kemm, 2009). Questions arise regarding whether students will attain the skills they need to succeed after college.

Burgan (2006) defends the practice of lecture as a whole, through the examples of dynamic lecturers who inspire undergraduates. Silver and Perini argue that faculty should lecture, but make it more effective. They propose that when students remember the content in a lecture, it is a success. If students do not remember what was presented, it is a waste of time. Brugan suggests developmental differences exist in student ability, from when they begin higher education to when they graduate. Students new to college or university tend to need lecture and direct instruction more, as they are not yet capable of mature discussions. She further maintains that lecture saves students "the irritation of having to spend his precious time listening to the opinions of classmates rather than a clear presentation of known facts and issues" (p. 34). Temporal issues are raised in much of the research surrounding both active learning and lecture. As students determine their learning style preferences, some become less tolerant of other modes of instruction. One student might feel annoyed by the direct instruction while another student makes connections to material in the lecture, this may be a reflection on the egotism of current students. Many current undergraduate students appear more interested in receiving a high grade or having the "right" answer recorded in their notes so that they can regurgitate it on an exam than in socially constructing knowledge (Armbruster, et al., 2009; Greenberger, Lessard, Chauansheng, & Rarruggia, 2008). While socially constructed knowledge is recognized as good practice in undergraduate education (Chickering & Gamson, 1987), current undergraduates do not value it.

To better meet the needs of undergraduate students, professors need to acknowledge how their college learner has changed (Twenge, 2013). The undergraduate student body is more diverse (McGuire, 2011), narcissistic (Twenge &

Foster, 2010), and academically entitled (Greenberger, et al., 2008) than those in the past. Greenberger, et al. found that academic entitlement did not vary across years of college, but that the level of academic entitlement may be determined before a student enters college. This tendency was consistent with the anecdotal evidence Greenberg, et al. reported in the rise of students who request higher grades, and the lengths to which they expect professors to go to accommodate their preferences. Twenge and Foster (2010) reported that high school students enter college with unrealistic expectations for success and a heightened sense of individualism. These findings are corroborated with those of Gentile, Twenge, and Campbell (2010) that found an increased emphasis on self-worth with small increases in academic competence for high school students and college students reporting extremely high self-esteem.

Students with high levels of academic entitlement, tend to have a poor work ethic and a low level of consideration for how their behaviors may impact others (Greenberger, et al., 2008). Low concern for others supports Brugan's observation that students comment "listening to the opinions of classmates" is an irritant. Both Armbruster, et al. and Greenberger, et al. found that current students are more concerned with the extrinsic reward of getting a good test score or grade than they are with the intrinsic rewards of learning and content mastery. The natural curiosity to learn appears to have dissipated with contemporary students in higher education. Mossing (2009) counsels faculty that while the faculty's practice of grade inflation may be partially responsible for student academic entitlement (Greenberger, et al., 2008), there are also faculty practices that can reduce academic entitlement.

Chickering and Gamson (1987) identify good teaching practices in their call for faculty to improve undergraduate classroom teaching to better meet the needs of college students. They state that faculty can advance undergraduate education themselves, if a focus on improvement is maintained. Armbruster, et al. assert that faculty can successfully change instruction without altering course content. Chickering and Gamson proposed seven, much cited and reproduced, principles for good practice in undergraduate education (1. Encourage contact between students and faculty, 2. Develop reciprocity and cooperation among students, 3. Encourage active learning, 4. Give prompt feedback, 5. Emphasize time on task, 6. Communicate high expectations, and 7. Respect diverse talents and ways of learning). Twenty-five years later, these principles guide program and course revision, specifically to encourage active learning. Originally, listed as one of the seven principles, active learning has been redefined over time to include all of the seven principles for good practice.

2. Active Learning

Odom, et al. (2009) describe the philosophy of active learning as one that emphasizes student "responsibility for their own learning as well as that of their peers" (p. 108). There are four basic elements of active learning strategies: talking and listening, writing, reading, and reflecting. These can be combined in any number of ways to create specific active learning strategies. Using active learning strategies increases motivation, improves critical thinking skills, increases retention, improves interpersonal skills and transfer of new information (Gregory, 2010). Odom, et al. assert that active learning "promotes a higher level of learning," where students go beyond the content, to look at the connections within and to the content and how those connections were formed. Armbruster, et al. concur, that the practice of explicitly making metacognitive links to content, and the process of explaining and applying learning improves not only student outcomes but also student attitudes.

Braxton, et al. (2008) found that use of active learning plays a major role in first year student retention as well as positive influences on social integration. Social integration mitigates some of the individualistic traits associated with academic entitlement. Braxton, et al. also found that students who experience active learning during their coursework view their coursework as personally rewarding. As such, active learning builds intrinsic motivation not generally found in students with high levels of academic entitlement. Active learning strategies can take many forms from the most advanced true inquiry model to a modified lecture format.

3. Using Active Lecturing.

While it seems like lecture is the opposite of active learning, there are strategies to make the delivery of information more active. There is no need for a faculty member to create new ways to engage students actively during a lecture, there are many activities and strategies that have already been made widely available (Angelo & Cross, 1993; Barkley, 2010; Bonwell & Eison, 1991). For lecture to be most beneficial, students need to have familiarity with the information on which it is based or the assigned pre-readings. Passive reading, for most students, does not result in the level of retention required to fully access lecture material. Students can use many strategies to promote active reading, and professors can facilitate this through direct instruction of active reading strategies, or providing reading questions that help students focus on the essential information from the readings. Text generated questions, to check for understanding, are underused as they are often seen as extra, and not directly connected to the class. Direct instruction on how to be a more active reader will likely help the student in all their classes, by building their reading

comprehension.

Another strategy, to build familiarity with the content before class, is to make lecture notes available before the class period. This teaching tool is not a suggestion that a lecture script be posted, but rather a skeletal outline of ideas, or a PowerPoint/Keynote presentation that does not include the full text of the lecture. One way to achieve this is to use the notes feature in the chosen presentation program. More detailed information can be in the notes section below each slide for easy viewing by faculty, but the handouts, when printed, will only have bullet point items. Using presentation software such as Keynote or PowerPoint does not make a lecture good or bad. It does not engage students any more or less than an overhead transparency did. If faculty read directly from a projected slide, what is the student doing? Clark found that there is a movement away from PowerPoint, and presenters are "rediscovering the impact of old-fashioned speechmaking" (p. 40). In active lecturing, projected slides merely identify big ideas, the details and coaching come in the lecture and it is up to the student to create the connections and build learning. To address the concern of students having the questions that may be asked in class, in advance, a student version of the presentation can be saved that merely has a placeholder slide that says "thought provoking question," "warm up," or "think/pair/share activity." By providing a structure for notes on the lecture in advance, students have the opportunity to fill in gaps that may exist in prior knowledge, and cue up experiences and outside information that can enrich discussion (Gregory, 2010). Silver and Perini suggest that providing these structures during class also allows students apply past knowledge in a new context. These practices align with the dynamic lectures that Brugan refers to when she says, "A fine lecture can reverberate throughout the course in mutual conversations and comparisons, creating a build-up of expectation for the next and the next lecture" (p. 34). Rather than require students to wait for the next lecture, active lecture permits students to build the connections right then, to interact with the professor, their peers and develop lasting, personal learning, during the lecture.

Similar to a narrative, each of the three parts of a lecture each has a distinct purpose. The initiation of a lecture, seeks to capture students' interest, engage them, and motivate them to learn. During these first 5-10 professors can minutes use a number of activities that connect to the student and make them relate prior knowledge to the lesson ahead. While essential that the students connect to the content, there is not a singular right way to hook the learner during initiation. After the initiating activity, a quick way to activate students is for the professor to ask them to write a prediction of what they think will be next with an explanation. The act of anticipating what is coming next is an active process and builds retention of content.

The middle of the lecture, where most of the content delivery happens, is another opportunity to use brief active lecture strategies. Students have a hard time staying focused for more than 12-15 minutes of traditional, lecture-style, content delivery. Brugan refutes this statistic, but pausing every 12-15 minutes permits students to actively process the new information and should help keep students focused. One activity that is useful in the middle of a lecture is a question generating technique. "Stump your neighbor" requires pairs of students to create a question that they feel is very difficult. These questions can be shared out loud, collected on cards, texted, e-mailed, or using a classroom responder system the questions can be projected immediately. Through the level of questions posed and the way they are answered a professor can informally assess student understanding, and this process builds a collection of questions for use in other class activities, guided reading, or even quizzes and exams!

The closure of the lesson or lecture, like the conclusion of a good narrative, ties up loose ends, summarizes main points, and opens opportunities for connections beyond the story. An effective closure activity encourages, or even demands that students make connections to the presented material, and extends the learning beyond the university setting to the student's world. Questioning strategies are common closure activities, but any active strategy that engages the student in synthesizing, applying, or summarizing is sufficient. Questions used in closure activities tend to ask students what they found unclear (to tie up loose ends), what do they feel were the most important points (summarizing), or how would this topic be seen in... choose an alternate setting. For physical sciences a go to question might be: would we expect to see the same results if there were no gravity? For social sciences the question might require students to reflect on the lesson from a different group's perspective, or a different time period. If a professor struggles to find a good closure question, a safe activity is predicting. "Based on the syllabus, what comes next? Why do you think the material today presented before next class' topic?"

4. Ways to Begin Active Lecturing

Questioning and other monitoring strategies are at the heart of active lecturing. They permit the professor to get a feel for where the class is right then in terms of understanding the content and their readiness to build upon prior learning. There are both formally and informally published techniques to guide questioning and monitoring during a lesson, and brief descriptions of several methods are included here as a primer. There are high-tech and low-tech

ways to embed active learning into a lecture, even thought the line between these may blur. Many high-tech strategies can be adapted to be low-tech and vice versa. The high-tech strategies involve some piece of hardware (computer, phone, tablet, specialized responder) to access either Internet-based or individual computer-based systems. A benefit to high-tech strategies is that by the nature of gadgetry students are apt to see them as more "up-to-date." With this currency comes the challenge of training and the possibility of technical failures.

4.1 Audience Response Systems

A synchronous method of obtaining real time feedback, audience response systems, or clickers, use a piece of hardware connected to the professor's computer that receives infrared or radio frequency responses from audience members with responders. Researchers (Armbruster, et al., 2009; Bruff, 2009; Coldwell, Craig, & Goold, 2011; Kolikant, Drane, & Calkins, 2010; Schell, Lukoff, & Mazur, 2013) found these systems are useful to promote engagement, identify student misconceptions and initiate peer-to-peer interactions. A challenge that Barnett noted with the use of clickers stemmed from the way the technology was used. Barnett cited that students reported rampant cheating on clicker tests and that "a good percentage of the questions posed in class were irrelevant or unhelpful" (p. 11).

Poll Everywhere. Unlike the commercially available audience response systems, Poll Everywhere is an Internet-based system where students use their own phones to text in responses. Students do not need to purchase a piece of hardware and depending on how the professor structures the subscription, it may cost the students nothing to participate. Poll Everywhere is not limited to multiple-choice responses the way many audience response systems are. If the professor chooses, the Poll Everywhere can be set up to work as a blog, permitting students to have a running commentary on the lecture content during the lecture, without the openness and possible security concerns of a twitter feed.

Unlike synchronous, high-tech means of getting audience involvement during the lecture, asynchronous forms of technology permit the lecture to continue after class has ended. Learning management software, like the products from BlackBoard™, encourage student-to-student interactions through the discussion board, blog, and wiki features. Students can post resources for their colleagues in advance of a class presentation and then can continue the conversations after the class time ends. The asynchronous nature of most learning management software enables students to work when it is most convenient for them, whether it is early in the morning or late in the evening. The extension of the class time allows students who need more time to process information to become a part of the conversation, something that would be difficult in the classroom setting.

4.2 Low-Tech Strategies

A professor does not have to have an audience response system, or be comfortable with students entering responses on their laptop, tablet, or phone to integrate active lecturing strategies. There is something to be said for the low-tech classroom, where social media are replaced with face-to-face interactions. Each of the following low-tech strategies can be implemented with no gadgetry, or Internet connection. Each individual strategy can be modified or combined to create new strategies, as needed for a particular lecture. Isaac Newton wrote in a letter to Hooke, "If I have seen further it is by standing on the shoulders of giants." This too is true of classroom activities, while they are originated by one, they are then adapted, modified, and shared by many. Below are activities and strategies that have been created and shared widely.

Student Summaries. During class, the professor pauses and asks students to explain to a partner the main idea just presented. This activity may be modified where the professor asks students to write a summary in their notes the first time, discusses as a large group, then resumes the class. Later in the same class students briefly summarize to a partner.

Pair/Share. This pedagogy is not a single strategy but a group of them. Often this teaching technique is seen as a Think/Pair/Share or a Write/Pair/Share. In this activity, teachers ask students to summarize what they feel is the main point of the material that has just been presented, consider how they might apply a new concept, or respond to a specific question (1-2min for think/pair/share, 2-4min for write/pair/share). Then they briefly discuss their thoughts with one other person, where they may agree, have approached it differently, or agree to disagree (2-3min). Finally, the teacher randomly selects a few people to summarize in 30 seconds the conversation the pair has just had (2 -3min). Depending on the group and the time constraints the time spent reporting out and large group discussion can be expanded, limited, or eliminated.

Free Write/One Minute Paper. This strategy takes approximately 2-3 minutes. Students are asked to write for a minute (or 2-3 minutes) on a topic or in response to a question. This is a great way to initiate a lesson or get closure

at the end of a lesson. Free writing is also a useful tool when asking students to expand their thinking from a self-centered model to considering others. This process provides the opportunity for students to build connections to prior knowledge and experiences and record any new ideas that have been generated. Students who process slowly are afforded the opportunity to process material and fully develop their beliefs in relation to the content. This extra time allows these students the ability to more fully participate in the discussions. This technique can also be useful to reign in a discussion that has strayed from the intended lesson or a student question that has provided a new way to look at a topic.

Focused Listening. In this technique a question is posed before a presentation and students brainstorm for 5 or so minutes the answers to the question. This anticipatory activity prepares the student for the presentation or video clip. After the video clip, presentation, or lecture, students compare their thinking after the presentation. This activity serves not only to help introduce a topic or concept, but also to wrap up and assess what students gained from the presentation. Questions may be general, such as "What is research?" or very targeted, "How did the revolutionaries at Seneca Falls align with traditions even as they sought to change them?"

Question and Answer Pairs. Students pose one or two questions* in response to a class lecture, activity, or presentation, then with a partner, they ask each other their prepared questions (5-15min *Questions may be prepared at home prior to class or in class, preparing questions in advance of class will save in-class time).

3-2-1 Protocol. In this protocol the professor asks learners to write down three ideas, issues, or concepts presented, two examples of how the information is applied or used, and one remaining question or area of possible confusion. This list can be shared with a partner, a small group or reported out to the larger group.

10-2 Protocol. This protocol is really more a pattern of work. The professor shares information for ten minutes and then stops for two minutes to give the learner a chance to pair/share, ask questions to clarify their notes/ understandings, fill in any gaps, or consult with a neighbor to build understanding.

Note Check. In this activity, the professor allocates 2-5 minutes for students to check their notes with a partner or small group. This encourages them to clarify main points, address questions or generate new questions. If students feel their notes are adequate the way they are, they can write a summary paragraph of the key points.

All of the aforementioned strategies engage students as a more active member of the classroom community. Many of these ideas can be implemented in even the most restrictive lecture hall. If the class space offers more flexibility or an open area, a kinesthetic element encourages students with differing learning styles to connect and process the content into their long-term memory stores. Additionally, infusing lecture with bits of relevant humor may increase retention of material.

5. Real Life Implementation

With the goal of transferring content from the lesson to students' long-term memory stores, these active learning strategies aid in the retention process. As with any classroom strategy, there are going to be days when active lecturing works well and days when engaging the class is a struggle. Active lecturing introduces a new set of challenges for some professors. To help make active lecturing successful, start early in the semester, introduce a couple of the methods and use them frequently. Let the learners know why these active lecturing methods are being employed, and what benefits they might expect. When a new protocol or a new task is introduced, make sure the instructions are very clear. Clearly state the goal to be met, the outcome students produce, the time allotted, and if they are working in groups, how the groups are structured. One way to avoid having to repeat the instructions is to display them using a projector or another visual reference. Start small -- use some of the more easy to implement strategies first to build not only learner confidence, but also professorial confidence. Similar to low-tech methods to increase active learning, pedagogy is the most important component of a successful implementation of a technological approach.

Know that, when starting, there may be student push-back for either a high or low-tech approach. For some students the open-ended-ness of the tasks is very unsettling. There is a comfort in knowing that there is a "right" answer. Try to validate the learner's discomfort, but stay positive. Greenberger, et al. found that students with high levels of academic entitlement may exhibit aggressive behaviors when they do not receive high rewards for modest effort. If the term active lecturing is used frequently at the beginning of the class and engage in at least one (even small) active lecture activity every class at the start of the semester, the likelihood of push-back is reduced. If there is resistance, address it right away and directly, explaining the rationale for the activity and the expected benefits.

Because active learning is a balance between student learning centered activities and direct instruction, sometimes the results or solutions generated are unexpected. A clear statement of the goal, outcome, time allotted, and process

expectations can reduce this some. Using a non-verbal cue to warn when time is almost expired, such as flashing the lights, a bell, or timer, may help establish structure in the less structured parts of active lecturing. Additionally, before engaging in more complicated active lecture strategies, build expectations for learner conduct with more simple strategies. While it may take longer to set up active learning activities (Gauci, et al.), Armbruster, et al. found that after the initial redesign, there was no additional faculty time commitment and that the active lecture approach improved the faculty's morale and enthusiasm as well as the students'.

Sometimes active lecturing activities take longer. If active lecturing is practiced, students are generally more prepared to access other content independently. Evaluate what material the professor must cover in class, and what material can be accessed by learners on their own. Even though there is the temptation to race through material at the end of a class or course so that it is "covered," remember just because the information was presented, does not mean it was learned. Active lecturing strategies help maximize student learning of course content, and a balanced approach to providing content and opportunities to connect to the content help students not only master the material presented in class, but also the out-of-class material students access in their readings and experiences.

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