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The Challenge of Just-In-Time Teaching (JiTT): A Case Study in Music Education Classroom Pedagogy

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*"Tell me and I forget. Teach me and I remember.
Involve me and I learn."
-Chinese proverb as quoted by Benjamin Franklin*

It is nine o'clock in the morning in my "Intro to Music Education" classroom. The students enter the class room and begin to almost immediately begin debating important current trends in music education. Topics range from making sure music classrooms utilize a diverse range of repertoire (music) and literature; to LGBTQ+ students in the classroom; to teaching music to students with special needs; to the efficient use of technology in the music classroom. This is not your typical "sage from the stage" lecture. These students are actively participating and engaged from the moment class begins, and as the class continues, are engaged in the topics to be discussed at hand.

In this case study, I show how a student centered web-based learning theory known as "Just-In-Time Teaching" (JiTT) can help increase student engagement, preparation, and facilitate student learning with active classroom discussions and feedback from the teacher.

Background

The basis of the pedagogical concept behind JiTT is centered around Web-based pre-instruction assignments known as "warm ups". According to an article in *New Directions in Learning*, students respond to these warm-up questions and go to class with "a genuine interest and desire to learn the answers" (Novak, 66). Traditionally, students enter the class with no prior knowledge (or at least very limited) of the subject matter. However, their answers for JiTT lessons are submitted right before the class

begins, giving their instructor time to incorporate the answers from student responses into the lecture for the day. The logistics of the classroom (i.e. time, type of course, class size, facilities, personalities, etc.) depend on the instructor. "Teachers and students become a teaching-learning team, ready to begin the lesson with an awareness of the mental status of the class, making the learning experience as relevant as possible to a particular class at a particular time (Novak, 68)."

JiTT has been studied and evaluated a little under two decades, with those practicing educators borrowing eclectically from many current learning theories and instructional techniques (Bransford, Brown, and Cocking, 2000). JiTT should not be confused with distance learning or computer-aided instruction, even though it is a Web-based pedagogy.

Developing the JiTT Lesson

Utilizing current trends in music education, the instructor carefully crafted a successful series of JiTT questions for the course. Taking their cue from Guertin, Zappe, and Kim (2007), the instructor prepared several JiTT-based lessons using the following five steps:

1. Think about the lesson content and the lesson type. Is it an introduction to a new topic or a continuation? Is the primary purpose of the lesson to explore conceptual issues or to develop and practice procedural skills? Does it involve laboratory or field work? Is it a comprehensive review?
2. Identify the lesson parts. Does the topic involve a single concept or multiple concepts? Is a review necessary? Will it include demonstrations or hands-on

activities? How are the parts to be sequenced? How much time is to be devoted to each part?

3. List new concepts (words, definitions, examples).
4. Design a set of questions that probe for the understanding or misunderstanding of the concepts. If the lesson is part of a sequence, the teacher should design questions that require application of knowledge acquired in previous lessons. Ideally, the question set is broad enough to enable construction of the lesson content from student responses. Teachers should anticipate potential student responses. When the submissions are in hand, the teacher should look for well-articulated versions of the arguments they anticipated as well as for surprise responses.
5. Use the anticipated responses as a guide. Outline the lesson flow but be flexible enough for surprises.

JiTT questions can be constructed to help students deal with jargon and academic language. Formal academic language can be a serious barrier to deeper learning (Snow, 2010).

Questions

The students were given a different JiTT question each week for two weeks. After receiving the student responses, the instructor presented follow-up questions for short debate among the class. This was done one day a week, as the class met twice per week. The JiTT questions were based on topics discussed from the current political climate around education:

1. *Given the current administration, do you feel that charter schools should be given adequate funding from the federal government?*
 - a. *Follow-up: Should schools that protect certain minorities such as LGBTQ students (all of which are charter schools) be allowed to exist and be funded by the state and federal government?*
2. *Given the previous discussion in our last lesson, debate the thoughts on rote teaching*

versus note teaching in the current music education classroom.

- a. *With rote teaching being used for many multi-cultural ensembles, including those such as mariachi, have your views on its importance (if you favored note teaching) changed?*

Strategies for Implementing JiTT into a Classroom Lecture

JiTT differs from a traditional lecture course on two significant factors. First, once the Web assignment is done, the students will enter the class with a solid foundation into the learning process. The instructor, having perused the students' answers, will have a solid grasp on the current state of the students (Simkins and Maier, 2009).

Second starting the lesson like this allows the students to take ownership of the process. Due to this, JiTT satisfies two criteria:

1. Faculty thoughtfully construct assignments based on validated educational research.
2. Student responses constitute an integral part of the lesson, not merely an add-on.

According to Novak, JiTT encourages all students in the course to:

- Participate in and reflect on the learning and teaching process.
- Appreciate perspectives other than their own.
- Apply concepts as they learn them.
- Connect these to other parts of the course, other courses, and the wider world.

Likewise, Novak speaks to the usefulness of JiTT to teachers:

- Show interest in the useful mistakes students make and offer corrective support.
- Model how to learn from mistakes.
- Allow multiple attempts at learning tasks without severe penalties.
- Give credit for making progress in learning course content, not just for completed work.
- Foster a community for mutual help, which involves students and the teacher in a team effort.

Assessment

Students in my Intro to Music Education class were able to grasp the concepts of JiTT learning very well. While not something that the instructor would utilize every week, using JiTT questions in order to help facilitate learning on a more difficult subject to discuss would help save time over the course of a class that is set to last only fifty minutes. While utilizing JiTT, the instructor noticed that students were more engaged in the subject matter; starting clear and engaging debates that sometimes had to be tabled until the next class time, or turned into group writing assignments. The instructor, while hesitant at first due to students possibly finding it difficult to work in small installments on top of their other class work, had to hold the students responsible for the on-time discussions and meaningful responses.

- Snow, C.E. “Academic Language and the Challenge of Reading for Learning about Science.” *Science*, 2010, 328, 450-452.

Conclusion

As a third year tenure-track faculty member, I see students working through these discussions and using high-order cognitive skills. The students are working together in class, and gaining additional skills with communication and writing. The students are also familiarizing themselves with the vocabulary of the pedagogy without me having to “spoon feed” it to them via PowerPoint or written examination. JiTT learning has definitely taught me that sometimes it’s best to facilitate student learning, rather than just being a “sage on the stage”.

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