Jazz As a Model For Classroom Practice.

Harold Modell*

*Corresponding Author: modell@physiologyeducation.org

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Harold Modell, PhD
Physiology Educational Research Consortium,
PO Box 51187, Seattle, WA 98115-1187
modell@physiologyeducation.org

Abstract
A successful active learning community in which students engage in meaningful learning is characterized by a number of critical elements. These include a safe learning environment in which both instructor and students are willing to take intellectual risks and share their thoughts about content being discussed. Although many instructors recognize the importance of these elements, their classroom practice fails to implement the key factors that lead to success in the classroom. This article proposes the jazz experience as a model for developing a successful active learning community. While other models may certainly fulfill this role in various ways, jazz embodies all critical elements of such a community. https://doi.org/10.21692/haps.2018.014

Key words: active learning, classroom practice, helping the learner to learn, learning communities

Introduction
I am a physiology educator (Modell, 2004) whose mantra is “I don’t teach, I help the learner to learn” (Michael and Modell, 2003). This mindset dictates what I do in the classroom. In order to help the learner to learn, I must foster an interactive classroom environment in which I can discover what kind of help the learner needs. Some time ago, I was watching a group of world-class jazz musicians perform, and I realized that what I do in the classroom is Jazz!

To appreciate the rationale behind this realization requires some historical perspective. Early in my career, I became convinced that better learning outcomes could be achieved if students were involved in learning experiences in which they are supplied with facts and guided towards reaching their own conclusions (i.e., an active learning environment) (Modell et al. 1974). Hence, my early educational efforts were directed toward providing medical students with resources and opportunities for engaging in active learning (e.g. Modell, et al. 1975, Modell 1986; Modell and Roman 1995)) and providing faculty with opportunities to learn about promoting active learning in the classroom (e.g. Modell and Michael 1993, Modell 1996).

In 1995, my view of the classroom changed dramatically. I finally accepted the fact that students are responsible for their learning (Rogers and Freiberg 1994). Providing resources and opportunities will not result in learning if students do not accept responsibility for that learning. If I could not impart knowledge to students (i.e. put knowledge in their brains), my role must be to help them engage in meaningful learning. Meaningful learning in physiology occurs when the learner builds mental models of physiological mechanisms that can be used to solve physiological problems (Michael 2001, Michael and Modell 2003). In order to help students engage in meaningful learning, I must have some idea of what kind of help they need. Hence, my role in the classroom changed from primarily being a purveyor of information to primarily being a “clinician” who diagnosed problems that his students were having in the learning process and helping them address those problems (Modell 2004).

Changing how I approached the Classroom
How did this change in mindset affect how I approached the classroom? The first change focused on setting educational goals for the day. With the older mindset, goals were focused on the type of information provided and the manner in which students would engage that information (Modell 1993). With the new mindset, additional goals were added that focused on the process that students followed to build their own mental models. These new goals require continual interaction among the students and between students and instructor. As a “clinician,” the instructor must diagnose where in the process students are having difficulty and engage them in a dialog that will help them:

1) Recognize the limitations of their mental models (e.g. their misconceptions).
2) Recognize the limitations of the process by which they approach their mental model building (e.g. asking appropriate questions).
3) Revise their mental models and their model building process.

The second change deals with the nature of the interactive discussion that ensues as a result of the first change. The discussion includes opportunities for students to share their mental models and their mental model development process.

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An additional feature of this classroom environment is that the progression of the discussion is driven by the issues that the instructor (aka “clinician”) diagnoses. Thus, unlike the older mindset, where the instructor plans the progression of the discussion from the “input state” to the “output goals” (Michael and Modell 2003), with the new mindset, the instructor must be prepared to vary the “path” of the day to fit the thought progression of the students. In other words, the instructor must be able to use the available resources in a variety of ways (determined by the perceived students’ needs) to reach the output goals for the day. That is, the instructor improvises to address the needs of the learner. Hence, in this sense, what I do in the classroom shares the improvisation element of jazz. It is important to recognize that the instructor does the improvisation while helping the students recognize their current mental models, test their models, and refine their models (Modell 2004). The students are not expected to improvise, nor are they encouraged to improvise. They are encouraged to examine their current ideas (mental models), share those ideas with fellow learners, apply their models to problem solving (i.e., test their models), and refine their models to correct “errors” in their models.

If only the instructor engages in improvisation

If, in this model, only the instructor engages in improvisation, what is the rationale behind proposing jazz as a model for classroom practice? Recall that I was watching a group of world-class jazz musicians when I recognized that jazz provides a useful model for classroom practice. Jazz in performance, as I experienced when watching these artists, is all about engaging in a musical conversation among the artists. What I witnessed in that conversation went well beyond improvisation. A group of musicians were working in a collaborative manner providing support that encouraged members to take creative risks. It was clear to me that within this group, there was trust, good communication (albeit often non-verbal), encouragement, and a concern for the success of all group members.

Jazz in the education realm is an apprenticeship model. To provide students with the best opportunity to reach their potential as a jazz musician, jazz educators strive to build a community in which learners feel safe, supported, and are encouraged to take creative risks and share their ideas. Although these characteristics are the same for a successful learning community in any discipline, community building is seldom a primary goal in traditional classrooms. This experience set me on a quest to learn more about what motivates the world-class jazz artist; what features of the jazz art form can help inform my goals in the classroom, and how I can help other faculty incorporate these lessons into their classroom practice.

If the job is to help the learner to learn

Many instructors state that their job is to “help the learner to learn,” but it is clear from observing their classrooms that they do not share the mindset that I adopted in 1995. Unlike the jazz musician, these instructors are not willing to take a creative risk that would allow them to improvise. “Helping the learner to learn” in their minds appears to reflect the “provider” role that I played prior to 1995.

Dee Daniels, a world recognized jazz vocalist, often tells her students of an experience she had early in her career (Dee Daniels, personal communication) that can serve as a metaphor for this role. She was about to perform at a major jazz festival and experienced “an overwhelming rush of adrenaline,” which is not a good thing for a singer. Just prior to being called on stage, she was able to quiet down the adrenaline by deep breathing. At that point she had a momentary “vision” of herself being a conduit for loving energy via her music. Everyone in the performance space was on the receiving end of the conduit. Her interpretation of the event was that, because of her focused intention, everyone present would be empowered/inspired by the music in areas that they alone knew were areas in which they needed empowerment or inspiration. Her job was to focus her energy in the moment with the intention of making the music available on the highest level.

Everyone present in that moment could choose to take what he or she needed from the experience. In other words, she [jazz singer Dee Daniels] served as the conduit, but each listener was responsible for using the energy and inspiration of that moment for answering their own needs.

In an educational setting, the message is that the instructor provides an opportunity, but the student is responsible for his or her learning. The “helping the learner to learn” mindset recognizes that the student is responsible for his/her own learning, but the role of the instructor goes well beyond Daniels’ vision. By embracing the “clinician” aspect of the mindset, the instructor must also engage the learners in a dialog that provides information about the learners’ mental models and how they are applying those models to solve problems. It is only through this type of exchange that the instructor can assess the needs of the learner.

Engaging in the clinician aspect of the instructor’s job

Many instructors envision their role in the classroom as helping the learner to learn. However, their classroom practice is reflective of Daniels’ vision. They are willing to provide information, activities, and answers to questions, but they have not embraced the “clinician” aspect of the mindset when working with learners who are responsible for their learning. Reasons for this adherence to only the role of provider are varied and complex. Some instructors apparently do not
feel as if they have enough experience with the content to identify “problem areas” that students may be having. They seem to be afraid of misleading students by giving “wrong answers.” Others appear to believe the myth that they should be the “sage on the stage” rather than a facilitator of learning. Still others have not accepted the fact that the student is responsible for his or her learning. Disseminating information, an often-necessary element of helping the learner, is not the same as helping students learn how to use that information. Facilitating learning requires interaction among students and between the student and the facilitator. The question is “How can I help colleagues recognize these facts and adopt a mindset that will allow them to promote a learning environment consistent with the ‘helping the learner to learn’ mindset that I adopted in 1995?”

**What are the rules of jazz?**

To seek the answer, I began asking jazz artists that I know, “What are the rules of jazz that allow you to perform jazz?” I was not looking for the “musical rules of jazz” that govern chord progressions and rhythm changes. I was looking for the mindset changes that led them to jazz and the practice of improvisation. Since many of these artists are also jazz educators, I was also looking for insights about their interaction with students. The parallels that I discovered between their paths in music and my path as an educator were amazing and helped me realize that I do, indeed, follow the jazz tradition in the classroom. The goal of this communication is to share what I learned in this quest and what I learned about jazz that makes it an excellent model for classroom practice aimed at helping the learner to learn.

**Making mistakes**

The first challenge for instructors and students alike if they are to engage in a meaningful learning experience is to be willing to take an intellectual risk and make a “mistake” (i.e. test their mental model). Instructors and students often fear that making a mistake or giving the “wrong” answer to a question will result in a negative experience. In fact, meaningful learning only occurs when the tests of our mental models do not predict what we see in nature (i.e. we make “mistakes”). In jazz, musicians embrace the notion that making mistakes can lead to a positive experience. For example, one artist, while recounting an early experience in her career, gave herself permission to improvise when she asked herself prior to a performance, “What’s the worst thing that can happen if I make a mistake?” Her answer was that she would learn something to help improve the next performance. A former student of Oscar Peterson, the legendary jazz pianist, told me that Peterson told his students that if you make a mistake and can repeat it, you have not made a mistake, you have made a new arrangement.

Making “mistakes” is critical to meaningful learning and conceptual change (Bransford *et al.* 2000, Michael and Modell 2003). We learn by building mental models, testing those models, and modifying them on the basis of the outcome of the test. The instructor should not be the “sage on the stage” who is not allowed to make mistakes. The instructor should model behavior that leads to meaningful learning, and that behavior includes testing their mental models in ways that often leads to making erroneous predictions (i.e. “mistakes”). By being comfortable in this role, the instructor gives students permission to make mistakes and guide them in revising their models. An artist summarized this process in musical terms by stating, “The essence of improv is finding freedom in form. A musician takes the form of melody, rhythm and harmony and plays with this form in a free, intuitive way, harmonizing, embellishing, commenting and expressing feeling and ideas in unique ways that feel expressive of the moment.” (Ann Hampton Callaway, personal communication, June 2014) In other words, she manipulates her mental model (testing it) and revises it until it conveys the message that she wishes to convey. The artist is modeling the creative process (and the process of meaningful learning). Many classroom instructors fail to recognize that their primary role in classroom practice is also to model a process. In this case, the process is the manner in which he or she builds and applies his or her mental models to solve problems in her/his discipline.

**Keeping the melody in mind**

Another artist told me that a primary rule when improvising is to “keep the melody in mind.” In the realm of my classroom, this translates to “keep the performance goal in mind.” In my view, we help students learn content so that they can apply that content to solve problems. Hence, for any given lesson or unit or course, one establishes performance (outcome) goals for what the student should be able to do at the end of the session, unit, or course. When helping the learner to learn, it is incumbent on the instructor to interact with students to learn where the students’ challenges or difficulties lie. By keeping the performance goal (aka the melody), or “destination” for the journey, in mind, the instructor is able to help lead learners along a path that is consistent with the learners’ chosen logic path toward the performance goal. In this process, the instructor adapts to the needs of the learner rather than the learner “switching gears” to follow the thought process of the instructor. This process also requires that the community of learners share their thoughts so that the community can reach a consensus model of the mechanism(s) being studied. Of course, it is essential that the instructor provide a safe, supportive learning environment where the student will be willing to engage in these behaviors (Michael and Modell 2003). Fostering this type of supportive community is also characteristic of the jazz education.
Being in the moment
A common statement that musicians make when mentoring students is that, during performance, the performer needs to be in the moment. That is, one must focus on what is happening in the environment. As one artist explained, “Improvisation is like a meditation because you have to be totally in the moment. It is a dance between effort and grace because some of it feels inspired.” Connecting mind and heart has so many benefits for all people.” (Ann Hampton Callaway, personal communication, June 2014).

Being in the moment is also necessary for the instructor whose intent is to help the learner to learn. Being “in the moment” is all about maintaining focus on the learner. The instructor must listen carefully to what the learner is saying, pay attention to the language that the student is using, and seek clarification if the student’s intent is not absolutely clear. “This is what I heard you say...”, for it is the words that the student uses that provides the instructor with clues about errors or inconsistencies in the student’s mental model. Becoming distracted by thinking of an answer before the question is complete or assuming the existence of an error (misconception) based on sloppy language can potentially lead to more confusion rather than clarity. The students must also be “in the moment.” To be a full participant in the learning process, the student must be actively engaged. The students directly engaged in the discussion must focus on the dialog in which they are engaged and seek clarification when necessary. The learners who are listening to the discussion must also maintain focus so that they can compare their mental models with those of the discussants. Being “in the moment” in this way requires that open communication exists among the discussants (instructor and students). The challenge is to create a safe environment in which students will be willing to take the risk to be fully involved in the process (Michael and Modell 2003, Modell 1996).

Creating a safe environment
So, how does one create a safe environment for learners; instructor and students? Here, again, jazz education can serve as a model. Contrary to the message that some high school students in jazz band receive, jazz is not a competitive sport. The jazz tradition is one of collaboration and support where ideas are exchanged freely to promote creative moments. As noted earlier, jazz education is based on an apprenticeship model. Older, more experienced, (master) musicians mentor younger musicians (apprentices) and encourage them to explore their ideas. Close observation of good jazz musicians reveals continuous communication among the performers and between performers and listeners. Each supports the others and encourages them to take creative risks. The tradition embraces mutual respect, learning and mentoring so that all artists can grow to reach their true potential. The same characteristics apply to a learning community in any discipline in which all members of the community are supported and encouraged to take the intellectual risks required to test their mental models and engage in intellectual “argument.”

Traditional classroom environments, be they primarily didactic or those that include active learning modalities, seldom promote the development of a learning community. One reason often voiced by faculty for not establishing a learning community is that if time is devoted to promote such an environment, there is not sufficient time remaining in the quarter/semester to cover the necessary content. Emphasis on content (playing the correct notes) rather than process (performing the music) results in less meaningful learning.

The learning community
What are the relative roles of instructor and students in a learning community? In a jazz performance environment, we generally think of two populations of participants, the performers and the audience. However, in most cases, there are at least three populations. The first population consists of more experienced musicians (the “masters”). The second population consists of those performers with less experience (the apprentices), and the third population is the listening audience. Each population plays a critical role in the process. The “masters” serve as mentors for the younger musicians, sharing their experience and perspectives. The apprentices practice their craft under the supervision of the “masters,” expressing their own creative ideas and receiving feedback from the “masters”. The audience serves as observers. The distinction between these populations is often fluid because the mentors often learn from interaction with their mentees, and the audience provides feedback to all of the performers. All of populations are actively engaged in the process. We also find three populations in a successful active learning community although their roles are different from those in the jazz performance environment. The instructor is the “master.” Students engaging in the conversation are the primary learners, and students listening to the instructor-primary learner interaction are secondary learners.

The instructor as mentor
The instructor serves as the mentor by posing appropriate challenges for students to test their mental models and by facilitating the session. As a “clinician,” the “master” guides the learning, models the model building and problem solving processes, and provides constructive feedback to the primary learners. By being engaged in the model testing and refining process, some students (the primary learners) are apprentices in the sense that they are sharing their model building and testing processes with the community. Students listening to the conversation (secondary learners) compare their mental models to those of the primary learners, seek clarification from the primary learners, and provide feedback or alternative ideas to the community. Although the instructor is responsible for directing the conversation, each member of the community is responsible for his or her own learning and all members of...
the community benefit from the experience. The “clinician” (instructor) learns about the challenges facing the learners and often revises his or her own mental models as a result of these new insights. The primary and secondary learners learn how to use their mental models to solve novel problems. They also learn how to ask appropriate questions and seek appropriate answers when faced with other life challenges.

The learning community also adds another dimension to the learning environment illustrated by the following story. I once asked a member of a well-known vocal jazz group celebrating its 25th anniversary of performing, how she could perform a song that was in the group’s original repertoire with as much energy as she had the first time she performed it. Her response was that the energy she brings to a performance comes from the audience. The energy in the room, and the success of the session, are directly related to the contribution made by the audience (in the learning environment, the learners). From the instructor’s viewpoint, each class session is a “new day,” potentially filled with new challenges. Although the same content may be repeated from previous sessions (or previous iterations of the course), the reason for the repetition changes, resulting in a fresh experience. Furthermore, the extent to which learning occurs in such a setting depends on the students’ investment in the process. Student investment in the process will only be achieved if the environment is safe, all-inclusive, and supportive, another feature of the jazz experience.

The connection between the instructor (the artist) and the student (the listener)
The connections made between artist and listener during a jazz performance or among community members in a jazz education environment can be profound. The same can be said for the instructor and students in a successful active learning community. As one artist explained, “Love of one’s craft and just love in general, is key in wanting to relate to people and make differences.” (Karrin Allyson, personal communication). The relationship between artist and listener during a jazz performance typically lasts for the duration of the performance. The relationships that can form during the educational experience can last much longer, and, in some cases may change lives. If the instructor embraces the helping the learner to learn philosophy, a true concern for the student’s progress can develop and result in enduring life-long lessons for students (Modell 2012). This is also evident in the jazz world when artists talk about the impact that their mentors in jazz had on their lives.

Jazz as a model for instructors
I have proposed that jazz can serve as an excellent model for instructors who wish to create a collaborative learning community in the classroom. Although others may propose other art forms as a suitable model for classroom practice, jazz embraces all of the key elements necessary for creating a supportive learning environment emphasizing the development of all members of the community to their maximal potential. An added benefit in this setting is that, while the learning process may be hard work, the community involvement makes the experience fun!

The parallels that have become evident between jazz and good classroom practice are not surprising. To be successful at both requires the practitioner to be dedicated to the pursuit of his or her craft in ways that can profoundly impact others. In many cases, the true impact of their work is not evident to the artist or educator. Each strives to be the best that they can be and gain satisfaction in knowing that they have made a contribution. However, as Dee Daniels came to realize through her “vision,” the true benefit of the contribution lies with the recipient. In the case of jazz, it lies with the impact of the power of music in the life of the recipient. In the case of education, it is the degree to which the instructors’ efforts empower students to go forth and make their own contributions to the broader community. Each shares a gift that enriches lives, keeps on giving, and all that jazz.

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About the Author
Harold Modell received his PhD in Physiology in 1971. In 1985-1986, he was instrumental in establishing the Teaching of Physiology Section of the American Physiological Society, and, in 1988, Modell was named the founding editor of Advances in Physiology Education. In 1989, he gave up bench science research in favor of educational research and development. Activities in this realm have included research, materials development, and faculty development. He continues these efforts as Director of the Physiology Educational Research Consortium, and, until his retirement in 2015, was a faculty member at Bastyr University in Kenmore, Washington.

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