

Employing Cognitivist Learning Theories as a Way to
Provide Meaningful Musical Experiences within an
Instrumental Music Program.

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Introduction

Within the field of instrumental music education, teachers face the challenge of directing high quality musical performances while simultaneously ensuring that the process of learning music is meaningful. Creating an environment where learning is meaningful requires teachers to teach musical concepts in a way that is significant to the learner. While our school music concerts are entertaining and certainly very important, it is also important to note that the purpose of instrumental music education cannot be entirely performance oriented. If student instrumentalists strove only towards achieving musical performances, then it would be justifiable to assume that when there were no more scheduled performances, there would also be no reason to seek out further musical experiences. A scenario such as this would imply that the learning process was not meaningful and that musical appreciation did not transcend the confines of school.

Teaching music in a way that is meaningful can be accomplished in a variety of ways. To further the pressures of creating high quality ensemble performances, we can take into consideration the reality that a band is made up of individuals that might learn differently. To education's aid however, psychologists have been examining human learning for many decades, from which they have established four commonly recognized learning paradigms: behaviorism, cognitivism, humanism, and constructivism. Knowledge of these, when combined with an awareness of student individualities, can yield effective teaching strategies that can encourage the meaningfulness of music education.

The learning theory cognitivism supports the notion that learning is a mental endeavor. It focuses on inputs, outputs and the ways that learners mentally process information. Within instrumental music education, cognitivist learning theories are one way to create meaningful learning scenarios. Learning in this method can help shift the attention of learning away from the obvious outcomes of knowing (Blanton 1998), where the obvious outcome of instrumental music education would be the final performance. Students must not learn how to play their instrument so that they merely have a nice band concert, contrarily, students must use their instrumental music study as a means to explore the intrinsic values and aesthetic qualities that music has to offer. It is important to remember that students should be learning music, not band. As Jerome Bruner states, "learning should not only take us somewhere; it should allow us later to go further more easily." (Bruner 1969) When considering different methodologies of teaching instrumental music, it is important to incorporate cognitivist learning theories as a means to create lessons that can provide students with meaningful musical experiences which will in turn enable them to remain musically active and competent throughout their lives.

Background

Before examining specific instances of Cognitivist Learning theories within instrumental education, we should more fully identify the premises of this particular learning theory. Discussing cognitivism may best be accomplished by first understanding its predecessor. During the 1930s psychologists such as Skinner, Pavlov, Watson, and Thorndike collectively contributed to a learning theory called behaviorism. Their suggestion was that all instruction could be

achieved by observable, measurable, and controllable objectives that resulted from various stimuli and responses set forth by the instructor. (Leonard 2002)

The greatest fundamental difference between behaviorism and cognitivism is the element of observation. Largely as a response to behaviorism, psychologists such as Robert Gagne, Jerome Bruner, David Ausubel, and Lev Vygotsky each suggested that learning was more than simply a series of external observable reactions. Learning to the cognitivist, was the act of mental information processing, an advancement from the suggested processes of the behaviorists.

Within instrumental music education, utilizing certain learning theories are sometimes easier than others. Bands that only work towards performance goals run the risk of not engaging their minds, hence learning exclusively through external and observable outcomes. Bands that learn by actively participating in the acquisition of their knowledge however, have the potential to experience more meaningful and significant learning scenarios. While all aspects of cognitivism can be used to promote sound educational practices, there are certain aspects of the theory that can be used specifically within instrumental music education. Let us now explore how cognitivist learning theories can be applied in ways that can promote meaningful learning within instrumental music education.

Gagne and the Gordon Method

Robert Gagne was a learning theorist who helped bridge the divide between behaviorism and cognitivism. His “theories...span a gap from a reliance on behaviorism as a foundational theory, to the eventual adoption of cognitivism.” (Fields 1996) One of his suggestions is that learning occurs best when it follows

a specific hierarchy; thus implying the existence of a rigid learning sequence that all students adhere to. (Abeles 1995) He suggests that before complex notions and processes can be understood, learners first must grasp fundamental supporting knowledge that will assist them in the learning process. By noting that he addresses mental states as an element of learning, we can observe his crossing over to cognitivism.

Within the current methodologies of instrumental music education, there is one approach to teaching that, more so than others, exemplifies Gagne's cognitivist learning theories. And to proceed within a logical order, and to present this method in isolation of other educational methods, let us first examine the cognitivist learning theories that have been applied by Edwin Gordon. When examining Gordon's Music Learning Theory, parallels can be drawn to Gagne's suggestions of a hierarchical learning progression and furthermore, the specific notion of discrimination learning comprises a major aspect of Gordon's method. It is one that encourages students to experience what a musical concept is, and subsequently what it is not; thereby actively discriminating between musical concepts as a way to better learn. Gordon's methods also contain a rigid hierarchy of musical learning that resemble Gagne's. In the preface to his book *Learning Sequences in Music*, he states:

...Because the class is run as part of a sequential program, everything that students are learning builds logically from what they have already learned, and so students find that what they learn makes sense and that they can apply it immediately to the performance of all types of music.

(Gordon 2003)

In addition to employing cognitive learning theories, Gordon's methods also create meaningful learning scenarios that educate the entire musical child. And as implication towards the importance of teaching music in a meaningful way, he notes that:

All students ... should be educated to understand and appreciate the musical performances of artists, because as adults they will be the ones who will constitute the musically intelligent audience of the next generation, and they will be responsible for preparing the next generation to be year more musically intelligent and sophisticated learners. (Gordon 2003)

Despite the similarities between Gagne's hierarchy and Gordon's meaningful methodologies, strict sequential learning processes can sometimes be difficult to implement within the hierarchy of an entire music department. The system is possibly too strict for its own good, however for the purposes of this paper, it is important to note that it has direct ties to cognitivism.

Bruner, Curriculum, and Discovery Learning

Another important contributor to the cognitivist learning theory is Jerome Bruner, an American psychologist who passionately opposed behaviorism. Bruner hypothesized that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development." (Bruner 1969) While he originally directed this idea towards science education, it can be applied to all academic areas and has since been directly applied to music education. The *curriculum concept spiral* that was developed at the

Manhattanville Music Curriculum Project suggested teaching similar musical concepts with varying degrees of detail throughout the life of a child. This model was directly influenced by Bruner and is evident in today's instrumental music study.

In order to teach music, which is an art of maturity, to those who are immature, we must make such adjustments in techniques and materials as are necessary for the physical and emotional levels of our students, but the final goal for those students must be in the same direction as the goal of the professional. (Benn 1966)

Music teachers that follow band method books automatically teach concepts at age appropriate levels as many books are designed to do specifically that. For example, beginning instrumentalists might be taught to play a musical phrase by following printed slurs, whereas a more advanced instrumentalist might be taught to interpret music so as to apply their own phrasings within a larger musical form. Learning these concepts in this manner might be an important step towards making information meaningful and permanent. In defense of any accusations that this model more resembles a constructivist learning theory, one would have to note that cognitivists would embrace this model because they believe that learning must always take place in a thinking mode if it is to be meaningful, (Dodson 1989) and by revisiting concepts, we are certainly asking students to think as a way to learn.

Another important contribution by Bruner is his notion of discovery learning. The idea behind discovery learning is that when students are presented with the raw materials, they can effectively learn by themselves. It is

the act of obtaining knowledge by using your mind. “Discovery, like surprise, favors the well-prepared mind.” (Bruner 1962) This type of learning, when applied to music education, is a method that can significantly increase the potential for making music education meaningful. Within instrumental music education, this can be illustrated by imagining a scenario where a student knows the sound of a piece of music, but cannot yet perform it on his or her instrument. Through the pre-set of knowing the song and having adequate instrumental techniques, a student could learn how to play the song all by themselves by working through the task. In an attempt to make instrumental music education significant and meaningful, this type of learning process has fantastic potential.

The student is no longer a bench-bound listener confined to rote accumulation, memorization, and regurgitation. Instead, he is provided with an opportunity to exercise creative options, imagination, and self-mastery. Students find discovery a stimulating and rewarding way to learn because instead of being provided with all the answers, they are invited to conquer their own ignorance. They win their own possession of knowledge. (Fowler 1970)

While the feasibility of using discovery learning during ensemble instruction is hard to imagine, applications during private lessons or small group instruction will certainly ensure that students make strong mental connections with their musical discoveries.

Other uses of discovery learning within instrumental music education are revealed within jazz education. Directly relating to the example above, a large component of jazz education should involve listening, and then figuring things

out. It is not uncommon for jazz musicians to explore the works of famous artists as a way of furthering their own abilities. Imitating jazz recordings is one way that students can learn. Through the process of transcription, aspiring jazz musicians can independently recreate the sounds that they hear on various recordings. Providing instrumentalists with the raw materials (i.e.: quality recordings, knowledge of jazz scales and tendencies) is an effective and meaningful way for students to learn.

To conclude our discussion of discovery learning, it is important to illustrate how it is also similar to other cognitivist learning theories. Discovery learning clearly focuses on the cognitive achievements of individuals. We should also note that cognitivists view the child's mind as natural and curious, however something that should not be forced into environments that have group expectations. (Rideout 2002) While discovery learning certainly resembles a cognitivist's viewpoint and focuses on individual achievements, a lack of group expectations for an entire band could result in catastrophic consequences. Not teaching with group expectations would certainly impede the effectiveness of band rehearsals, however this simply reinforces the importance of other learning activities such as group lessons, private instruction, and individualized discovery learning.

Vygotsky, Chamber Music, and the Z.P.D.

Having now recognized that certain elements of the cognitivist learning theory are difficult to implement within a large ensemble setting, we will shift our attention to the work of Lev Vygotsky. Re-emphasizing the importance of the individual mind as an aspect of cognitivist learning theories, we will keep the

spotlight on the individual, however do so within the context of a group of learners. Vygotsky examined the impact of teacher and student assistance on individual skill development. He noted that “what the child can do in cooperation [with teachers or other students] today, he can do alone tomorrow.” (Vygotsky 1997) To further explain, Vygotsky stresses that much of what we learn, we learn from others. (Phillips 2004)

Within instrumental music education, certain circumstances lend themselves to group learning better than others. Students that participate in chamber music ensembles have excellent opportunities to grow and learn. As unique individuals, upholding Gagne and Bruner’s theories, they are learning to play their instruments in a small ensemble where every individual is of great importance. Within the context of the group however, they are learning from their peers, exemplifying Vygotsky’s theories of group learning.

One aspect of chamber music that encourages meaningful learning is the element of listening. While students certainly listen to one another in a large ensemble rehearsal, the type of listening that takes place in a chamber ensemble is different. As professional chamber musician Charles Villarrubia notes:

The chamber music experience helps to build the person, as well as the musician. The students are encouraged to listen critically (in the best sense of the word) to one another and discuss what they hear and how they plan to improve upon it. (Villarrubia 2000)

The inclusion of chamber music within instrumental music education creates opportunities for learning that support Vygotsky’s theories.

When considering the social role that children play within schools and their families, it is important to note that the majority of their time is spent following directions and asking for permission. In a paper by Forman and Cazden (1985), they note that students rarely are the ones to direct the learning process. If we apply this notion to students within a chamber music ensemble, we can see how interchanging the roles of teacher and learner could have a profound significance on the learning process. “The only context in which children can reverse interactional roles with the same intellectual content, giving directions as well as following them, and asking questions as well as answering them, is with their peers. (Forman 1985)

Vygotsky (1934), as cited by Buell (1990), states, there is a *Zone of Proximal Development* that exists between a student’s existing capabilities and the teacher’s assigned expectations. Identifying this zone is an important aspect of teaching instrumentalists, as it is important that we ask students to attempt things that are within a certain degree of attainability. If we give a musical assignment that is beyond a student’s zone, learning may become inefficient and not meaningful.

Instrumental music teachers must be aware of the zones for both their individual lessons as well as their ensemble rehearsals. Setting high expectations is important, however ensuring that they are attainable is a key component to ensuring that learning can be both meaningful and efficient. “In the large-ensemble setting, it appears that Vygotsky’s teacher expectations are exemplified through the difficulty of the repertoire, and immediate, short-term performance goals.” (Buell 1990)

Garofalo and Ausubel

Considering these discussions of cognitivist learning scenarios, one can see how it can be difficult to create opportunities for meaningful learning within large ensemble instruction. In order to combat this, we must develop teaching plans that can encourage students to actively participate in the learning process. In the earlier described *doomsday scenario* where musical performances are the most important end result of music education, we would be apt to find low levels of analytical thinking and response. Robert Garofalo has experimented with and written about the process of learning through ensemble participation. He suggests that in order to make meaningful learning scenarios, instruction must be designed to teach comprehensive musicianship.

In this context, instrumental music performance is not an end in itself, but a means to an end that includes the development of each student's aesthetic sensitivity and responsiveness to music.

Although aesthetic sensitivity cannot be taught, it can be fostered through the use of educational strategies that involve analytical, judicial, and creative thinking. (Garofalo 1981)

Garofalo is not a learning theorist, but has written about specific activities that instrumental music teachers can use to promote meaningful learning scenarios, many of which can be compared to cognitivist learning theories.

The *Unit Study* is a term that Garofalo has coined to describe the comprehensive study of music through instrumental music performance. His unit studies ensure that learning is meaningful by creating lesson plans that encourage students to think about their musical study in more than one way.

Garofalo's ideas are very similar to Bruner's discovery learning theories, whereas students are given a variety of extra information that can allow them to make connections and build personal assumptions, ultimately helping to create a deeper meaning of knowledge within the learner.

Unit studies can also be compared to the work of another cognitivist, David Ausubel. One his most significant contributions was the concept of the advanced organizer. Ausubel suggests that there are similarities between the way subject matter is organized and the way people organize knowledge in their minds. He further notes that when we organize knowledge in our minds, we provide ourselves with an adequate foundation to learn further. It is suggested that "advanced organizers provide anchors which will help strengthen the student's cognitive structure and enhance retention of information," (Downing 1994) hence promoting meaningful learning scenarios.

Garofalo suggests a strategy, an advanced organizer in disguise, towards teaching meaningful music education. He believes that students should be made aware of more information than what is presented on their individual parts. To help fortify and expand the music learning process, he suggests that students begin the learning process by understanding the music's specific formal elements and any historical context that it may have. Teachers should "organize a viable program of studies that correlates instrumental music performance with the study of music structure and style..." (Garofalo 1976) This additional knowledge gives the students a mental foundation that will help them more fully understand their band music. He further suggests that students should participate in a wide variety of extra-musical activities that would tie back into the theme or concept of

the music being studied, again drawing more connections between ideas and furthering the significance of the learning process.

Conclusion

There are many factors that help orient the curriculum and methodologies of instrumental music programs. When attempting to teach in a way that can create meaningful musical experiences, it is important to consider cognitivist learning theories. To improve the chances that students will maintain competent and active musical lives beyond high school, instrumental music educators should not teach in a way that will artificially elevate the importance of musical performances to the point where music learning is merely a cause and effect process of performance preparation. Surely there is more to studying instrumental music than perfecting ensemble performances and ultimately we as music educators should strive to teach in ways that emphasize equal importance between the process of learning to perform as well as the act of performing itself. It is in this process that learning can make the important leap from mindless to meaningful.

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