

Action Research in Underserved High Schools: Effective Pedagogy in Music Classrooms

Introduction

Imagine a musical learning environment, High School Music Class A, where students have creative freedom, engage in discovery-based learning, problem solve on a daily basis, and work together in a cooperative learning environment. In this environment, the teacher might start class by reminding student groups to check their musical task lists for their recording project, research the available equipment, and design a proposal for completion. Students meet in groups, discuss the steps they need to complete that day, and use their teacher as a resource for improving their plans. The teacher guides the students to resources that will provide them with information and encourages them to try out their ideas with an eye toward revision.

Now imagine High School Music Class B. In class, the teacher stands in front of an ensemble, listening to the deafening silence that fills the room after she asks a question. The students just must not be paying attention. “Where is the crescendo in this section?” the teacher asks the group again. Finally, one of them raises their hand... and proceeds to say that their music keeps falling off their stand. In this school, when asked “How do you think your teachers feel about you?” one 17-year-old student answered, “My teachers don’t care about me. They treat us like we’re robots.”

Two classrooms, similar in student demographics. Both classrooms are striving for excellence in music education but are perceived differently by the students. No question: goal-oriented cooperative and discovery-based learning environments encourage students’ autonomy and critical thinking skills. So how can two schools, striving for the same goals, be moving in two different directions?

In Music Class A, the school provides the technological and educational tools students need to think creatively and critically, and work together in cooperative learning environments. Classrooms were arranged to make this work possible, and other available work spaces were connected to the main classroom. Classrooms were filled with windows allowing in the natural light, and hallways felt more like home than an institution. The school administration set a vision for the school that encouraged collaboration and creativity and teachers were given the support to design creative learning activities in which they became co-learners along with the students. Self-directed learning was the norm, and excellence abounded. Alumni pursue their long-term goals and succeed.

The students in Music Class B, however, go to school in a facility that is dimly lit. Metal detectors greet students just past the front doors, yet students know that other doors are unprotected and accessible to outsiders. The hallways are painted in incohesive colors. The students struggle to maintain motivation to graduate and go to college; those that do go to college struggle because they have not received the skills necessary to succeed. The teachers at this school are good, hard-working teachers. They care about their students and hope to teach in ways that benefit each one. The school’s culture, however, as dictated by long-standing environmental influences, produces an isolation that both teachers and students feel. Teachers do not have the technology and print resources that would support their efforts to design creative and critical pedagogy with deep connections to the world the students live in. The physical environment contains spaces that are not conducive to collaboration: classrooms crowded with

individual desks that can only be arranged so many ways. For a teacher to step outside of typical pedagogies, a conscious about-face must be made, and often, their efforts are not supported.

Purpose of the Study

The fact-based, yet fictional introduction you just read was written by five music education undergraduate students and one elementary education student participating in an action-research collaboration at Kansas State University between Dr. Vibhavari Jani, Prof. Hernán Gregorio (Department of Interior Architecture and Product Design), Dr. Ruth Gurgel, and Dr. Phillip Payne (School of Music, Theatre and Dance). Our initial goal was to engage our departments and undergraduate students in action research to identify the environmental and pedagogical needs of students in underserved school settings and work collaboratively with high school teachers and students to design renovations of physical school environments and new curricular ideas. The data highlights flaws in current educational practices that serve to disinterest or disengage current student populations. In our study, we applied our knowledge of successful teaching frameworks and pedagogies to create an innovative and more effective curricular design for the 21st century in collaboration with modern students themselves. This article describes the findings of the study and the action-based activities undertaken by those in the collaboration.

Review of the Literature

Students in underserved areas in the United States experience deteriorating infrastructure, insufficient socio/emotional support, and failing teaching practices (Darling-Hammond, 2010; Oakes, 2005; Payne, 2008). In schools in underserved areas of the U.S., lack of space and resources are inhibiting students' learning, performance and autonomous motivation. To address this need, which affects a large population of students across the country, we¹ acted upon it by conducting interviews with students, teachers, and administrators, as well as observing in classrooms, and collaborating with high school students and teachers. We wanted to learn firsthand from teachers and students which pedagogies and frameworks of learning support eager students who are motivated to do their best work in class by supporting critical thinking and problem solving, regardless of background or socio-economic status.

Culturally Relevant Pedagogy, a theory grounded by the six prongs that Ladson-Billings lays out, has been shown to increase educational achievement, support autonomous student engagement and provide supportive environments in classrooms where students thrive (Ladson-Billings, 1994). The six prongs include: cultural competence, sociopolitical consciousness, academic achievement, strong conception of self and others, teacher's strong conceptions of social relationships, and conceptions of knowledge (Ladson-Billings, 1995). Recently, the term Culturally Sustaining Pedagogy has been offered as an extension and replacement for the term Culturally Relevant Pedagogy, which has often been co-opted and given meanings that stray away from the original iteration. Culturally Sustaining Pedagogy is not only relevant to the cultural experiences and practices of young people, but provides sustenance for students' identities. Through this type of pedagogy, young people are not required to take on a "double consciousness" in classroom environments, but receive support to bring all facets of their identity

¹ From this point on, the words "we" and "our" in the article include the actions and perspectives of the undergraduate students and interior architecture and music education professors working on this study.

to bear when learning. Their backgrounds are not only respected and understood, but incorporated as valued elements in the fabric of the school and classroom (Paris, 2012).

Utilizing the KSU Library

Throughout our research process, we have been interested in learning more about Culturally Responsive Pedagogy. We believed that our observations of the current status of education in underprivileged areas would lead us to some sort of conclusion including this pedagogical ideology. In order to confirm this conclusion, we first had to research the pedagogy itself. Using the online K-State library resources, we read articles, books, and other printed works on the topic itself to grow our understanding. As a team, we would meet and read our own separate articles and then using RefWorks and Scopus, we could share them in one folder along with our comments. This proved to be a very successful method of sharing information, as we could talk about the articles themselves in person and also carry on the conversations via the resources provided. Since the library was in a state of disrepair for most of our research, we discovered other online avenues for information that the library provides. Through the search engines we were able to discover books relating to the topic of our study, information on teaching in certain demographics, and more. Without the K-State library and its innumerable resources, our project wouldn't have such a rich and informative conclusion. Having that knowledge helped us conceptualize the methodologies and implementation for the unit we created for the music classroom.

Theoretical framework

Using Culturally Sustaining Pedagogy as a basis, we hold several beliefs that influenced the course of this study, the interpretation of the findings, and the implications for education. We believe that all students deserve classroom pedagogy that fuels their learning, enhances motivation, and provides support for them to achieve future goals. We believe that such effective teaching can happen at any school and in any situation, regardless of the funding or facilities (although supportive environments such as those in Classroom A are certainly desirable). We believe that lack of resources can be an overwhelming issue when considering how to provide Culturally Sustaining Pedagogy in underserved schools. We believe that effective learning environments can be created not only through improved and enhanced physical resources, but also through inventive pedagogies. Through our observations and interviews, we have learned that we can empower ourselves and our fellow teachers in underserved school districts through tools that help their students reach a new level of success and cultivate high levels of learning for all students regardless of their address and school building. We remember our high school days (much more immediately for the undergraduate students), where we sat in a particular class, paying attention to the teacher just as long as we had to before shuffling on to the next class. As seniors, we could not wait to go to college and study what we wanted in courses that would lead us to realizing our long-term goals. Instead of making our students look to a time in the future when they can express themselves through creative learning, why not create that environment in our classrooms today?

Methodology

Action research can sometimes get a bad rap. Seen by some as a less academic form of research since it is often done by a B.A. teaching in the classroom instead of a Ph.D. in an academic post, its findings are often practical and situated in a bounded context: usually one classroom or school. However, teachers who engage in action research are empowered to identify challenges to Culturally Sustaining Pedagogy in their classrooms and schools and learn to include their students in resolving these challenges with new solutions. For the undergraduates, teachers, high school students and professors involved in this study, collaboration provided the arena for those practicing in the classroom as well as those soon to be entering the field as either architects or teachers to design experiences and create settings where the students could provide information and feedback throughout the study.

To form our collaboration, Dr. Jani began a partnership with an underserved school district approximately two years before the present study began. She secured grants and permissions to work in one high school, piloting collaborative efforts between undergraduate and high school architecture students. In 2017, Dr. Jani invited Dr. Gurgel to collaborate and both researchers began discussions with school personnel at the original high school and a second high school in the district. In 2018, three other professors were brought into the collaboration, Dr. Priya Sharma, Dr. Phillip Payne, and Prof. Hernán Gregorio. In the fall of 2018, the professors formed undergraduate research teams with students from both departments involved at Kansas State University. They worked together to provide the undergraduates with theoretical frameworks to understand the connections between the fields of architecture and education, facilitating class sessions in both departments. To begin the present study, the professors, as well as all members of the undergraduate research team, traveled to the two high schools, facilitating a morning-long exercise entitled, “A Day in the Life.” High school students gave the undergraduates and professors a tour of their school in small groups, describing their school lives. The undergraduates found that the high school students were open about their feelings and experiences right from the start. They shared their wants and needs regarding school environment. Undergraduates got the opportunity to work in small groups, talking with high school students, hearing more about their personal experiences within the schools. The exercise closed with each small group sharing a poster they created about their experiences with the larger school group, noting commonalities and differences.

To gain additional experiences to situate the data, professors and undergraduates traveled to near-by high schools that offered an alternative to traditional high school settings. Students attended these schools for half of the school day, spending the other half in their traditional high school, participating in a learning program in an area of interest. Students graduating from these programs often found work in the field of study or received college credit in their area of interest allowing them to enter programs in local universities in the fields of education, engineering, medical professions, music/media arts, and more. We received tours of these schools from administrators and were encouraged to enter classrooms to observe and chat with teachers and students.

A few weeks later, the undergraduate students traveled to work with the high school students again, prepared to facilitate an interactive, collaborative learning activity in which small groups design and create a product for use in a classroom representing aspects of desirable learning. In this activity, undergraduate teams designed an experience following the architectural design process and inquiry-based pedagogy. To start, the undergraduate groups designed a set of questions and possibilities for the activity that encouraged the high school students to engage,

explore, explain, elaborate and evaluate their ideas.² The act of developing a new product from multipurpose objects sparked discussions about thinking creatively in schools. Groups discussed questions including: What sort of environment would be more conducive to student learning, and how could we (students, undergrads, teachers, professors) make these changes now? What teachers have students loved learning from and why? What assignments, lessons, and projects were students' favorites and how did the teacher introduce these undertakings?

Much of the feedback we collected from the students depended upon better facilities and opportunities for the students such as smaller class sizes and the integration of technology. However, there were many aspects of their feedback that did not depend on better resources or spaces. The students wanted more independent assignments, more creative freedom, a healthy balance between individual and group work, and more communication from teachers and administrators.

Our research team traveled to the schools again, about three weeks after the collaborative activity. We met at the central offices so that all groups from both high schools could collaborate. Undergraduates began the morning by modeling a critical feedback process in which they asked students and teachers to provide feedback on their schematic designs for facilities (architecture students) and curricula (education students). These designs were based on an analysis of the high schoolers' needs for better learning. High school students then presented projects from their work with their teachers, sharing designs for their ideal school environments, class offerings, and educational values. Architecture students presented small models of what an optimal outdoor courtyard would look like, education focused students presented conceptions of their ideal school and instructional ideals.

Undergraduates noted that the high school students presented educational wants and needs that could be achieved if teachers and administrators tweaked the school culture, curriculum design and overall school day. This discovery led our research team to ponder the students' role in their own education at public schools. The undergraduates concluded that, in order to create more successful learning environments at the classroom level as well as the larger school and district level, the teachers and administrators in the schools must take the unique wants and needs of the students they are serving into deep consideration. While the students we interviewed shared needs and wants specific to their community, culture, and experiences, we found commonalities that we will share as findings.

Findings: Students' values, needs, and wants:

Based on our interviews with the high school students, we identified seven key learning values they hold. These values determine their specific needs. We classify these values needs as human (needs all humans hold), cultural needs (needs related to culture), environmental, temporal, pedagogical, aesthetic and safety. The needs that stem from the values provide ideas

² For more information on inquiry-based pedagogy, see the following websites:

<http://enhancinged.wgbh.org/research/eeeeee.html> and

<https://www.whatihavelearnedteaching.com/5e-model-science-instruction/>. For information on the design process, see the following website: <https://www.architypes.net/design-process/>.

for actions that can be taken immediately to enhance the students' learning experiences. We also identified students "wants," or concrete items or environments they want for their learning. Wants are action items, some of which can be addressed immediately, while some require additional funding or infrastructure first.

The human values students espoused were largely situated in the socio-emotional realm. Students described the values of achievement, friendship, physical sustenance, and safety. To move toward these values, they needed environments that would lower stress while simultaneously engage them in striving for a higher achievement level. Students commented that they felt overwhelmed with balancing their after-school activities and their academic work. Students suggested that their teachers might work to fully understand students' after-school commitments and took them into consideration when designing after-school assignments. The students also needed a teacher who believed that they were creative and intelligent, trusting them with challenging coursework involving real-world applications. They needed class work where they could interact with their peers in order to develop friendships. Based on these values and subsequent needs, students wanted adaptable learning environments they could co-create with the teacher, updated and functional technology, and relaxed and creative spaces in which to work. Students also wanted healthier and tastier food for lunch, school environments that were physically and emotionally safe.

The students' cultural values resulted in needs for new and better learning environments. They and their peers spoke many languages, came from many heritages, and had unique families. The students struggled due to a lack of resources including teachers who spoke their language and understood their backgrounds. After asking students about their experiences with their educators, we learned that most of them need their school to understand that cultures are valuable and one of the most cherished parts of students' identities. Often times, their educators ask the students to fit into their mold, but since they each have a different story, they struggle in actually connecting to their students. Students wanted every teacher to speak at least one additional language to English, teachers who originated from similar backgrounds and cultures, and teachers who understood their ways of being in the world.

The students were forthright in describing asked their environmental and aesthetic values and needs. Overall, students needed more stable infrastructure, space to do work, and natural light. At both schools we visited, there were serious infrastructure problems. Either the students were crammed into hallways or were using one giant room to house multiple classes. In one school, access was a problem. Some classrooms were accessible on via a staircase, creating areas of the school and classes that some students simply could not get to. The students described in detail their wants: more windows, elimination of fluorescent lights. Students wanted wider hallways, comfortable and flexible seating to allow for collaboration, artwork, colors, and functional, organized classrooms.

Students also had temporal values and needs. The students valued a balance between time for working hard in school and time for rest, relationships, and other interests. The students needed more time to get to classes and also time to form friendships both inside and outside of the classroom. The students said that they needed more time to pass through the hallways since the infrastructure was so inhibiting for getting past other students and to class on time, resulting in stress and humiliation when they were late. The students wanted smaller settings for learning, shorter lines allowing them to eat with friends, accessible spaces, class times and schedules that were designed for achieving optimal project-based learning, not dictated by the constraints of managing large amounts of students.

Finally, pedagogical values and needs. Students valued learning that was challenging, interesting, collaborative and applicable to their lives and future goals. Students needed project-

based assessments instead of knowledge-tests to demonstrate their academic abilities. They needed shorter and more appropriate lectures that teachers developed in response to student learning goals. They needed more collaboration between teacher and peers and more autonomy in course material, recognizing that there are many ways to meet educational goals. They needed differentiated instruction allowing for choices in learning that cultivate challenges and autonomous learning. Students wanted less rote memorization, and more chances to develop conceptual understanding and critical thinking. Students wanted academic activities that could be applied to future goals and careers.

Current Realities: Environment and school culture

The schools we visited throughout the course of our study represented various points on a spectrum in terms of environment and culture. The first, which we will call Jacobs High School, offered little in terms of natural lighting and architectural continuity. Upon entering the fluorescent-shaded hallways, one could tell that the school was renovated at some point. However, it seemed as if the new additions were simply tacked on to the previous areas, resulting in a variance in styles, colors, and incomplete spaces. The second school, we will call it Salazar High School, was similar. The building itself is overcrowded, not secure, and not easily accessible for students with disabilities. One student recalled his every-day mode of travel through the hallways for us, for us, which he described as “latching onto another person’s backpack” in order to make it through the crowds to class. Teachers also described how they would latch on to a backpack chain to make it to their next classroom.

The school culture at both of these schools is similar in some ways, but unique in many others. At Jacobs, skipping class is the norm. Students do not feel engaged, and thus do not feel as if school is important. At Salazar, the exact opposite is true. To enroll at Salazar, students must apply and take a test. After being admitted, students must then retain a certain GPA in order to remain there. Because of this stipulation, students study, work on homework, or otherwise engage with school constantly, sometimes in place of eating or sleeping. In both schools, learning is predominantly teacher-directed, where students are not asked to problem-solve and act creatively with the learning material. However, at both schools, individual teachers were forming learning communities that broke away from this norm.

The third school we visited, Gillespie Academy, was similar to School A described in our introduction. The building itself opened into a welcome area with plenty of space, light, art, and aesthetically pleasing architectural features. Classrooms contained advanced technologically, were grouped together by area of focus, and contained spaces for individual brain work, collaborative work, and feedback presentations. In the class we visited, the teacher utilized the surrounding spaces and technologies, while allowing students to take the lead on their own learning. As soon as we entered the classroom, student groups spread out all over the classroom and campus, carrying out individual and collaborative tasks essential to the success of the project. This type of instruction was carried out school-wide, and was implemented as a direct enactment of the school’s vision. Students daily read visual representations of how the learning vision resulted in a growth-minded, inclusive culture. Signs in classrooms read: “Every problem has a solution, you just have to be creative enough to find it.” And “Mistakes are proof that you are trying.” The students acted as professionals, engaging in a real-world field in a collaborative style and regarding each one of their group members as equal. The quality and amount of work my team saw from these students was truly extraordinary.

Current realities: Pedagogy

The type of instruction that a school provides for their students can show evidences of the underlying pedagogical framework. At Gillespie, the students had a voice in creating their projects. They were encouraged to assert their voices and functioned within a system where rewards were not behavior-based, but offered in terms of access to additional resources based on their academic work done that day. Through this system of logical rewards based on creative work and perseverance, students were taught how to manage their time individually, manage time within a group setting, and how to collaborate with others productively. Their project-based scenarios for instruction included corporate issues and topics. The students were expected to find data, use factual evidence to make informed decisions, and present their findings in a group setting.

At Jacobs, the students in the class we observed were expected to function as independent individuals. They were given assignments and expected to complete them of their own volition. Yet, the assignments had no connection to their real-world situations, although the teacher may have had skills in mind that might be useful in future. They were given little assistance or praise for their work. We heard one teacher deride a student who was proud of their accomplishment on the assignment, speaking about the student as if the student were not there. The teacher stated, "His project needed a lot of work, but he's done a good job with what he has."

At Salazar, the students were expected to perform at a very high level academically. They had pre-set "benchmarks" of academic success that were expected to be met. The students were given explicit instructions that they were expected to follow, and students knew that following behavioral and academic expectations were non-negotiable if they wanted to remain at Salazar, with the understanding that Salazar would provide them with skills they needed.

All of these observations point back to the pedagogies at work in the schools themselves. Gillespie has a strong emphasis on collaborative instruction, student-led instruction, problem-solving and student discovery. Jacobs has a high emphasis on individual achievement and extrinsic motivation, shown by the behaviorist instruction techniques. Salazar also shows a strong emphasis on behaviorism and draws little from problem-based learning and collaborative techniques.

Connections between classroom learning and the real world

Pedagogy can also be determined using the evidences of Socio-Political Consciousness. Comparing Gillespie and Salazar, the differences can be clearly seen. At Salazar, the students were asked to integrate aspects of everyday life in their assignment. This assignment heavily relied on the search engine known as "Google". At Gillespie, the students are routinely asked to use cameras, voice recorders, video editing software, and more to craft their assignments and projects. The technology usage isn't the only indicator. The students at Salazar are motivated by their high GPAs, academic benchmarks, and graduation. They are quiet, respectful and high-achieving students. The students at Gillespie are treated as if they are professionals. They are taught soft-skills involved in collegiality, asserting your voice, persevering in the face of a problem-based challenge, in addition to their course work. They are internally-motivated and highly self-regulated. Using technology in the classroom can seemingly create a difficulty for teachers, since there is a lot more effort that goes into a classroom built on discovery when technology becomes involved. This, however was observed to be untrue by the instructor at Gillespie. Instead of feeling the need to have everything ready and prepared so that students

would have no issues, he let students encounter the issues that naturally came about so that they could practice solving problems that echoed real-life issues. This instance in particular demonstrated this teacher's use of student discovery and student-based learning in the classroom.

Students' role in the Classroom

In these classrooms, there are expectations for both the students and the instructors. For students, these unspoken roles can be a large contributing factor to the instructional environment. From observations of classrooms A and C, the following was discovered. Students at school A are referred to as interns of the course and treated as equals by the instructor. These students exhibited traits of intrinsic motivation, empowered learning, and enhanced relational ability. Students at school C are referred to as students and treated as those less knowledgeable. These students exhibited traits of high anxiety and stress, as well as a self-conception directly proportional to academic achievement. At both schools, the teachers express the intent for students to be fully welcome in the classroom. The teachers spend many hours planning lessons to engage their students. Students at school A, however, are more likely to fully participate in activities, while students at school C find assignments to be intimidating. The openness of classroom A exhibits signs of a learning community rather than a traditional classroom environment. The students felt more secure in sharing their ideas because of the pre-established culture of discovery and the classroom stance on mistakes. These are all signs of a student-centered learning community.

Teacher's role in the Classroom

At school A, the teacher considered themselves the "boss," and they treated their students as employees, as if they were in a real-world environment. This teacher used portfolios and projects as their methods of assessment and evaluation. The pedagogies that this teacher used focused on the classroom being student-centered. Collaboration was also a key factor in this classroom, and students often worked together as a team to complete the projects and portfolios that they were being evaluated on. This also simulated a work environment for the students, as they treated their peers as professionals. The teacher of classroom A also communicated well with students. To this teacher, it was important to hear what the students had to say. They used this information to adjust instruction and assessment. In classroom C, it seemed that the classroom was more teacher-centered. The teacher taught by relaying information to the students. This usually looked like the teacher telling the students to do something a certain way or to fix something, instead of asking the students to have ownership and to come up with the solution themselves. Assessment was primarily based on teacher evaluation. Students expressed that they wanted to have more student collaboration in this classroom.

Knowledge- Who has it?

In school A, from the student's perspective the instruction is mostly proactive, while at school C, the instruction style is mainly reactive. The theoretical framework for these classrooms seems to be constructivism and behaviorism, respectively. At school A, knowledge is sought out by the students and obtained through personal exploration and discovery. At school C, knowledge is presented to the students whenever the context is appropriate. At school A, the instructor is viewed as a resource, and may not always have all the answers. At school C, the teacher is the expert on the subject, and is able to answer any question that the students may have. Both teachers care about student success and growth, but the difference in theoretical background creates the two completely different environments.

What do teachers think of students?

How do they motivate/evaluate?

The motivation and evaluation strategies of the schools are also crucial to student success. At school C, students were engaged in the class because of the instructor's personality. The trust for the instructor was palpable, and this was exacerbated by the teacher's knowledge of each student's individual stories. The teacher valued perfectionism and clarified that mistakes were unacceptable, setting very high standards for the class. The teacher modeled the view of mistakes to the students subconsciously by apologizing whenever the instructor themselves made a mistake, even creating a punishment for themselves because of the mistake. At school A, the students were evaluated less on their performance and more on their creativity and innovation. Mistakes were seen as setbacks, but not punished in any way. The teacher didn't claim to know everything and encouraged individual student discovery. Two students were seen teaching each other something in the back of the classroom, and the teacher admitted that he hadn't even known the information until the student told him. Our view of mistakes can often show us what sorts of pedagogies we are operating under. Even if our classroom isn't one of student discovery, the students will still discover things about the world through observing the instructor's actions.

Cultural Competence

As an instructor, switching from one pedagogical framework to another can be a large shift in mindset as well as instructional technique and strategies. Implementing a few small strategies as a progression can make the transition smoother for both you and your students. Don't expect "instant results." CRP teaching isn't something that can be learned, implemented, and effective over the course of one lesson. It is a process of teaching that fosters critical thinking and autonomy in your students over time. The easiest way to incorporate these methodologies in your teaching is to frame your lesson around this question- "Are my students discovering anything new for themselves today?". It will surprise you to realize how much of our instructional techniques are based on teacher directives with little student discovery. Changing this can be as simple as asking a leading question rather than a pointed one. For an example, instead of asking your students "Why didn't we play that crescendo?", try asking "What dynamic making you think we could have shown better that time?". This gives students the opportunity to use error detection skills paired with their own critical thinking to assess the problems in their own playing. Be aware that the first few times these questions are asked, there may be little response or not the "correct" response. This type of question challenges the student's critical thinking skills rather than just their ability to answer questions. If students aren't in the correct mindset, they may not answer as readily. As well as phrasing just one or two questions in a way that promotes self-discovery, the teacher can also use the classroom as a way to promote collaborative learning. The question will be posed to the class, and then the teacher will use the class itself as a teaching tool by asking the students to share the answer they have with their neighbor. This gives the students a chance to process the higher-level thinking question while also putting them in a low-risk scenario with only one member of the audience rather than the entire class. After this, the teacher can either ask individual groups to share their answers, have the students write down the answers as an exit ticket for the class period, or have the students share with another friend before sharing with the group. When using this sort of activity, the teacher must become a master of *discernment*. Students, when given the chance to converse with other students may choose to not converse about the subject at hand. This type of chatter in a

room is different from the sound of productive conversation. Being able to distinguish between those two types of interactions becomes crucial when the instructor is deciding how long to continue the discussions. TIPS:

- Have a signal for the end of the collaborative times. (alarm on board, clock, spoken signal, physical signal, etc.)
- Plan at least one collaborative or thought-provoking question ahead of time
- Listen to the students' critical and original thoughts rather than the accuracy of answers
- If something is wrong, have the students say WHY it is wrong and HOW it can be fixed
- "Why did I stop Wednesdays?"
- Through time, the interactions will improve.