Engaging Instruction to Captivate Students

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— Science Education for Sustainable Living
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— Important Social Issues Through Popular Music
Unlike elementary teachers, whose young students are generally more eager to please adults as they demonstrate their own growing skills, the teachers of young adolescents must compete with an array of alternative interests and motivations for the attention of their students. Make no mistake, young adolescents are biologically primed to explore and learn new things. However, their teachers have to actively appeal to their students' modes of learning, their interest in changing social relationships, their interest in world events, and their search for defining who they are in the complex and dynamic world around them. This issue of the Middle School Journal will showcase a number of teachers who have mastered the craft of inviting young adolescents, mentally and emotionally, into learning.

This issue also reinforces for me the power of Schwab's (1973) conceptualization of the "practical curriculum." If one wants to understand learning in school, and by extension successfully plan for its occurrence, one has to put equal emphasis on students, subject matter, and the societal context, all managed by a knowledgeable, compassionate teacher. The nature of students themselves is the often "left behind" element in the "No Child Left Behind" discussion, now reinvigorated by the reauthorization hearings taking place in the U.S. Congress.

Several elements of learning illustrating Schwab's aspects of curriculum have serendipitously come together in this issue to show the possibilities when highly competent teachers are allowed the freedom to plan for involving their students actively in learning. Judy Willis (pp. 4–13) documents why cooperative learning is such a powerful strategy for the learning of young adolescents—it is, as she calls it, a "brain turn-on." David Virtue (pp. 14–20) and later Marklin and Wood (pp. 50–54) share the ways they have used the dramatic events of the 21st century to engage their students in multidisciplinary instruction. Instead of being confusing distractions in faraway places, Hurricane Katrina, 9/11/01, and the Indian Ocean Tsunami have proven to be powerful organizers for middle school curriculum. James Moore (pp. 21–29) brings major social issues to life through the use of popular music from the late 20th century. Moore and Willis also offer sound evidence of the power of multisensory experiences to strengthen learning outcomes.

Three articles show an exciting array of ways young adolescents have been led to study one of the major issues of our times: the relationship between human beings and our global environment. Molly Lawrence (pp. 30–39) has her students raising the questions and doing the work of scientists to bring together the needs of students with the standards for curriculum. Peter Hudson (pp. 43–47) reveals how the concept of sustainable living has been used to organize a middle school science curriculum. Marklin and Wood also show how the "mindings collage" approach can make study of the environment multidisciplinary.

Returning to a topic that has been addressed in several ways recently in the Journal—teaching English Language Learners—Pamela Farris, Pamela Nelson, and Susan L’Allier (pp. 38–42) share their use of literature circles to address the learning needs of young adolescent language learners. Finally, Sally and Don Clark (pp. 55–61) share their findings regarding how knowledge of the elements of middle school education can be used by leaders to improve the quality of young adolescent learning.

In the NCLB debate now heating up, those who are arguing about how teachers are to be evaluated, compensated, and even retained in the classroom need to get beyond the task of bubble filling and the resulting test scores in the quest to determine who is an effective teacher. They need to read stories like those in this issue of the Journal to see what competent, compassionate—and yes, effective—teaching really involves.
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Cover Photo by Alan Geho
Although I attended school for 21 years before entering the University of California Santa Barbara Graduate School of Education Teacher Education Program (TEP) in 1998, I had never worked in learning groups aside from the occasional science experiment or medical school cadaver dissection. Yet even those experiences were not designed as cooperative group work; they were arranged simply for the purpose of sharing materials.

Most of my classes in the TEP program incorporated cooperative learning techniques as an integral part of the instruction. In our classrooms, we never sat in rows, but always at round tables with room for four to six students. Rarely did a day go by when we did not work together on a cooperative project such as a poster and presentation, a short videotape, or a skit performance. I responded to this style of teaching and of learning quite positively, both cognitively and socially. Some of my enthusiasm was probably rooted in my being, as I am a global, interpersonal style learner (Checkley, 1997; Kagan & Kagan, 1998). But I found my classmates, with their varied learning styles, also inclined toward collaboration.

As I experienced the benefits of collaboration, I also discovered that an integral part of the process was the departure by our professors from the traditional roles of imparters and assessors of knowledge. Unlike the teachers I had previously studied under, my education professors assumed roles of information resources in more democratic classrooms. I discovered that relinquishing traditional autocratic control and allowing students to collaborate interactively with classmates to achieve common goals resulted in our becoming more invested and engaged in our learning. When I completed my masters of education degree in cooperative learning and became a middle school teacher, I found that I followed the modeling of my teachers and used cooperative learning in my own classroom. I then called upon my clinical and...
research training and experience in neurology to investigate the learning research being done through neuroimaging and brain mapping. I found evidence of brain and neurochemical activity that supported the positive results I was having with the cooperative approach to middle school teaching.

**Psychosocial Benefits**

Consider the increased comfort and enjoyment that students have when pleasurable social interaction is incorporated into their learning experience (Reeve, 1996). This is especially true during adolescence when peer group influence plays such an important developmental role in the psychosocial process of separation from parents along the road to individualization. For example, in early elementary school, students often raise up from their seats when they wave their hands enthusiastically in hopes of being called upon to answer a question. By middle school, some students consider it uncool to volunteer answers or even appear intelligent in class. These same students are more willing to participate and even show enthusiasm about challenging tasks when they are engaged in learning activities with supportive cooperative groups.

Erikson (1968) theorized that the developmental “crises” of adolescence are turning points during periods of increased vulnerability, and these turning points present opportunities for the development of psychosocial strength. He proposed that during these developmental stages the adolescent develops new capacities and psychosocial strengths by working through these developmental crises. Inclusion, a sense of belonging to a group where a student feels valued, builds resiliency. Resilient adolescents have greater success, social competence, empathy, responsiveness, and communication skills. They also demonstrate greater flexibility, self-reflection, and ability to conceptualize abstractly when solving problems.

Successfully planned group work can help to support students during these developmental crisis opportunities by reducing the fear of failure that can cause them to avoid academic challenges. Well-structured cooperative group activities build supportive classroom communities, which, in turn, increase self-esteem and academic performance.

**Neuroimaging—Watching the Social Brain Learn**

Neuroimaging and neurochemical investigation provide evidence of the brain’s response to stress as well as to pleasure and positive social interaction. Research on the amygdala reveals it to be one location of an affective filter in the brain (Pawlak, Magarinos, Melchor, McEwen, & Strickland, 2003). During periods of high stress or anxiety that some students may experience when asked to do a math problem on the board or make an oral presentation to the class, their emotional state is associated with greatly heightened metabolism (more glucose and oxygen use) flooding this “emotional” portion of the limbic system on Functional Magnetic Resonance Imaging (fMRI) studies.

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**When students participate in engaging learning activities in well-designed, supportive cooperative groups, ... their brain scans show facilitated passage of information from the intake areas into the memory storage regions of the brain.**

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When the amygdala is in this hyperexcitable, anxiety-provokd state, there is profound reduction in the neural activity indicative of information flow into and out of the amygdala. In the normal, relaxed state, the brain receives information as sensory input (e.g., for hearing or vision) into specific sensory receptive centers. From these areas, neural pathways project this information to the amygdala. In the amygdala emotional meaning may be linked to the information and connections are made with previously stored, related knowledge (Chugani & Phelps, 1991). The new information, now enhanced with emotional or relational data, then travels along specific neuronal circuits to the higher cognitive centers of the brain, such as the prefrontal cortex, where information is processed, associated, and stored for later retrieval and executive functioning (Kato & McEwen, 2003).

In fMRI scans of adolescents in states of affective, emotional anxiety, when the amygdala is metabolically hyperactive, the pathways that normally conduct information in and out of the amygdala show greatly reduced activity. Thus, new information is blocked from entering the memory banks by this metabolic blockade of the hyperactive amygdala (Toga & Thompson, 2003).
When students participate in engaging learning activities in well-designed, supportive cooperative groups, their affective filters are not blocking the flow of information. When you plan your group so that each member's strengths have authentic importance to the ultimate success of the group's activity, you have created a situation where individual learning styles, skills, and talents are valued, and students shine in their fortes and learn from each other in the areas where they are not as expert. They call on each other's guidance to solve pertinent and compelling problems and develop their interpersonal skills by communicating their ideas to partners. The brain scans of subjects learning in this type of supportive and social learning situation show facilitated passage of information from the intake areas into the memory storage regions of the brain. This is consistent with the original cognitive psychology research and theories of Krashen (1982) about the affective filter—that learning associated with positive emotion is retained longer and visa versa.

**Reward-Stimulated Cooperative Learning**

Studies of brain neurochemistry also support the benefit of associating rewarding, positive social experiences with the learning process. This has been called dopamine-based reward-stimulated learning (Waelti, Dickinson, & Schultz, 2001). Information travels along nerve cells' branching and communicating sprouts (axons and dendrites) as electrical impulses. However, where these sprouting arms connect to the next neuron in the circuit, the information has to travel through a gap between the end of one nerve and the beginning of the next one. In these gaps, called synapses, there are no physical structures, unlike the wires that connect appliances to electric outlets, along which the electric impulses can travel. When crossing over synaptic gaps, the information impulse must be temporarily converted from an electric one into a chemical one. Neurotransmitters are brain proteins released by the electrical impulse on one side of the synapse, to then float across the synaptic gap, carrying the information with them to stimulate the next nerve ending in the pathway. Once the neurotransmitter is taken up by the next nerve ending, the electric impulse is reactivated to travel along to the next nerve cell.

Dopamine is the chemical neurotransmitter most closely associated with attention, memory storage, comprehension, and executive function. The theory of reward-stimulated learning and other reinforcement learning theories are based on the assumption that the brain finds some states of stimulation to be more desirable than others. The brain is believed to make associations between specific cues and these desirable states or goals. Dopamine activity can be evaluated through neuroimaging. It has been found that dopamine release is increased in brain centers associated with learning and memory in response to rewards and positive experiences. Research found that the brain released more dopamine into these learning circuits when the individual was playing, laughing, exercising, and receiving acknowledgement (e.g., praise) for achievement (Salamone & Correa, 2002).

These frontal lobe, dopamine-sensitive regions are seen on neuroimaging as activated in pleasure and reward, wakefulness, and satiety. It has been shown that drugs of abuse affect nerves along this dopamine pathway. This is a basis for theories that when the brain does not release its own dopamine reward from pleasurable experiences it is vulnerable to the allure of the psychoactive drugs that activate the dopamine pathway (Everitt, Parkinson, Olmstead, Arroyo, Robledo, & Robbins, 1999). Follow up research found that when subjects anticipated pleasurable states, there was increased release of dopamine associated with the expectation of pleasure (Holroyd, Larsen, & Cohen, 2004).

Many of the motivating factors that have been found to release this dopamine are intrinsic to successful cooperative group work such as social collaboration, motivation, and expectation of success, or authentic praise from peers. Because dopamine is also the neurotransmitter associated with attention, memory, learning, and executive function, it follows that when the brain releases dopamine during or in expectation of a pleasurable experience or reward, this dopamine will be available to increase the processing of new information. That is what occurs when students enjoy a positive cooperative learning experience, and even when they anticipate participation in that type of activity.

**Cooperative Groups Generate More Participation and Stimulate Multiple Brain Regions**

Cooperative group activities, unlike whole class discussions or independent work, provide the most opportunities for students to express their ideas, questions, conclusions, and associations verbally. Gibbs (1995), in her book *Tribes* reported that in
traditionally structured classes each student has about five to ten minutes of individual time to engage in classroom academic discourse. In group work, that amount of time increases dramatically. She found that students experienced a greater level of understanding of concepts and ideas when they talked, explained, and argued about them with their group, instead of just passively listening to a lecture or reading a text.

In addition, metabolic brain activity accelerates during active constructive thinking, such as planning, gathering data, analyzing, inferring, and strategizing versus passive information acquisition. When the verbal center becomes engaged while information or a task is being learned, more neural activity travels between the left and right brain. (Chugani & Phelps, 1991). Thus, when students describe their thinking verbally to the group or work on a group chart, diagram, or project, the new information becomes embedded in multiple brain sites, such as the auditory and visual memory storage areas. Now, with neuroimaging, we know that this multicentered brain communication circuitry enhances comprehension, making new material more accessible for future use, because it is stored in redundant brain areas (Giedd, et al., 1999).

In mathematical collaboration, students learn to test one another's conjectures and identify valid or invalid solutions. Group members are all engaged as they discover techniques to test one member's strategy. If it does not work on repeated tries, they invalidate that strategy and try another. Students who just “don’t get it” via a teacher's didactic lecture benefit from the different perspectives of classmates with similar knowledge banks on the subject.

In literature and social studies, students have a small, safer place to try out ideas they might not express to the entire class. They learn that there is validity to personal interpretation, and they can experiment with critical thinking in a structured small-group setting, with scaffolding provided as needed via teacher prompts about what to discuss and how to run the discussion. This process empowers students to become more active not only in whole-class discussions, but also in their homework and in speaking their opinion outside of the classroom. This is especially critical during adolescence when “fitting in” is such a strong need that individuality can become stifled (Jernigan & Tallal, 1990).

As neuroimaging evidence has shown, the more a student is engaged in a learning activity, especially one with multiple sensory modalities, the more parts of the brain are actively stimulated (Jagust & Budinger, 1993). When this occurs in a positive emotional setting, without stress and anxiety, the result is greater long-term, relational, and retrievable learning.

What Constitutes Cooperative Work?

To qualify as cooperative work, rather than individuals working in parallel in a group, students must need each other to complete the task. Students are expected to participate in tasks that are clearly constructed and necessary for the group's success. The teacher remains active as a circulating resource and, when necessary, an arbitrator, but students should be capable of carrying out their tasks without constant, direct intrusion by the teacher. Students, not the teacher, are responsible for accomplishing their tasks in the way they think best, with accountability to each other and to the teacher's standards. Ideally, there is a clear rubric for individual and group assessment, and the students and the teacher take part in the assessment process (Antil, Jenkins, & Watkins, 1998).

When setting up lessons for successful collaboration in cooperative groups, consider the following guidelines that will then be expanded upon with examples of specific cooperative group activities that emphasize each of the five characteristics.

- All members have opportunities and capabilities, frontloaded if necessary, such that different students can make their own special contributions. This may require planning ways for students with different learning or intelligence styles to make special contributions to the group task (Webb, Nemer, & Chizhik, 1998).

- Students learn to respect each other as group members. Often this requires teacher demonstration with role-playing.
The group negotiates roles with guidance from the teacher. Designated roles can vary from group to group depending on the nature of the task assigned.

There should be more than one answer or more than one way to solve the problem or create the project.

The activity should be intrinsically interesting, challenging, and rewarding.

Sample Brain-Friendly Cooperative Projects

Cooperative group activities I have used in my middle school classes have had different emphases and goals, but each also conforms to these basic five characteristics of successful group work. Examples of activities that feature each of the aforementioned successful cooperative group guidelines follow.

All members have opportunities to make valued contributions to the group product

Dinosaur Extinction—Science and Math (extinction theory and scientific notation):

In this activity students are each given an area of expertise that other group members do not have so they are valued for this information. This is a type of frontloading. This increases each student’s connection to the group socially and academically, thereby lowering their affective filters. Because there are elements of choice and real-world application, the information students process is patterned with relational memories in the hippocampus and prefrontal lobes for successful storage as long-term memory.

In the dinosaur project, the final process of making informed individual decisions about which extinction theory the student chooses to support brings in frontal lobe executive functions. The group project also incorporates and values multiple skills and talents. This results in more opportunity for students to connect and succeed through their individual learning styles and to engage more of their brains with multisensory stimulation.

Through a strategy called tea party, card party, or jigsaw, students are first put in groups where all five members of the group read articles and text about one of the dinosaur extinction theories, which include:

- **Cretaceous-Tertiary Asteroid Theory** (about 65 million years ago): This theory also previews the next topic we will study in geography, continental drift, and the splitting of the supercontinent Pangaea.

- **K-T Extinction** (about 65 million years ago): K is for Kreide, meaning chalk in German, which describes the chalky sediment layer from that time; T is for Tertiary, the next geologic period, when all land animals over about 55 pounds went extinct.

- **The Alvarez Asteroid Impact Theory**: An asteroid four to nine miles in diameter hit Earth about 65 million years ago, penetrated the Earth’s crust, scattered dust and debris into the atmosphere, and caused huge fires, tsunamis, severe storms with high winds and highly acidic rain, seismic activity, and perhaps even volcanic activity.

- **Greenhouse Effect**: Large amounts of methane, changing the Earth’s atmosphere, caused a greenhouse effect. The methane source is theorized to have come from deep-sea algae deposits and/or from by-products of plant-eating dinosaurs’ digestion.

- **Over-foraging**: The herbivorous dinosaurs’ over-foraging and the carnivorous dinosaurs’ over-culling of the herbivorous dinosaurs could have triggered mass starvation.

As neuroimaging evidence has shown, the more a student is engaged in a learning activity with multiple sensory modalities, the more parts of the brain are actively stimulated.

After the first groups—which have become expert in one of the five theories of extinction—have read about, discussed, and answered questions I provided, and each group member has completed notes that I reviewed with answers to the questions, the groups are shuffled to form new groups. Each of these secondary groups is the true cooperative group, and each group member is now an expert on one extinction theory.
Group Project:

1. Each group member explains his or her extinction theory while others take notes.

2. After open-ended, student-inspired discussions, each member selects the theory he or she feels best explains dinosaur extinction.

3. Through vote or consensus (a process they have practiced) the group selects the theory they will use for their project.

4. Groups can demonstrate their theory through a skit, report, PowerPoint presentation, overhead projector charts, a video production, models, or several of these options.

5. Each group must include mathematics using scientific notation with exponents for the very large numbers involved in dinosaur research, such as 50 million is 5.0 x 10 to the 7th power.

6. Groups present their findings to the class and complete self- and group analysis reports on rubrics provided.

7. Individual and group grades are based on teacher observations, final products and cooperative behavior.

Students respect each other

Quiz Show—Helping Students Grow More Brain Connections: Review, practice, and cognitive processing of learned information builds more connecting dendrites and strengthens the membranes surrounding these interneural connections resulting in faster information transport and more efficient memory retrieval.

Using a television quiz show format, students are divided into four teams. Each team works with the same information source, the class literature text from which they took notes for homework. In addition to the group task of creating quiz show questions for their opponents, there is a specific group job for each student. This question-making activity occurs several times a week, using the material from several chapters each time.

The final competition takes place on completion of the book and serves as a third review of the material before the formal individual comprehension assessments. The three reviews consist of the students’ first set of notes taken at home independently, the cooperative quiz-making sessions, and, finally, the quiz show itself.

The individual jobs rotate each time the group meets. They include scribe (writes down questions and answers that the group approves) and materials coordinator (makes sure all students bring their books and notes and get the clipboards with previous questions out of the bin). Other jobs are judge (when the group disagrees about whether a proposed question is satisfactory for the quiz show, the judge makes the final ruling, but must back up this opinion with reasons), cooperative overseer (takes notes on cooperative behavior to give the group feedback at the end of the session and reminds students to follow the cooperative rules already set and posted, such as not interrupting and all participate). The analyst keeps track of the group’s reasons for rejecting questions. These are also reviewed at the end of the session with the expectation that the metacognition will result in improvement.

Students and not the teacher are responsible for accomplishing their tasks in the way they think best, with accountability to each other and to the teacher’s standards.

Through this cooperative activity, neuronal network reinforcement of the reviewed material is more engaging. The group processing of text material offers another modality of information input, thereby making the knowledge more accessible for students with varied learning style preferences: auditory, visual, kinesthetic (movement during the quiz show), and interpersonal.

The group negotiates roles with teacher guidance

Lincoln-Douglas Debate: Group work involving skits, demonstrations, debates, or other dramatizations appeals to the kinetic, verbal, and interpersonal strengths of many students, especially in middle school when energy levels run high and passive sitting in classrooms with directed lectures can be the best way to lose students’ attention. Academics are not usually the first priority during adolescence, and dramatizations as part of group work can bring variety and harness energy, and teacher supervised socializing activities in a safe
classroom community can increase belonging and confidence. When students observe modeling and then practice the skills needed for successful group work, they are able to build their skills of self-control, managing their emotions, and cooperating and resolving conflicts with others while building executive function, all in a positive emotional state for building emotion links to academic learning.

Dramatizations have the added benefit of activating regions of the brain where prior relational memories are stored. The personal meaning inherent in dramatization results in more opportunities for new information to be connected by the relational memory hook-ups that enhance patterning and retention.

Students work in groups, using their individual skills and interests, to put on a political campaign supporting Lincoln or Douglas through posters, political cartoons, oral debates, skits, and computer or video ads. This project requires students to work together to negotiate rules for campaigning, rules for debating, and rules for scoring the debates. Students also need to negotiate with group members for who does which activity such as portraying Lincoln, making campaign posters, directing the campaign video.

If the initial presentation of a new unit incorporates sports, popular music, and audiovisual technology, at least one of these will resonate with most middle school students through their primary or secondary learning strengths or interests.

The teacher determines how many students can work together on some of these activities, but the students must first prepare a plan (prioritizing, organizing, and judgment skills) to show for which part of the poster or video each individual will be responsible. For the final debates (there can be several sets of debates, depending on size of the class and of the groups) other teachers can be brought in as judges, and the students give them the scoring criteria that were finally agreed upon by compromise and consensus.

Designated, rotating individual roles within the group can include recorder, participation monitor (someone who keeps track of who is participating such that if one member has already given three suggestions and others have not had a chance, the overly active participant is asked to give others time to present their views), creative director (if a physical product such as a poster or computer presentation is part of the project), materials director, accountant, and secretary as needed and with similar duties as described for the quiz show groups.

There is more than one answer or way to solve the problem “What Is Life?”—Group Problem Analysis:

Bringing in all students from the beginning of a unit of study increases relational memory. By presenting the big picture through a comprehensive experience that links with some area of student interest, past experience, or real-world connections, relational memories are triggered and the hippocampus is activated on brain scan as the site where connections are made with the new information that allow it to be coded into recognizable and storable patterns.

For example, if the initial presentation of a new unit incorporates sports, popular music, and audiovisual technology, at least one of these will resonate with most middle school students through their primary or secondary learning strengths or interests. This initial exposure to the topic will stimulate their connection to the lessons that follow, because they were engaged early by linking the unit to their interests or personal experiences.

Starting with an innovative presentation such as a recent newspaper report, guest speaker, or by posing a thought-provoking question through a demonstration, teachers can all engage students. An example is the engaging and personally relevant introduction to a biology unit, prompting students to define what it means to be alive. I ask students in cooperative groups to define what constitutes a living organism and to record their responses. They then practice prioritizing and ordering executive function skills as well as the social skill of reaching a consensus as they decide as a group what characteristics of being “alive” are most significant in defining life. I then give each group a candle that I light and ask them to see if the flame fits the list of functions that define living things. They then refer to their lists, which usually include: consume oxygen or carbon dioxide, reproduce, react, and has a beginning and a termination. The next question for them to debate as a group usually presents a curious problem. If the flame fits with the generated
The activity should be intrinsically interesting, challenging, and rewarding

Cornucopia Project: Early engagement of attention through multisensory experiences and high personal interest is well suited to the multisensory, fast-paced world of adolescents who have grown up in the personal technology age. This middle school American history activity coincides with the study of lifestyles of early settlers in the Colonies and works especially well if done near Thanksgiving.

Classroom visitors, costumes, and food are of high interest to students in any grade, and this activity always resonates with one or more interests of the middle school students who have participated in it. For the big picture or global introduction to the unit, we start with a guest speaker from the community. One year we invited the director of the local farmers markets and food stylist. Without any advance notice (to incorporate surprise and novelty) she entered the class in colonial attire with a large basket of produce indigenous to the early New England Colonies. First, she gave the students several unfamiliar vegetables to taste. Distributing this food let the students know it would be an interactive experience and kept them “fed” so that they would not focus on any hunger prompted by looking at the food. Next, she said, “You have been told not to play with your food, but today we will play with food.” Using humor and, again, surprise she won their trust and kept their attention. The promise of play with food also alerted the interest of the tactile-kinesthetic learners and AD/HD students.

Her presentation continued with demonstrations of how to cut and display foods to make them look more appealing. She explained which foods were the first ones available for either gathering or planting by the colonists, and she finished by demonstrating the construction of a cornucopia. She preceded this demonstration with the assurance that the students would have an opportunity to make their own cornucopias as soon as she finished.

This confirmation of a desirable activity before a passive demonstration is an important strategy to keep the focus of high-energy adolescents because they know that the attention they give at the start will help them be successful in a connected activity that will immediately follow. Increased brain activation takes place when subjects are told they will be asked to repeat or immediately use the information or activity they are about to learn (Sousa, 2000).

When the food designer left, all the students were engaged, enthusiastic, and ready to start building their cornucopias. She left them with fruits and vegetables to make cornucopias using rolled tagboard and extra carrots, radishes, and potatoes for food design carving.

Before making the cornucopias, we had a brainstorm session to connect the morning’s speaker and group cornucopia activity to the colonial unit that would follow. The experience had generated interest in the colonial period, and students prepared a list of some of the questions they would still like to ask the speaker. Their questions were compiled on a chart, and questions were added based on their suggestions about other facets of colonial life they believed might be interesting to investigate.

After a brief reminder about cooperative group behavior, fair division of activities, and decision by consensus, students were divided into small groups where they constructed and filled cornucopias. I assigned the students to groups based on their interests, compatibility, and learning strengths. The latter consideration enabled students with limited academic or social skills to participate in groups where their creative or intellectual strengths would be acknowledged as valued contributions to the group project. Depending upon student interest and group consensus, one or two students per group drew a picture of their cornucopia, one student photographed it and posted it on the class Web site, and another student or two researched the origin of cornucopia and its relation to Greek mythology. That initial day’s group activity was low stress and planned for fun, positive emotional connections, flashbulb-connecting memories, and to promote curiosity and interest in the unit to come. It was not, in itself, high in academics and may not have added many facts to students’ rote memory file with which they could answer questions on a standardized test; but the entire class, from the entrance of the guest speaker to the construction of
the cornucopias and the starting of the Web pages, was engaged and actively participating in a history class activity that was fun. It is not often enough that middle school students are provided the opportunity to associate academics with fun. When they are able to make this association, it helps relieve frustration and revitalize their connection with school.

The next time class met, students were still in their cooperative groups, but now each student in the group did Internet research about one of the 20 questions they selected from the list we brainstormed regarding colonial lifestyle, agriculture, foods, Thanksgiving, cornucopias, food styling, and other food careers. Their homework from the previous class was to copy from the brainstorm list the five or six topics they thought they might want to research and to use books or the Internet to see which one or two topics were still interesting and had accessible information.

Before the next class, I added five questions (one per person in each group). The questions added were incorporated to avoid missing any of the curriculum standards for the unit. Each student, therefore, had his or her own high interest, personal choice question plus one of the five I added. The formalized list of questions was then projected on the overhead, and students wrote on note cards their first and second choices of which topics they would most like to further investigate.

To refresh students’ memories of the information they had already learned and to share new information they discovered doing their homework research, we did a roll call topic for taking attendance. When their names were called for roll, students were to respond with one thing they remembered from the cornucopia presentation the previous day. This strategy increases focus and recall.

Cooperation with group members was necessary to ensure all jobs needed to create the Web page would be done and research was not duplicated. The final project of each group was a Web page within the class Web page folder titled Cornucopia. Students were able to work through their learning style strengths and interests. They conferenced with me individually to determine if their topic of research was at their appropriate level of challenge.

Students received feedback from parents and other classes who visited the Web site where there was a place to write compliments, ask questions of the Web page creators, or add related information. By starting the colonial social studies topic with the experiential, artifact-centered, novel, and motivating guest speaker cornucopia experience, the students became curious, intrinsically motivated to ask questions, and they were willing to do the research. In addition, they were motivated to inquire further to satisfy their curiosity about the questions that they, as a class, had created, and the topics they individually selected. Instead of being passive recipients of the unit of study, they were co-creators of an investigation that was developed from their own interests and goals.

**Conclusion**

As the groups are working, teachers can promote the desired cooperative behavior by modeling how students can periodically check in with each other to answer these questions during the activity:

1. Is everyone talking?
2. Are you listening to each other?
3. Are you asking questions of fellow group members? What could you ask to find out someone’s ideas?
4. Are you giving reasons for ideas and expressing different opinions?
5. What could you ask if you wanted to find out someone’s reason for a suggestion?

At the conclusion of each day’s group time, group members assigned to record feedback for the group reveal their observation data in their small groups. This is followed by teacher feedback to the whole class, including public praise to students who have done well in the context of group work, particularly those who are not usually high academic achievers or who tend to be classroom management challenges. Successful compromise and inclusiveness, rather than speed at solving the problem or completing the project, is acknowledged.

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**The process of collaborative work is associated with increased neural activity in relational and emotional memory connections and long-term memory storage.**

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Classrooms where students are engaged in well-planned cooperative work are more joyful places in which management issues diminish and students develop social and learning skills. Now we know that the process of collaborative work is associated with increased neural activity in relational and emotional memory connections and long-term memory storage. It is reassuring in times of rigid curriculum requirements to have not only the academic and social evidence of the benefit of cooperative activities, but also to have the objective neuroscientific data to support what teachers, and for that matter, the ants and the bees, have known all along.

Editor’s Note
Dr. Willis’s book, Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher, was published in August 2006 by the Association for Supervision and Curriculum Development.

References

To get great ideas for using this article for staff development visit www.nmsa.org and click on “Professional Development” then “Using MSJ for Professional Development,” March 2007 issue.
Engaging Instruction to Captivate Students

Seizing Teachable Moments to Develop Integrative Middle Level Curriculum

This We Believe Characteristics

- A shared vision that guides decisions
- Students and teachers engaged in active learning
- Curriculum that is relevant, challenging, integrative, and exploratory
- Multiple learning and teaching approaches that respond to their diversity
- Organizational structures that support meaningful relationships and learning

By David C. Virtue

“What’s wrong?” Cameron asked.
“What happened?” added Liz.
Gradually, the rest of my seventh grade students raised their eyes from their geography books and looked toward me as I stood in stunned silence near my radio. The second plane had just hit the World Trade Center.
“I’m not sure,” I replied.

None of us was quite sure what was happening on the infamous morning of September 11, 2001. Throughout the day, as news spread through the school grapevine about the attacks on the World Trade Center and the Pentagon, my students were asking questions and drawing conclusions about the tragic story that was unfolding before us. When they came to school on September 12, they brought even more questions, and so did I. Who were the people responsible for these acts of terror? Why would they do such a thing? How should we, as individuals and as a nation, respond to these attacks? Despite the flood of information that immediately inundated the media, few things were certain. One thing, however, was crystal clear to me—I had to change my world geography curriculum.

September 11, 2001, was a critical teachable moment that provided me and my team with an avenue to middle level curriculum that was relevant, challenging, integrative, and exploratory (see Virtue, 2002). As Erb (2005) suggested in his November Middle School Journal column, Hurricane Katrina has opened a similar window of opportunity for middle level students to present their projects.

PHOTO BY ALAN GEHO

This boy presents his project growing from an interdisciplinary unit based on September 11.

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level educators to focus the minds of young adolescents on important issues that are meaningful to all of us. However, developing curriculum around events and issues like these requires a unique curricular process that allows teachers to plan in real-time as events unfold and issues become salient. Teachers need to adopt a generative approach to curriculum planning that involves responsive and reflective practices. In this article, I draw upon my experiences as a seventh grade teacher during and after the terrorist attacks of September 2001 (Figure 1) and as a middle level teacher educator during the aftermath of Hurricane Katrina in September 2005 (Figure 2) to describe this curricular process.

Curriculum Planning at the Middle Level

What should the middle level curriculum look like? What knowledge, skills, and dispositions should be taught? How should it be organized? While the middle school curriculum question is far from settled, there is broad consensus among middle level advocates that young adolescents need an academically excellent curriculum that is relevant, challenging, integrative, and exploratory (National Middle School Association, 2003; Pate, 2005). The question becomes: How do we get there?

A growing body of literature offers suggestions for planning integrated curriculum (see e.g., Drake, 1993; Jacobs, 1989; Lounsbury, 1992a; Wood, 2005). This literature includes descriptions of curricula with a variety of topical or thematic foci, and these rich examples are drawn from diverse middle school settings throughout the United States and elsewhere. While the treatment of curriculum integration in the literature has grown increasingly diverse in terms of breadth and scope, there is a certain deliberate planning process that prevails whereby a group of teachers gets together in the summer to hammer out an integrated, standards-based unit plan to be implemented during the school year (see e.g., Bolak, Bialach, & Dunphy, 2005). While teachers following this approach may successfully integrate the content areas, they may not address student questions and concerns, which are at “the heart” of an academically excellent middle grades curriculum (Pate, 2005, p. 16).

Beane’s integrative approach to curriculum takes seriously the questions and concerns of students. He has suggested that “the planning begins by asking [the students] to say what those questions and concerns are and subsequently what themes they cluster around” (Beane, 1993b, p. 22). However, sometimes during the school year questions and concerns arise spontaneously; the students do not need to be asked for them. Furthermore, some events that capture student interest are of such import that teachers must consider responding. During the past five years, we have witnessed compelling events such as a contested election, terrorist attacks, a declaration of war, devastating natural disasters, and a heated national debate about immigration. Issues and questions surrounding events like these inevitably find their way into the classroom, and to respond appropriately, teachers need to be able to teach about them in real-time while the buzz is still buzzing. I hold that teachers can accomplish this by adopting a generative approach to curriculum development.

A Generative Approach to Curriculum

Scholars have long called for a curriculum in the primary grades that is “emergent” (Jones & Nimmo, 1994) or “generative” (Cordeiro, 1995; Fisher & Cordeiro, 1994). My conceptualization of a generative approach to curriculum at the middle
Hurricane Katrina Unit Overviews

Too Many People Too Fast: The Effects of Displaced People from Hurricane Katrina on Host Communities
Noel Bridges and Megan Byrum
This unit provides an opportunity for middle school students to learn about the effects of disaster and evacuation on population and infrastructure in those areas able to aid in disaster relief. The main objective of this mini-unit is for students to demonstrate an understanding of how a crisis can affect communities separate from the devastated community. The students will engage in this objective through three lessons lasting one to two class periods each. The first lesson, adapted from www.lessonplanet.com, introduces students to the concept of rapid growth in a city using M&Ms to represent evacuees and cups of various sizes to represent the infrastructure of the town. In the second lesson, the students predict the impacts that the evacuees may have on their host communities based on an analysis of raw data from The State newspaper. In the final lesson, the students read and comment on a variety of articles concerning the people who were displaced from Hurricane Katrina and how they have affected the host communities. The students will make connections between the impacts of migration after Hurricane Katrina to the impacts of other examples of mass migration, such as the Great Migration of the early 20th Century.

The Power of Pictures: An Integrated Curriculum Unit Plan
Tiffany Crist and Nikki Amerson
Several images that came out of the Hurricane Katrina experience provoked controversy on the national stage, and it is important for students to understand why these images have such great power over people. In this integrated unit students critically analyze images in the media and become critical consumers of the world of images that surround them. In lesson one, students explore ways pictures can communicate important information through a responsive writing activity and class discussion about images of Hurricane Katrina. In activity two, students discuss as a group their reactions to powerful images presented in class, and they write about these in their journals. As the teacher leads a discussion about the power of images, students consider visual images from Hurricane Katrina as well as famous or historical images that represented “power” in other times (e.g., Rosie the Riveter). In lesson three, students demonstrate their knowledge of the elements in a powerful picture as they create a class scrapbook of digital images with accompanying explanations about the power of each image. The goal of this activity is to practice skills or analysis that students can apply in other contexts.

Holding Government Responsible: Analyzing the Government and You
Michael Burrack and Sharla Benson
In this unit students critically analyze the role of government and its response to disasters. In the first lesson students consider human diversity and difference, and they begin to examine ways that these are portrayed through various media. The second lesson focuses specifically on disaster preparedness and the impacts of limited resources on human survival. Students examine satellite images in the third lesson, and they develop a mathematical strategy to approximate the overall land area of devastation, and the land area of New Orleans affected by flooding. Students build on lesson three in the next lesson as they use demographic statistics to identify low-income population centers with respect to the severity of flooding. Lessons five and six involve role-play as students analyze articles and reports about Hurricane Katrina from assigned perspectives and later compare the government response to this disaster to responses to other disasters. The unit culminates with a panel discussion in which students debate the issues from their assigned roles.

Should New Orleans Be Rebuilt?
Amy Stout and Jennifer Swank
The important question in this unit is: Should New Orleans be rebuilt? After viewing a slide show of NASA satellite images of Hurricane Katrina and New Orleans before and after hurricane impact, students participate in a Think-Pair-Share activity that leads into a class brainstorming session on how they believe New Orleans was affected by the hurricane and what issues it will face next. From this discussion students generate research topics that may include: water/air pollution, structural damage, economic loss, tax availability, loss of historic buildings, etc. After reading the book Someday a Tree, by Eve Bunting, students engage in journal writing and a group brainstorming session to generate a list of criteria for deciding whether or not to rebuild New Orleans. From here the unit follows the students’ list of questions and interests. As a final assessment each student prepares a proposal to rebuild New Orleans (or alternate proposal of what should be done). While Hurricane Katrina is the main focus of the unit, the goal is to get students to think critically about their stance, the evidence, the research process, and their conclusions.

Who or What Is Important in Life?
Kelly Card, Kenzie Lang, and Tara Nanke
If you had to evacuate your home, what would you take with you? Would it be family photos, your pet, or your $100 pair of Nike tennis shoes? In this one-week unit, the overall goal is for the students to determine what is important to sustain life for a community that might be hit by a disaster. We would like them to realize all of the thought that must go into making an evacuation plan for a community as well as each individual’s priorities to survive. The first lesson introduces students to the concept of a planned evacuation as they respond to the prompt: What would you bring (and why) if you and your family had to evacuate your home in 24 hours because a hurricane is coming toward you? The focus becomes broader in the second lesson as students analyze evacuation plans for an entire city and consider the roles of the many people involved in implementing them. In the third lesson, students assume various roles as they work in groups to design an evacuation plan. As a final assessment, students critique an actual evacuation plan.

*Unit plans will be made available at http://www.itl.sc.edu/itl/Faculty/Virtue/virtue.html

level builds on the notion of generative curriculum advanced by Fisher & Cordeiro (1994). Their view of curriculum is “generative” in the sense that it “derives in a creative and intuitive way from the ongoing life of the classroom” (p. 2).

(Generative curriculum) starts and develops with children’s interests, interests that remain at the center of the inquiry. As children and teachers pursue areas of interest, new curriculum is created collaboratively, learning becomes dynamic, and one avenue of interest leads to another. As themes and topics are initiated and pursued throughout the year, connections and relationships are made. Working with curriculum this way allows for authentic learning and provides teachers with opportunities to be learners, too. Teachers become learners who teach (Cordeiro, 1993) and the children become curriculum coordinators with teachers. (Fisher & Cordeiro, 1994, p. 2)
Central to this notion of “generativeness” is the co-authorship of curriculum by students and teachers. Such ideas about curriculum resonate with the philosophy of curriculum and curriculum integration widely endorsed in the middle level literature. *This We Believe*, for example, calls for curriculum that “is distinguished by learning activities that appeal to young adolescents and create opportunities to pose and answer questions that are important to them” and that “is focused on issues significant to both students and adults” (National Middle School Association, 2003, p. 19, 23). In addition, Beane’s work has consistently advocated student-teacher collaboration in the development of curriculum (Beane 1993a, 1993b, 1997).

While Fisher and Cordeiro’s (1994) concept of generative curriculum aligns well with ideas about curriculum promoted in the middle level literature, there is a subtle distinction that needs to be emphasized. They identified three strands of learning that intertwine in a generative curriculum: theme studies, mini-topics, and incidental learning. Theme studies focus on broad topics or questions that the whole-class studies over an extended period of time, while mini-topics are smaller units of study that an individual student or group of students may pursue. Incidental learning refers to the unplanned lessons learned spontaneously in the daily life of the classroom (Fisher & Cordeiro, 1994). This last strand—incidental learning—gives the generative curricular process a fluid, organic quality that distinguishes it from the more deliberate curriculum planning processes typically described in the middle school literature.

There are no recipes for planning integrative curriculum at the middle level (Beane, 1993b). A generative curricular process does not unfold through a series of prescribed steps or stages. Rather, it can be thought of as a multidimensional set of practices that emerges when a teacher or a team acts upon certain dispositions toward middle level curriculum. These dispositions are reflected in the NMSA Standards for Teacher Preparation (National Middle School Association, 2005). When a teacher or team adopts a generative approach to curriculum, these dispositions manifest themselves through a set of core responsive and reflective practices, which I will discuss later in the article. In the next section, I introduce the concept of “ecological responsiveness.”

**Ecological Responsiveness**

Barker (2004) characterized a responsive teacher as a knowledge architect “who practices ever-evolving customized instruction for individual students and groups of students” (p. 51). A generative curricular process may begin with a decision to initiate curricular customization in response to a critical teachable moment, such as Hurricane Katrina or the terrorist attacks of September 11, 2001. These are examples of compelling events situated at the intersection of instructional opportunity and professional responsibility. To respond or not to respond? That is the question for teachers.

Responsiveness is a frequently cited attribute of effective teachers at all levels of schooling. In the middle level literature, responsiveness to the developmental needs and characteristics of young adolescent students is emphasized (Nesin & Brazee, 2005; Stevenson, 2002). Breault (1999) called for “morally responsive” teaching practices that integrate moral reasoning processes throughout the curriculum. In addition, teachers are encouraged to practice “cultural responsiveness” (Gay, 2000) in consideration of the many facets of cultural diversity in the middle level classroom (Manning, 1993; Voltz, 1999).

When teachers respond to critical teachable moments like natural disasters or world conflict, they are practicing a kind of responsiveness that goes beyond the well established ideas of “developmental responsiveness,” “moral responsiveness,” and “cultural responsiveness” that focus more narrowly on the student and his or her immediate psychosocial and cultural milieu.

Borrowing a term from the business management literature (Bansal & Roth, 2000), such teachers can be considered “ecologically responsive.” The ecological metaphor is appropriate in the sense that it conceptualizes both curricular content and the life trajectories of students as inextricably connected to events and conditions in the wider social and natural worlds (Bronfenbrenner, 1977).

Ecologically responsive teachers bring to their planning a much needed global perspective, which is oriented toward broader social, political, and natural environmental contexts (Cruz, 1998; Erb, 2001), and they recognize that “significant problems or issues that connect the school curriculum with the larger world” are the organizing centers of an integrative curriculum (Beane, 1997, p. 2). When the terrorist attacks of September 2001 occurred, my role as an ecologically responsive middle school social studies teacher was very clear to me. I realized that the lives of my students—their entire ecosystems—would be shaped by those events and their subsequent repercussions, much as Cold War politics and the threat of nuclear war shaped the global
climate in which I was raised. My team and I believed we had a duty to address the questions, anxieties, misconceptions, and emergent understandings that our students brought to school. Similarly, as a teacher educator in September 2005, I watched coverage of Hurricane Katrina and realized that the consequences of this disaster would be widely felt, and the issues it raised would be contentious and enduring. When the middle school students of 2005 become participants in economic and civic life, the impact of Hurricane Katrina upon the environment and economy will still be felt along the Gulf Coast and throughout the nation. When they become voters in 2011 or 2013, issues of emergency readiness, government responsibility, and environmental stewardship will still have salience.

**Reflective Practices**

Reflection serves three key interactive functions in the generative curricular process. First, reflection serves a framing function as a teacher or team of teachers constructs a rationale for a unit. Teachers working in a generative mode must reflect upon a host of curricular and instructional considerations. These may include:

- State standards and various curriculum frameworks
- The developmental levels of students
- Student needs and interests
- School or community priorities
- Connections to broader societal and global concerns, or significant real-world problems
- Teaching for transfer in other areas of the curriculum or future instruction
- Personal values.

Through this reflective rationale-building process, teachers flesh out the essential questions, issues, and understandings that will provide the tentative frame for the unit. In response to Hurricane Katrina, middle level teacher candidates in my undergraduate course built units of instruction around such questions as (a) Should New Orleans be rebuilt? (b) Who or what is important in life? and (c) What is the role of government in response to natural disasters?

A second function of reflection in the generative curricular process is a filtering function. As Thornton (1994) asserted, a teacher is the “curricular-instructional gatekeeper” in the classroom. Ecologically responsive teachers take seriously their roles as gatekeepers, and they expertly and judiciously widen or narrow the curricular gates to their classrooms to create and facilitate meaningful learning experiences for their students. New information flooded the media hour by hour during the days and weeks that followed the terrorist attacks of September 11, 2001. As teachers working in a generative mode, my colleagues and I continually filtered new information in relation to the rationale for our unit, and we “reframed” as needed (Dewey, 1916, 1933; Schön, 1983, 1996).

During the aftermath of Hurricane Katrina in September 2005, students in my integrated curriculum course planned instructional units about the disaster in real-time as events unfolded. They alluded to the problem of “information overload” and “the overwhelming amount of information” that was available to them. As they were barraged with new information, they had to filter it through the lenses of their unit rationales and ask (a) Is it appropriate for middle level learners? (b) Does it have educational value? and (c) Does it fit within the framework of our instructional plan?

As one middle level teacher candidate in the course discussed the development of her Hurricane Katrina unit through the metaphor of a mosaic, the filtering function was apparent:

> We wanted to make our topic too broad and use too many pieces to make our picture complete. After handling the jagged edged ideas long enough … we realized that perhaps cutting was the best solution to our problem of narrowing the scope. (Crist, 2005)

Reflection serves a third function—a focusing function—as teachers contemplate how to incorporate new and existing materials and resources into the unit plan. For example, when attention turned to the threat of bio-terrorism in September 2001, the science teacher on my team focused her instruction on the sections in the life science text that dealt with germs and bacteria. However, rather than teaching the content as she normally would, she focused on those aspects that illuminated the issue of bio-terrorism.

Finally, it must be noted that the reflective dimension of a generative approach to curriculum development is not an afterthought or a sort of self-assessment that occurs after teaching a unit. Rather, it is an ongoing iterative process of questioning and contemplating praxis. One of the middle level candidates in my integrated curriculum course
alluded to the circularity of this process when she wrote, “We started with a few ideas, those changed, and changed again, and then we ended up going back to our original plan” (Lang, 2005). When operating in a generative mode, the journey is as important as the destination. While it is important for a team to know where they are going, it is equally important for them to know why they are taking a particular route (Lounsbury, 1992b).

Supporting a generative approach

A generative approach to developing curriculum in response to critical teachable moments begins with knowledgeable, creative, committed teachers who are reflective and ecologically responsive. However, the process also requires certain cultural, relational, and structural-organizational supports in order to thrive.

For teachers to effectively engage in generative curriculum development at the middle level, they must work within a school culture that values flexibility, creativity, collaboration, and innovation, and relationships among teachers and administrators must be grounded in trust.

Central to the middle school model are the relationships among teams of teachers working in concert to facilitate student learning and development. An interdisciplinary team provides the optimal framework for generative curriculum development. As one student in my curriculum course wrote:

I know from experience that the most important aspect of traveling is not what road you are taking or what kind of car you drive to get there, but who the people in the car are with you. These people can make the ride one of your best experiences or one of your worst experiences. In other words, teaming makes the difference in an integrated unit project. (Nanke, 2005)

Teachers need time and space to collaborate. My team and I planned some of our September 11 curriculum and instruction during our regular planning meetings, but much planning and reflection also occurred when we met informally in the common spaces and time we shared—in the teachers lounge, during lunch, in the hallways, and in our classrooms before and after school. In my university class, we treated some class sessions as “planning time” when teams could engage in collaborative planning. Also, before the project was due, groups presented their works-in-progress for constructive formative feedback.

It would be ideal if every middle school had high-functioning teams of teachers who plan together. Unfortunately, we know that this is not the case (Doda, 1992; Thompson, 2000). It is crucial to recognize the potential for individual teachers to act as agents of curricular and instructional change in their schools. As Thornton (1994) argued about curricular reform in social studies, “It would be far preferable to begin with teachers who wish to be involved and let other teachers judge from their examples” (p. 7).

Conclusion

One of the myths of interdisciplinary instruction is that “it is not designed to take advantage of ‘teachable moments’ or ‘spontaneous’ events” (Schurr & Lounsbury, 2001, p. 35). To the contrary, a decision to respond to a critical teachable moment can be the catalyst that sets a generative curricular process in motion. Integrative curriculum can be created through such a process when teachers practice ecological responsiveness and reflective practice within school settings that provide the necessary cultural, relational, and structural-organizational supports.

In April 2006, an editorial in the USA Today called attention to the educational opportunity presented by the national debate over immigration policy.

The demonstrations and debates about immigration … have provided what educators like to call “a teachable moment” in the nation’s schools. Unfortunately, some school administrators are applying the wrong lesson plan … Rather than ban flags, schools should be looking for ways to make the most of a rare public-policy issue that has ignited student interest and passions. The subject matter—immigration and free speech—is tailor-made for history classes, which too often do a poor job of educating students about American values. (Our view, 2006)

I wonder how many middle level teaching teams have seized this critical teachable moment to develop meaningful, integrative curriculum for their students.

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Our view: Principals clamp down on free speech. An opportunity is missed. (2006, April 11). USA Today, p. 11A.


Engaging Instruction to Captivate Students

Popular Music Helps Students Focus on Important Social Issues

This We Believe Characteristics

- Students and teachers engaged in active learning
- Curriculum that is relevant, challenging, integrative, and exploratory
- Multiple learning and teaching approaches that respond to their diversity

By James R. Moore

One of the biggest challenges facing middle school social studies educators is creating powerful lessons that engage young adolescents in acquiring knowledge, stimulate critical thinking skills, inspire passionate interest in social studies and social issues, encourage active participation in civic life, and provide them with opportunities to express their thoughts, values, and emotions (Bintz & Williams, 2005; Chapin, 2003; Slavin, Daniels, & Madden, 2005; Zevin, 2000). Middle school social studies educators must create lessons that are academically serious, yet provide students with varied activities that are enjoyable, intellectually challenging, developmentally appropriate, require active involvement, and incorporate other disciplines (Maxim, 2006).

Dewey (1933), when confronted with the task of balancing academic rigor with enjoyable activities, asserted, “Play degenerates into fooling and work into drudgery” (p. 286). By creating lessons that have a proper balance between hard work and pleasure, teachers can avoid Dewey’s two extremes and enhance student achievement and motivation by meeting their cognitive, emotional, and developmental needs (Chapin, 2003; Davis & Thompson, 2004; Maxim, 2006).

This educational challenge is exasperated by the fact that many students, having grown up in a high-tech world characterized by rapid-fire audio and visual images, consider social studies to be the least important of the four core subjects, with little relevance to their everyday lives and future interests and goals (Chapin, 2003; Maxim, 2006). Traditional teaching methods—lectures, worksheets, reading from the textbook and answering questions—are viewed as boring, irrelevant, and mind-numbing and a primary reason why middle school students do not like social studies (Bower, Lobdell, & Owens, 2005; Chapin, 2003; Martorella, Beal, & Bolick, 2005; VanSickle, 1996). Negative student attitudes are a logical consequence of reducing social studies to rote memorization and ignoring the controversy, passions, competing values, attitudes, and beliefs in human affairs. This is unfortunate, especially in light of the importance of social studies in producing American citizens capable of meaningful participation in a dynamic and pluralistic democracy. Therefore, it is important that teachers create activities that generate critical thought and passion in students and allow them to be actively involved in all of their educational experiences.

Listening to popular music from the 1960s motivates these girls to study important social issues of that era.

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One of the most effective, enjoyable, and interesting ways to teach social studies to young adolescents is to integrate lessons with music, art, and other disciplines in ways that engage students cognitively and emotionally (Ference & McDowell, 2005; Mertens & Flowers, 2003; Zevin, 2000). For example, using a musical video, such as Billy Joel’s *We Didn’t Start the Fire*, which chronicles major events and people in American history from 1949 until 1989, to teach controversial social and historical issues provides students with a rich learning experience that combines sensory, cognitive, and emotional experiences that can be mesmerizing and thought-provoking (see Figure 1 for complete lyrics). Given that established middle school practice includes team teaching, small learning communities, active student participation, and an integrated curriculum, teaching social studies through the arts is a viable way to counter the negative attitudes formed by traditional teaching methods and show students that their personal lives—individual experiences, problems, attitudes, and goals—are intimately connected to social studies. Since middle schools were designed to foster an interdisciplinary approach to education, integrating music, new technologies, student-centered activities, and the other disciplines into social studies is a suitable way to counter the apathy and boredom spawned by traditional teaching methods.

### Creative Teaching Methods Stimulate Student Interest and Achievement

Research demonstrates that innovative social studies instructional methods—a social issues approach (one that examines values, attitudes, beliefs, and both sides of controversial issues); small-group discussions; role-playing; mock trials; structured debates; simulations; cooperative learning; games; Internet applications (virtual field trips, telecollaboration, multimedia software, and access to all kinds of data); and the incorporation of art, literature, and music into the social studies curriculum—can enhance middle school student interest and academic performance (Bower, Lobdell, & Owens, 2005; Chapin, 2003; Martorella, Beal, & Bolick, 2005; Slavin, Daniels, & Madden, 2005; Sunal & Haas, 2005; Zevin, 2000). There is a wide variety of resources, such as videos, CD-ROMs, PowerPoint presentations, and DVDs that provide social studies teachers more opportunities to engage young students in exciting learning activities that incorporate multiple learning styles, new technologies, and their interests (Bower, Lobdell, & Owens, 2005; Chapin, 2003; Zevin, 2000).

These student-centered activities require active participation that allows the students to become personally involved in their learning; when students can express their knowledge, feelings, emotions, and values, they reap a host of educational and social benefits—increased motivation to succeed.

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**Figure 1**

*We Didn’t Start the Fire* by Billy Joel

| Harry Truman, Doris Day | Joseph Stalin, Malenkov |
| Red China, Johnny Ray | Nasser and Prokofiev |
| South Pacific, Walter Winchell, Joe DiMaggio | Rockefeller, Campanella, Communist Bloc |
| Joe McCarthy, Richard Nixon | Roy Cohn |
| Studebaker, Television | Juan Peron |
| North Korea, South Korea, Marilyn Monroe | Toscanini, Dacron |
| Rosenberg, H-bomb | Dien Bien Phu Falls, Rock Around the Clock |
| Sugar Ray, Panmunjom | Einstein, James Dean, |
| Brando, The King and I | Brooklyn’s got a winning team |
| And The Catcher In The Rye | Davy Crockett, Peter Pan |
| Eisenhower, Vaccine | Elvis Presley, Disneyland |
| England’s got a new queen | Bardot, Budapest |
| Marciano, Liberace, Santayana goodbye | Alabama, Khrushchev |
| We didn’t start the fire | Princess Grace |
| It was always burning since the world’s been turning | Peyton Place |
| We didn’t start the fire | Trouble in the Suez |
| No, we didn’t light it | We didn’t start the fire |
| But we tried to fight it | It was always burning, since the world’s been turning |
|                                           | We didn’t start the fire |

Complete lyrics and links to many of the topics mentioned are available at [www.teacheroz.com/fire.htm](http://www.teacheroz.com/fire.htm)
academically, the development of critical thinking skills, an appreciation for the connections between school and society, and the acquisition of citizenship skills—that prepare them to live in a multicultural society where free expression, dissent, persuasion, and compromise are central to the democratic process (Bower, Lobdell, & Owens, 2005; Chapin, 2003; Maxim, 2006; Zevin, 2000).

Furthermore, middle school students are capable of abstract reasoning and problem-solving if they are presented with creative instructional activities. Designing social studies lessons that revolve around controversial social issues will sharpen these reasoning skills and provide them with the intellectual tools to make informed moral decisions that are critical in a democratic society where debate, discussion, dissent, and compromise are crucial to success and political stability (Chapin, 2003; Zevin, 2000). For example, two powerful and controversial 1960s Vietnam War songs illustrated the sharp divisions in American society over the war; an examination of both songs would introduce students to multiple perspectives regarding this highly controversial event in American history. The Ballad of the Green Berets, by Vietnam veteran Barry Sadler, was a patriotic song that asserted that the war was a morally justified attempt to liberate Vietnam from communism. Conversely, Joe McDonald’s I-Feel-Like-I’m-Fixin’-to-Die-Rag was a strongly anti-war song (but not anti-soldier) that asserted Americans were dying for an unjust war spawned by elite desires for profits and hegemony (see Figures 2 & 3 for lyrics of both songs).

Obviously, these songs, while written in the 1960s, speak to contemporary American opinions concerning our war in Iraq and provide educators with opportunities to demonstrate the relevance of social studies to current events; help students draw connections between the past and the present; analyze opposing values, beliefs, and attitudes; view diversity and conflict as a part of life; and provide opportunities for students to create and evaluate solutions to these problems. It is quite possible that middle school students have family or friendship connections to people serving in Iraq; thus, studying history and current events are not merely academic exercises but learning opportunities that directly affect personal understanding of events.

The Power of Music to Enhance Motivation and Achievement

The teaching of social issues via popular music provides numerous opportunities for students to achieve multiple social studies goals: increased motivation and interest in social studies, accumulating knowledge, making links between the past and present, examining the nature of controversial issues from multiple perspectives, expressing—in socially acceptable ways—powerful emotions so evident during young adolescence, and developing defensible moral positions regarding important social issues (White, 2005). Music is a powerful teaching tool because it appeals to the mind, the body, and the emotions; music, like art and literature, is a primary means by which people express their innermost feelings, hopes, values, and experiences. Furthermore, music provides insights about different cultures and historical eras and allows students to analyze the historical or contemporary social forces that have shaped human history (Zevin, 2000). For example, students could examine the development of national anthems to foster national unity and support for military campaigns; this demonstrates the connections between the arts, propaganda, and patriotism and shows the interdisciplinary nature of social studies education.

Popular music has wide appeal to adolescents because it taps into the raw energies and issues that are so important during this difficult age. Songs that discuss individual identity; love; friendship; the frustrations and risk-taking associated with youth; the generation gap; and social issues such as war, racism, sexism, poverty, and the abuse of power are bound to strike a powerful chord in students as they navigate their way in a highly complex, and often hostile, world. For example, Lesley Gore’s 1963 hit You Don’t Own Me (Figure 4) examines a young woman’s attempts to fight sexism and choose her own path in life; when Gore sings about freedom and gender equality she strikes a chord that young women and girls can identify with as they develop their own identities and freely pursue their goals.

### Figure 2

**Ballad of the Green Berets by Barry Sadler and Robin Moore**

<table>
<thead>
<tr>
<th>Line</th>
<th>Lyrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fighting soldiers from the sky</td>
<td>Silver wings upon their chest</td>
</tr>
<tr>
<td>Fearless men who jump and die</td>
<td>These are men, America’s best</td>
</tr>
<tr>
<td>One hundred men we’ll test today</td>
<td>Back home a young wife waits</td>
</tr>
<tr>
<td>Silver wings upon their chest</td>
<td>Her Green Beret has met his fate</td>
</tr>
<tr>
<td>These are men, America’s best</td>
<td>He has died for those oppressed</td>
</tr>
<tr>
<td>But only three win the Green Beret</td>
<td>Leaving her this last request</td>
</tr>
<tr>
<td>Trained to live, off nature’s land</td>
<td>Put silver wings on my son’s chest</td>
</tr>
<tr>
<td>Trained in combat, hand to hand</td>
<td>Make him one of America’s best</td>
</tr>
<tr>
<td>Men who fight by night and day</td>
<td>He’ll be a man they’ll test one day</td>
</tr>
<tr>
<td>Courage deep, from the Green Beret</td>
<td>Have him win the Green Beret</td>
</tr>
</tbody>
</table>

I-Feel-Like-I'm-Fixin-to-Die-Rag by Joe McDonald

Yeah, come on all of you, big strong men,
Uncle Sam needs your help again.
He's got himself in a terrible jam
Way down yonder in Vietnam.
So put down your books and pick up a gun,
We're gonna have a whole lotta fun.
And it's one, two, three,
What are we fighting for?
Don't ask me, I don't give a damn,
Next stop is Vietnam;
And it's five, six, seven,
Open up the pearly gates,
Well there ain't no time to wonder why,
Whoopee! we're all gonna die.
Well, come on generals, let's move fast;
Your big chance has come at last.
Gotta go out and get those reds —
The only good commie is the one who's dead.
And you know that peace can only be won
When we've blown 'em all to kingdom come.

Available from www.ufheart.com/protest/index1.html

This song provides an excellent introduction into the study of feminism (it was released in 1963, the same year as Betty Friedan's classic *The Feminine Mystique*), challenges students to examine their attitudes and beliefs regarding gender, allows for cross-cultural comparisons (such as Latin American or Middle Eastern cultures), and can stimulate class discussions.

The power of music is universal; all age groups can identify with particular musical genres that reflect the social and political conditions in society at that time. Most of these musical genres offer examples of social commentary and can be used to teach history and the social sciences. The wide variety of musical genres—jazz, opera, folk, rhythm and blues, country, rock and roll, and hip-hop—reflect different origins and the unique experiences of their founders and practitioners; yet they deal with universal themes, such as love, loss, emotional pain, injustice, war, and the harshness of life, that are relevant to all people (White, 2005).

Music, like art, philosophy, and literature, must be understood within the confines of the national culture or microculture that produced it; this fact supports the assertion that social studies education must incorporate multiple perspectives into its curriculum (Koza, 1996). The humanities have long been in the service of reflecting and challenging the status quo; their commitment to social issues—war, race, gender, and social class—and its commitment to challenging the status quo. There have been many songs that have dealt with issues directly related to the lives of young adolescents; songs about sex, gender equality, drugs, war, violence, peer pressure, family problems, poverty, and discrimination. By listening to these songs and analyzing the lyrics in light of current or historical social conditions, students can engage in a number of intellectual pursuits. They can (a) learn to critically examine important social issues, (b) establish cause and effect relationships, (c) appreciate the contradictions and complexities inherent in all social issues, (d) apply social studies concepts to analyze and propose solutions to these issues, and (e) develop defensible, if not debatable, moral positions that will allow them to effectively

You Don't Own Me by John Madara and David White

You don't own me
I'm not just one of your little toys
You don't own me
Don't say I can't go with other boys
And don't tell me what to do
And don't tell me what to say
And when I go out with you
Don't put me on display
You don't own me
Don't try to change me in anyway
You don't own me
Don't lie me down, cause I'll never stay
I don't tell you what to say
I don't tell you what to do
So just let me be myself
That's all I ask of you
I'm young, (I'm young) and I love to be young
I'm free, (so free) and I love to be free
To live my life the way that I want
To say and do whatever I please

participate as informed and thoughtful citizens. An example of teaching social issues through music will demonstrate the numerous educational possibilities.

**Classroom Applications: Teaching About Racism via Popular Music**

While America is characterized by a host of social issues, it is educationally sound to choose issues that are directly related to the lives of many middle school students and that correspond with national or state standards in social studies education. In fact, teaching social studies and current events using popular music directly addresses the 10 major themes articulated in the *Curriculum Standards for the Social Studies: Expectations of Excellence* (National Council for the Social Studies, 1994). These standards are based on the traditional social sciences, history, and because social studies is an interdisciplinary field, are linked to the humanities and natural sciences (see Figure 5 for a partial list of these standards).

For example, there are many songs that illustrate the plight of oppressed groups and their persistent demand that America fulfill its constitutional mandate to eliminate racial discrimination and provide equality and liberty for all individuals. The gospel song *We Shall Overcome*, a powerful song depicting the valiant struggles of African Americans to achieve equal rights in a segregated and racially hostile America, was the definitive anthem during the 1950s and 1960s civil rights movement because it reflected the indomitable will of human beings to fight against all forms of oppression and discrimination (see Figure 6 for the lyrics). This song directly addresses performance expectations for the following NCSS themes: Culture; Time, Continuity, and Change; Individual Development and Identity; Individuals, Groups, and Institutions; and Power, Authority, and Governance.

Racism, long the “Achilles’ heel” in America’s experiment with democracy, remains one of the most important social issues in the 21st century (Banks, 2006; Gollnick & Chinn, 2006). In fact, racism is closely associated with imperialism, religious discrimination, and ethnic hostilities. This explains why so many songs, as well as other artistic forms, deal with racial issues; songs such as Three Dog Night’s *Black and White*, Eminem’s *White America*, B. B. King’s *Why I Sing the Blues*, and Paul Revere and the Raiders’ *Indian Reservation* all examine various aspects of racism, violence, segregation, and imperialism. These issues, while controversial, are a part of history and educators should expose students to the negative and positive aspects of the events that have shaped American and world history.

Teaching middle school students about prejudice, discrimination, and the treatment of minority groups throughout American history is very important and provides educators opportunities to change attitudes and beliefs about racial, ethnic, and religious groups—a prerequisite for changing behaviors. Middle school is the time when many young adolescents—struggling to develop an identity and their place in the world—fully encounter racism and discrimination in their environments. It is educationally sound to help students develop positive attitudes and beliefs—ones

Figure 5
**National Council for the Social Studies, Expectations of Excellence: Selected Middle School Curriculum Standards**

| I. Culture (anthropology and sociology). | C. Explain and give examples of how language, literature, the arts, architecture, other artifacts, traditions, beliefs, values, and behaviors contribute to the development and transmission of culture. |
| II. Time, Continuity, and Change (history). | D. Identify and use processes important to reconstructing and reinterpreting the past, such as using a variety of sources, providing, validating, and weighing evidence for claims, checking credibility of sources, and searching for causality. |
| IV. Individual Development and Identity (psychology and social psychology). | C. Describe the ways family, gender, ethnicity, nationality, and institutional affiliations contribute to personal identity. |
| V. Individuals, Groups, and Institutions (sociology and political science). | A. Demonstrate an understanding of concepts such as role, status, and social class in describing the interactions of individuals and social groups. |
| VI. Power, Authority, and Governance (political science/law). | D. Identify and analyze examples of tensions between expressions of individuality and group or institutional efforts to promote social conformity. |
| VIII. Science, Technology, and Society (interdisciplinary). | C. Describe examples in which values, beliefs, and attitudes have been influenced by new scientific and technological knowledge, such as the invention of the printing press, conceptions of the universe, applications of atomic energy, and genetic discoveries. |

that are compatible with American laws and ideals regarding liberty, equality, and social justice—about all cultural groups before stereotypes become ingrained in their thought processes (Walker, 2005). The arts—particularly music that appeals to human passions—are powerful teaching tools because they are material expressions of the human spirit that is central to the cognitive and affective development of middle school students.

There are many songs about racism and discrimination that educators could use in the middle school. Of course, caution must be used to ensure that the songs are appropriate for middle school students regarding language and content. One very powerful song about racial prejudice and discrimination—a song that includes important implications regarding the role families, peer groups, and institutions play in perpetuating racial intolerance—is *Society’s Child* (1967, available from www.sfheart.com/protest/index1.html) by Janis Ian. The lyrics reveal the intense pain a white student experiences because she is not allowed to date an African American male:

Come to my door, baby  
Face is clean and shining black as the night  
My mother went to answer you know  
That you looked so fine  
Now, I could understand  
Your tears and your shame  
She called you “boy” instead of your name  
When she wouldn’t let you inside  
When she turned and said  
But honey, he’s not our kind  
She says, I can’t see you any more, baby  
Can’t see you anymore  
Walk me down to school, baby  
Everybody’s acting deaf and blind

The lyrics reveal the intense pain a white student experiences because she is not allowed to date an African American male:

Until they turn and say  
Why don’t you stick to your own kind  
My teachers all laugh  
Their smirking stares  
Cutting deep down in our affairs  
Preachers of equality  
Think they believe it  
Then why won’t they just let us be

They say, I can’t see you anymore, baby  
Can’t see you anymore  
One of these days I’m gonna stop my listening  
Gonna raise my head up high  
One of these days  
I’m gonna raise up my glistening wings and fly  
But that day will have to wait for a while  
Baby I’m only society’s child  
When we’re older things may change  
But for now this is the way they must remain

I say, I can’t see you anymore, baby  
Can’t see you anymore  
No, I don’t want to see you anymore, baby

Suggested teaching procedures for this song might include using it as an “advanced organizer” to generate interest in racism and discrimination. It could also be incorporated into a larger unit plan on civil rights, slavery, segregation, or contemporary race relations in the United States. Using *Society’s Child* to teach students about racism, social norms, and conflicts between individuals and society directly addresses several of the National Council for the Social Studies’ curriculum standards. For example, one of the performance expectations under “Individuals, Groups, and Institutions” is to “identify and analyze examples of tensions between expressions of individuality and group or institutional efforts to promote social conformity.” This song—about a white girl’s love for an African American...
American boy in a racist society—provides an excellent example of the tensions between individual desires and the pressure from families and society to conform to accepted social norms and laws (see Figure 5 for the NCSS curriculum standards). Additional ideas for using this song include these:

1. Lay a foundation for discussing discrimination in history and how the arts are often used to reflect social, economic, and political conditions. A handout with appropriate vocabulary terms—prejudice, discrimination, ethnocentrism, racism, segregation, and stereotypes—will help facilitate an interesting discussion and provide students with background information.

2. Distribute the lyrics to the students and have them orally read the lyrics. Ask them to analyze the meaning of the lyrics, helping them understand the use of metaphors and symbols by the artist. This is a critically important skill for young adolescents; the ability to decode the messages in music can be transferred to poetry, literature, and other forms of writing. This activity can be done in small groups, and then a whole-class discussion could follow focusing on the group findings.

3. Play the song (e.g., via computer, CD player, iPod) and ask students to listen for the main idea(s) of the song. Also, ask them to identify the messages and emotions the artist is attempting to convey to the listeners.

4. Have the students reread the lyrics and conduct a class discussion with the questions in Figure 7. You could prepare a music analysis sheet with the questions, place them on an overhead projector, or display them in a PowerPoint presentation.

5. Bring closure to the activity by highlighting the key points and ask students if they have any questions or comments. It is quite possible some students (or their family members or friends) have had a similar experience. This may be true with any social issue—drug use, divorce, poverty, and child abuse. Discussion of these topics must be handled with professionalism and sensitivity.

### Alternative Teaching Suggestions with Music

There are many other possible teaching suggestions integrating music into social studies and other academic disciplines. For example, if you are teaching a science or social studies class, you could select the 1969 hit *In The Year 2525* to demonstrate how changes in science and technology have profound effects on human thought, morality, politics, social institutions, the economy, and the environment. Indeed, the song asserts that our conception of what it means to be human will be drastically altered by genetic engineering, medical advances, and the development of new technologies. This song, with its powerful and disturbing lyrics, could generate an excellent class discussion centered on the relationships between science, religion, and human civilizations. Moreover, teachers could assign essay papers, class debates, and research projects based on the song’s major themes; the interdisciplinary nature of the song would allow team teaching (science and social studies) and cooperative learning.

You could assign students to choose their own songs related to social issues. This can be very effective because they have control and take responsibility for their learning. The ability to choose their own social issue and song will be a powerful motivator. Inevitably, they will choose something they are passionate about, and this could generate a love for social studies and active civic engagement.

### Figure 7

**Questions to Provoke Student Thinking**

**About the Lyrics of Society’s Child**

- a. Can you explain the most important message in the song? Do you agree or disagree with the artist? Why or why not?
- b. What is the artist’s point of view regarding racial discrimination? (good listeners will note the sadness and regret in the artist’s voice)
- c. How does the song reflect social conditions in 1967? (you may have to provide some background information, i.e., handouts, pictures, or a short video are effective ways to impart this information)
- d. Can you identify two important social studies concepts or generalizations? (this answer could include prejudice, stereotypes, the hypocrisy between American ideals and actual behaviors, judging events within their historical context, individuals are a product of their environment, and many other possibilities)
- e. Why are attitudes about race difficult to change?
- f. How did the laws reflect these racist attitudes? (Jim Crow laws that mandated segregation, miscegenation laws forbidding interracial marriages until 1967)
- g. How has racial discrimination hurt the United States? (morally, economically, politically, and culturally)
- h. How have things changed since 1967? What accounts for those changes?

All of these questions—designed to stimulate thought—offer many possibilities for creating new lesson plans, creative homework, class and group assignments, and explorations of related themes, such as the civil rights movement, slavery, anti-Semitism, and gender discrimination.
involvement with an eye toward making a difference in society. Many students may decide to select a song by someone who is a member of their ethnic, racial, or religious group; this will help validate the cultural experiences of all students and expose students to music from other cultures (Koza, 1996). In the latter case, if students played and analyzed their songs for the entire class, they would learn that multiculturalism is an important theme in all disciplines, and music reflects social realities, such as class, race, ideology, and gender. This activity could be part of a larger assignment that would involve gathering and analyzing data, reading numerous sources, and writing a reflective essay. Students could create an audiovisual presentation in accordance with specific guidelines from the teacher. They would learn to ask important questions, research the origins of social issues, recognize injustices in society, develop a moral position, and propose viable solutions to the problem; all of these activities involve higher order thinking skills such as analysis, synthesis, and evaluation.

Surfing the Internet will offer a wide variety of songs from different genres and eras that would be appropriate for history, government, economics, religion, and sociology. However, music, like all forms of expression, can advocate many different, and highly controversial, positions. There are songs that advocate drug use, violence, sexual promiscuity, and contempt for all forms of authority. While many students may listen to these songs at home, they may not be appropriate for middle school educational activities. The issues and songs listed in Figure 8 are some examples that teachers could use in their classes to impart knowledge, stimulate critical thought, propose viable solutions, and promote democratic ideals. This list reflects the diversity of the United States and includes Native American, Latino, African American, and female artists along with the work of Anglo males.

Conclusions

Many important social issues are directly related to the lives of middle school students. These young adolescents are at a very important developmental stage in their lives; they are developing a personal identity replete with attitudes, beliefs, and values that will affect their academic performance in high school and beyond. Therefore, middle school educators must find creative ways to teach social studies to maximize student achievement, stimulate critical thought, engage their passions and interests, and produce competent citizens capable of participation in a democratic society. Teaching social studies through the arts—music, art, and literature—is a highly effective method with students. Music provides students with important insights into the specific political, economic, and social conditions in a given historical era. By playing music or showing a music video, teachers can provide students with a vast array of images, sounds, symbols, and actions to analyze and discuss in ways that appeal to the intellectual, social, and emotional needs of young adolescents. Furthermore, there are numerous resources and materials, including the rapidly increasing number of educational Web sites, which offer teachers exciting ideas to teach social studies. By combining serious academic work with pleasurable and intellectually challenging activities, teachers can improve student achievement and motivation, create involved citizens who demonstrate a passion for social studies, and make a positive difference in students' lives; music can be an excellent antidote to adolescent apathy regarding social studies and other subjects.

References


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<table>
<thead>
<tr>
<th>Social Issue</th>
<th>Song</th>
<th>Artist</th>
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<tbody>
<tr>
<td>Native-Americans/</td>
<td>American Holocaust</td>
<td>Georgie Jessup</td>
</tr>
<tr>
<td>genocide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child sex abuse</td>
<td>Luka</td>
<td>Suzanne Vega</td>
</tr>
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<td>Race and colonialism</td>
<td>War</td>
<td>Bob Marley</td>
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<td>Racism</td>
<td>Black and White</td>
<td>Three Dog Night</td>
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<td>Patriotism/disillusion</td>
<td>America</td>
<td>Santana</td>
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<td>Where Is the Love</td>
<td>Black Eyed Peas</td>
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<td>Violence/war</td>
<td>What's Going On</td>
<td>Marvin Gaye</td>
</tr>
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<td>Drug abuse</td>
<td>Kicks</td>
<td>Paul Revere/Raiders</td>
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<td>Gender inequality</td>
<td>You Don't Own Me</td>
<td>Lesley Gore</td>
</tr>
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<td>Political assassinations</td>
<td>Abraham, Martin, and</td>
<td>Dion</td>
</tr>
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<td></td>
<td>John</td>
<td></td>
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<td>2525</td>
<td>Zager and Evans</td>
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<td>Major historical events</td>
<td>We Didn't Start the Fire</td>
<td>Billy Joel</td>
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<tr>
<td>War and politics</td>
<td>Sky Pilot</td>
<td>The Animals</td>
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Students as Scientists: Synthesizing Standards-Based with Student-Appropriate Instruction

This We Believe Characteristics

- Students and teachers engaged in active learning
- Curriculum that is relevant, challenging, integrative, and exploratory
- Multiple learning and teaching approaches that respond to their diversity

By Molly Lawrence

S

standards, standards, standards! There was virtually not a moment in the day in which standards were not part of my thinking about middle school science teaching. Whether a reminder from my administrator that standards should be the basis of my planning or the frequent professional development sessions in which our district analyzed student performance on specific standards and generated a plan to help students who did not meet proficiency, I was continually working under the auspices of the mandatory state curriculum.

Due to this constant emphasis, three questions regularly bombarded my thinking, causing an uncomfortable tension. First, I wondered whether I was facilitating the type of learning that corresponded to the developmental characteristics of my middle school science students. Second, was I effectively teaching all of the standards, in turn, preparing my students for the standardized tests at the end of year? And, finally, how could I simultaneously design instruction that matched student characteristics and needs while effectively addressing all of the standards? This last question is the real crux of the matter because I wholeheartedly believe in developmentally appropriate instruction for my students in the classroom, but I also realize my job depends on their ability to learn the standards and demonstrate this knowledge on standardized tests.

As a result of these questions, I began reflecting on my teaching to resolve this tension. My purpose in sharing my ideas and experiences with a wider audience is to help other teachers facing this same, overwhelming conflict of interests to address this seeming dichotomy in their classrooms, resulting in happy students who are prepared to demonstrate their proficiency on standardized tests. To accomplish this goal, I highlight the developmental characteristics of young adolescents, explain why it is critical to align instruction with these characteristics, and summarize some general strategies that align with these characteristics (see Engaging Instruction to Captivate Students).
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Who Are Young Adolescents?
Young adolescents possess a variety of characteristics that distinguish them from elementary children and from older adolescents (Jackson & Davis, 2000; National Association of Secondary School Principals [NASSP], 1993; National Middle School Association, 2003). Some of these characteristics include:

- An inability to sit quietly for long periods of time, accompanied by short attention spans and varied activity levels that alternate between being tired and highly energetic (NASSP, 1993).
- A search for their own identity (Van Hoose & Strahan, 1988), leading to a heightened awareness of their place in relation to the world around them (Bowers, 1995). Students try to figure out who they are, what they believe and value, and what they want to accomplish.
- A dramatic change in self-concept. Often students possess a low self-concept at this stage of development. As a result, they try to figure out how they are valuable and in what ways they are capable of succeeding (Van Hoose & Strahan, 1988).
- An increased desire for autonomy and independence (Eccles & Midgley, 1989), leading to fluctuations between acting like adults and acting like children (Van Hoose & Strahan, 1988).
- A focus on comparing themselves to others. Often students believe that if they are different from others they are inadequate (Bowers, 1995).
- A formative ability to reason abstractly (Van Hoose & Strahan, 1988).

Although this list of characteristics is certainly not exhaustive, it includes many of the characteristics that significantly affect our interactions with students in the classroom. How well we address these characteristics during instruction and in our classrooms has serious implications for the success of our schools and the teachers in them (Eccles & Midgley, 1989).

Why Should We Align Instruction with the Characteristics of Middle School Students?
So what happens if, in light of the standards movement, we temporarily design instruction so that it covers the state-mandated standards but fails to take the characteristics of middle school students into account? I often faced this dilemma in my own classroom. I found myself thinking, “I really need to get through this information because we are behind on our scope and sequence. Today’s lesson will just have to be more teacher-centered; students need to get this information quickly so that we can catch up.” Unfortunately, nearly every time I approached teaching in this manner, I left school realizing I had wasted my time. Students had not responded well to the barrage of abstract vocabulary and concepts; we almost always revisited the information the following day with a different, more developmentally appropriate approach.

Researchers have noticed similar trends when observing interactions between middle school students and teachers. Often, middle schools are a “poor fit for the developmental stage of early adolescence” (Beane & Brodhagen, 2001, p. 1160), or their curricula fail to consider the characteristics of young adolescents and what they need (Hurd, 2000). Furthermore, the greater the incongruity between students’ developmental characteristics and what we do in schools, the less motivated they will be, the lower self-esteem they will possess, and the less successful we will be as educators (Beane & Brodhagen, 2001). Based on these findings, it is imperative that we do not lose sight of the characteristics of middle school students when designing instruction, no matter how much emphasis is placed on standards and standardized tests. But how can we do this while ensuring that we are living up to the accountability standards that are constantly looming overhead? To answer this question, we need to examine those instructional strategies that are well aligned with the characteristics of our students.

How Can We Meet the Needs of Middle School Students in the Classroom?
Figure 1 summarizes various instructional approaches and their benefits that align with the developmental characteristics of middle school students. As a middle school teacher, I remember spending considerable time trying to create lessons...
Figure 1
The Benefits of Instructional Approaches that Align with the Characteristics of Middle School Students

<table>
<thead>
<tr>
<th>Instructional Approaches</th>
<th>Benefits to Middle School Students</th>
<th>Characteristics of Middle School Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Activity Levels 1</td>
</tr>
<tr>
<td>Active Learning (hands-on, minds-on, learning in which students construct their own knowledge) (Bowers, 1995; Davies, 1995)</td>
<td>Encourages students to selectively incorporate personal experiences into the new knowledge they construct, helping them develop ideas about who they are and how they learn</td>
<td>X</td>
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<tr>
<td></td>
<td>Provides increased opportunities for students to think about what they know and why</td>
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<td></td>
<td>Prompts students to make choices and decisions about their learning</td>
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<td></td>
<td>Caters to a wide variety of attention spans and activity levels</td>
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<td></td>
<td>Gives students opportunities to accomplish something meaningful because their input is a valuable part of the learning process</td>
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<tr>
<td></td>
<td>Places value on individual ideas, rather than just the teacher’s ideas</td>
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<tr>
<td>Variety (Students use multiple resources, produce varied products, and work in an assortment of groups) (Brazee, 1997; Davies, 1995)</td>
<td>Provides opportunities for students with different strengths to excel in different contexts and to express themselves creatively</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Promotes a variety of activity levels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allows students to determine what their own talents are and further develop them while improving their weaknesses</td>
<td></td>
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<tr>
<td></td>
<td>Encourages students to apply information in a variety of contexts and to synthesize a diversity of resources and ideas</td>
<td></td>
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<tr>
<td>Relevant Learning (Students discuss values and decision making and content is connected to students’ lives and the world) (Davies, 1995)</td>
<td>Encourages students to define what they believe, make a decision based on their beliefs and on evidence, and justify why they support this decision</td>
<td>X</td>
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<tr>
<td></td>
<td>Supports the notion that different ideas are acceptable and that individuals possess different opinions</td>
<td></td>
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<tr>
<td></td>
<td>Encourages application of the content beyond the scope of the classroom; students can pose and/or enact solutions in an authentic context</td>
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<tr>
<td>Cooperative Learning (Students have a variety of opportunities to interact with peers while learning.) (Jackson &amp; Davis, 2000; National Middle School Association, 2003)</td>
<td>Allows opportunities for students to figure out who they are and how to interact with others</td>
<td></td>
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<tr>
<td></td>
<td>Encourages students to stay actively involved in learning since their participation is vital to the success of the group</td>
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<td>Provides opportunities for students to make decisions about learning and about behavior</td>
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<td>Allows students to interact while learning</td>
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<tr>
<td></td>
<td>Promotes discussions among students about reasons for their ideas, which idea makes the most sense, and why</td>
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1 Range of activity levels, varying attention spans; difficulty sitting still (NASSP, 1993)
2 In search of identity; trying to define who they are, what they believe and value, and what they want to accomplish (Van Hoose & Strahan, 1988)
3 Dramatic changes in self-concept; try to view self as valuable and able (Van Hoose & Strahan)
4 Desire independence; moving from parental control to self-control (Eccles & Midgley, 1989)
5 Compare themselves to others; believe being different equals inadequacy (Bowers, 1995)
6 Formative ability to reason abstractly (Van Hoose & Strahan)
that were responsive to the developmental needs of my sixth and eighth grade students. Many teachers do the same. However, the importance of covering the content and teaching all of the standards was always looming in the back of my mind. Why did it seem so challenging to address both of these factors? In thinking about it further, I have come to realize there are certain aspects of our state-mandated standards that result in teachers feeling they are being asked to perform a juggling act.

Some Frustrations with a Standardized Curriculum

Although individuals and organizations in charge of creating the mandated state curricula most certainly work hard to construct a set of standards that balances the demands of local communities, state agendas, and suggestions from professional organizations (e.g., National Science Foundation, American Association for the Advancement of Science, and the National Research Council), the developmental characteristics of young adolescents never seem to lie at the heart of the standards that are produced (Hurd, 2000). As a result of the gap between the science content in the standards and the developmental characteristics of my students, I always felt a degree of frustration when told that I must teach all of the concepts incorporated in the curriculum and that I would be held accountable for my students’ performance on tests that aligned with these standards, even though I had no role in creating the standards or the tests. In my mind, the standards were frustrating for a variety of reasons, including the following:

- Especially under the former Georgia standards (the Quality Core Curriculum), the breadth of content was excruciating, making it extremely difficult to explore information in depth or do something meaningful with the information, since there was always another standard looming on the horizon.
- The topics included in the standards were not based on the innate interests of middle school students. Although I realize that a certain percentage of learning will likely require students to explore topics that are not inherently interesting, I also wholeheartedly agree with Renzulli’s (1982) notion that student interests should drive learning if at all possible, because this will often lead to the creation of more authentic products and the development of students’ individual interests, in turn, leading to a love for lifelong learning.
- The topics in the standards were far removed from issues that naturally linked to the characteristics of development during early adolescence. I distinctly remember the exhaustive list of vocabulary related to rocks, minerals, weather, and other topics that do not as naturally link to young adolescents’ developmental interests, but focus more on preparing future scientists for the rigorous high school and upcoming college curricula.

How Can We Meet Young Adolescents’ Learning Needs in the Science Classroom While Addressing All of the Required Content in the Curriculum?

Despite the negative aspects of our state standards highlighted in the previous section, I still believe educators can bridge the seeming gap between how our students learn and what they “have to know.” How do we accomplish this? Surprisingly, based on my own experiences, the answer is incredibly simple: Design instruction in such a way that students are encouraged to act like scientists. How does this approach align with the characteristics of middle school students while emphasizing the necessary content? The following examples from my own middle school science classroom will address this question.

Mineral identification activity

One of the topics my middle school earth science students were required to understand, according to the state standards, was how scientists distinguish among different types of minerals. Quite honestly, during my first few years of teaching, this was one of the sections I struggled to make appropriate for my students; this was evident in their less than energetic response to the notes we took on how minerals are identified and the corresponding labs in which they got to practice some of these methods. How could I redesign my instruction in a developmentally suitable manner without losing sight of the standard? How could I give students an experience that would allow them to construct knowledge? How could I allow for more authentic peer interactions? Finally, how could I promote higher order thinking rather than recall or skill
practice? I decided to give them a chance to act like scientists. I began thinking about what scientists would do if they had a variety of minerals they needed to identify and to break down this process into activities young adolescents could relate to. It became clear that the scientists would come up with a method for distinguishing these minerals. This was something my students could do.

I gave them a tray of 10 to 12 different minerals, a steel file, a glass plate, a penny, and a porcelain plate. They were then given 10 to 15 minutes to come up with a variety of ways to tell the minerals in their tray apart. Although they were allowed to use the implements they had received, they were not required to do so. Additionally, they were not instructed on how these tools could be used. Small student groups came up with a variety of ways to differentiate the minerals: using a fingernail, penny, and steel file to see whether or not it could scratch a mineral, scratching the mineral against the glass plate to see which minerals left a mark, dropping the minerals and determining how the sounds differed, looking at the shine of the mineral, identifying the color of the mineral, looking at the color of the mineral’s powder left on the porcelain plate, and many others. After their initial exploration, students were given a few additional minutes to select one of their methods to share with the class; they were to justify why they thought this was a valuable way to differentiate among minerals and to respond to questions from their peers about the method. Audience members were asked to describe each method on their paper as it was presented and to list one strength and weakness that corresponded to each of the methods. Once all groups had shared their discoveries, we were able to generate a master list of ways to identify minerals and compare it to those ways suggested in the book. Afterwards, students had a chance to practice a few of the methods, such as streak, luster, and hardness, which were heavily emphasized in the standards, in a more structured format. By doing this, I could be certain those methods that were most likely to show up on the standardized tests were mastered by all.

In what ways does this strategy respond to the developmental needs of middle school students while aligning itself well with the standards? To begin, students are actively engaged in their own learning. Instead of being told how to identify minerals, they devise a variety of ways to accomplish this task, which allows them to explore the information within the context of a hands-on experience. Additionally, students work with peer groups and have opportunities to share ideas, test them, modify them, make choices about which ideas to try, and figure out how to work well with others; this increases the relevance, makes learning active, and promotes the development of student identities. Furthermore, students evaluate the methods they design to determine the strengths and weaknesses of each approach, promoting abstract thinking. Finally, a wide variety of students can succeed in this activity; students can physically try their ideas (bodily-kinesthetic), present information to others (interpersonal), and justify their ideas to others (logical). A variety of middle school students’ learning characteristics were at the forefront of this activity. However, the standards were also a driving force in the instruction, making this activity a good example of balancing student needs and the required standards.

Continental Drift—How do you explain the evidence?

Just like the identification of minerals, continental drift is a topic that could easily be presented in the form of a lecture; students could quickly take notes on evidence scientists have found in support of continental drift and recall the information on a traditional test at the end of the unit. However, this approach will not facilitate learning that matches the developmental characteristics of my students; my students’ lack of enthusiasm has made this obvious in the past. As tempting as it was to justify a more lecture-oriented approach, because it seemed an efficient way to expose students to the information they needed to “know” for the criterion referenced test at the end of the year, as I watched my students’ eyes glaze over and witnessed them quickly forgetting the information from their notes, I realized there must be a better, more appropriate way to teach this.

So, I rethought how I could facilitate students’ learning about continental drift. At first, this seemed to be a challenging task, but as in the last example, I
began to consider how scientists had generated this idea and how I could break this process down into learning activities. Once I began to think about my students acting as scientists, it became clear that they needed to examine and analyze evidence as scientists would. I created a data sheet with information on a variety of fossil specimens that have been found around the world. Students plotted these fossils on a world map and began describing anomalies they observed in their distribution. It seemed strange to them that tropical fern fossils were located in the extreme latitudes and that identical fossils were found on the adjacent shores of continents hundreds of miles apart. Students were then asked to explain why they believed these fossils were arranged in such an unexpected manner. These ideas were shared with the class, and they were then asked to arrange the continents in a way that more closely aligned with the fossil evidence. After students rearranged their continents, we discussed whether or not it seemed plausible that the continents were formerly in a different location. Students on both sides of the issue could relate to members of the scientific community at the time when Wegener (1924) theorized that the continents had moved over time; those who believed continental drift might have occurred were challenged by those who did not believe this could have happened. Students on both sides were able to understand why it was so important to figure out what caused the continents to move, as this was not something scientists could explain at the time.

As in the previous example, this activity has many components that make it appropriate for the middle school learner while also corresponding well to the standards. To begin, students were asked to generate ideas and explanations in response to the evidence that existed. In other words, they were asked to start with concrete evidence and come up with a plausible explanation for this evidence, encouraging the development of their ability to reason abstractly. They also evaluated the validity of their own and others’ ideas and discussed shortcomings in these explanations; this promotes metacognition, which is an example of abstract thinking. Furthermore, students analyzed data and drew inferences based on data, which is a more authentic science experience than listening to me recount the information to the class. In turn, this experience was somewhat relevant to students because it encouraged decision making and provided an opportunity for them to interact with their peers and take part in a learning experience. All of these components distinguish it from my more traditional, initial approach; students were actively involved in constructing their own knowledge and responded well to the developmentally appropriate approach. Again, the content addressed throughout this activity was clearly aligned with the standards and was presented in a way that made me confident in my students’ ability to demonstrate their proficiency on standardized exams.

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I carefully question students and facilitate the learning process to make certain their ideas take all the evidence into account; after all, I will be held accountable for their success on the standardized tests.

**Moon phase modeling activity**

Being able to visualize and explain why the moon goes through phases is a difficult concept for many middle school students. Allowing my students to act as scientists when learning this content has been particularly rewarding and has demonstrated the benefits of aligning instruction with the characteristics of middle school students. How can this content be taught so that it promotes students’ acting in roles played by scientists?

To begin, students keep a moon journal for a month prior to our lesson on the phases of the moon. They diagram what the moon looks like in the sky, when they saw it, where it was in the sky, and other associated details. Additionally, they record questions they have as they observe. Upon completion, the class compiles the data so that students can begin analyzing it to answer specific questions including: Is the moon out for the same length of time each night? How long does it take the moon to go through one complete cycle? Does the moon rise and set at the same time every night? After working through these questions with each other, students then model the phases of the moon with a partner in the classroom. Students pretend they are the Earth while holding a styrofoam ball in front of an overhead projector. As they rotate counterclockwise, they darken the part of the moon on their paper that they cannot see and answer questions that require them to return to the model, rather than the teacher or the book, to discover what is actually happening. Questions often arise
throughout the lesson as students wonder if some of the patterns they observe can be explained using the model. This has been particularly successful in the past when students interact with peers and grapple with their ideas together.

This activity also exemplifies a learning experience that is focused on the standards and aligned with the characteristics of middle school students. To begin, it is an example of active learning: Students work to make sense of the evidence in the model and construct their own knowledge of why the moon has phases. Throughout, I carefully question them and facilitate the learning process to make certain their ideas take all of the evidence into account; after all, I will ultimately be held accountable for their success on the standardized test at the end of the year.

Additionally, students experience variety within the lesson. They collect their own data, analyze others’ data, work with a three-dimensional model of the sun, Earth, and moon, produce two-dimensional diagrams of the model, and answer content-rich questions that encourage them to return to the model. Cooperative learning is also promoted. As students struggle to make sense of what is happening and try to put what they see into words, they can discuss their ideas with others, question others’ ideas, and ask their group members to explain why they believe things happen in a particular way, while learning to interact productively with peers. Learning is also relevant throughout the course of this lesson. Students begin by observing the moon for a month and generate questions based on these observations. Thus, the content is, to some extent, connected to the lives and world of the students. By providing learning experiences, rather than filling students with knowledge, content naturally becomes more relevant, since students have to learn how to interact with the experience, what to make of the experience, and can ask questions that drive their future learning based on this experience. Like the previous activities, this strategy exemplifies a standards-based, developmentally appropriate approach for a middle school science classroom.

**Summary of the benefits**
The examples listed above depict how thinking about our students observing, experimenting, and analyzing much as scientists do can help ease the pressures of the state-mandated standards versus student needs dilemma when designing instruction. How does this help us deal with the state-mandated standards? First, when we plan with the “students acting as scientists” focus, we initially refer to the content standards for a description of what students need to know and then design an opportunity for students to explore this content and leave with an understanding of the key concepts. We can feel confident that we are catering to the standards since, from my experience, students retain information they learn throughout these activities longer than information taught more traditionally. When taking a standardized test, they can think back to an experience they had in class or back to the evidence they explored, helping them remember or reconstruct long lost facts or concepts. Thus, the standards are at the heart of this type of planning and teaching.

But what of student characteristics? By using this outlook as a basis for planning instruction, we will more often teach in a manner that aligns well with the characteristics of middle school students. For example, because students engage in learning activities patterned after what scientists do and are expected to critically analyze information and data to arrive at a conclusion, thinking about how students can act as scientists promotes active involvement during the learning process. Second, this approach emphasizes the importance of a variety of ideas, skills, and strengths: Students will naturally notice different aspects of the evidence, will generate different solutions to the problems, and will add unique traits to the dynamics of their group of scientists. Additionally, each scientific problem is bound to be quite different than the next, promoting varied strategies in the classroom. Third, when students act as scientists, they consistently have opportunities to interact with peers and professionals much like most adults do in the workplace. Finally, by employing this approach, learning becomes more relevant because learning becomes a process in which students experience information. They are encouraged to make decisions about what they think and they are able, in the future, to refer back to the learning experience when explaining new, related phenomena or recalling previous principles that they might not be able to rationalize. Furthermore, this learning is relevant because it promotes the development of skills that can be applied in a variety of contexts outside of the classroom. Although the content is important, the ability to make sense of new content during these interactions is even more important. Thus, students gain skills as lifelong learners.
Promoting the “students acting as scientists” approach in non-science classes

So what if you are not a science teacher, but you still want to design instruction that aligns with the characteristics of your students while preparing them for standardized tests? The same line of thinking can be applied in a more general sense. When planning for instruction you can begin by considering what you can have students do that promotes the construction of knowledge and minds-on learning. Additionally, you can think about incorporating a variety of resources, learning activities, groups, and product choices to help students tap into their strengths and develop skills in areas of weakness. Furthermore, students can be given the opportunity to interact with peers while learning. And, finally, students can be given the chance to make decisions and think about information in a more relevant context. Although these strategies are certainly not the only way to meet students’ needs while fulfilling the required standards, they are a starting point that can help us offset the smothering emphasis on standards to the detriment of student developmental needs.

Concluding Thoughts

Although in an ideal world curricula would be designed in response to the developmental needs of learners, this may not be the reality of your current situation. States have a variety of standards. Teachers are increasingly being held accountable for student performance on tests that are intended to align with these standards. And, as a result, student learning capacities often get lost in the shuffle. Fortunately, professional educators can deliver developmentally appropriate instruction within the context of the state mandated curriculum. Designing learning opportunities in which students get to act as scientists encourages them to actively participate in a variety of learning experiences, interact with their peers while learning, and make decisions about relevant topics that are applicable to the world in which they live. All of these facets of the learning environment are naturally aligned with the characteristics of middle school students and, as a result, promote increased motivation and more meaningful learning (Beane & Brodhagen, 2001). By implementing such an approach in our classrooms, we may be better able to keep students’ characteristics and needs at the forefront of our thinking, no matter how busy or standards-based our year becomes. Thus, we can feel confident in our capacity to perform a much-needed balancing act: one that does not lose sight of the characteristics of the middle school student no matter what standards states impose.

References


Engaging Instruction to Captivate Students

Using Literature Circles with English Language Learners at the Middle Level

This We Believe Characteristics

- An inviting, supportive, and safe environment
- Students and teachers engaged in active learning
- Curriculum that is relevant, challenging, integrative, and exploratory
- Multiple learning and teaching approaches that respond to their diversity

By Pamela J. Farris, Pamela A. Nelson, & Susan L’Allier

Students gather in small groups of three and four to discuss their literature selections as the teacher floats around the room, stopping from time to time to listen to the conversation and other times serving to facilitate the discussion leader’s efforts. Sticky notes are prevalent as students jot down ideas, quotes, and questions, pasting them on their clipboards to take back to their desks. Now starting day three of their literature circle assignment, they have been reading two chapters a day and completing their assigned role jobs as part of combined language arts and social studies class requirements.

Yusaf is teamed with his buddies José, Saddat, and Zeke. Wandering off task is easy for this group, as they are also players on the middle school’s soccer team and often share stories and jokes. Being grouped together has not always been easy. Two weeks ago, Yusaf flew into a rage upon discovering José’s father’s name was Israel Lopez. Yusaf could not conceive that his best friend’s father could bear a name that he had been taught to hate growing up in his Palestinian family. Conversely, José could not understand why Yusaf was spewing hateful remarks about his father when he had not even met him.

Cultural clashes often occur in diverse classroom settings. Fortunately, in this instance a calm, understanding teacher interceded and arranged for Yusaf to spend some time with Jose and his dad during the last period of the school day. It did not hurt that as a young man, Mr. Lopez had been a soccer player with fairly nimble feet, so sports yielded a common ground for conversation. The hurt, shock, and dismay spread over a few days time eventually evaporated.

English language learners use multisensory learning strategies.

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Nearby, four girls huddle together, hastily scribbling notes for later reference. Kimmie is relatively new to the United States and has no idea about its history—only that it is a place for “oppoortoity” (opportunity) according to her Chinese parents. Angelina is trying hard to fit in, crossing borders to meet the demands of her Hispanic background and family and those of the American culture. Ramona, too, tries to balance her native culture (Romanian) with her new American one. Unlike Kimmie, Ramona, and Angelina, Maria balks at trying to learn American ways. She refuses to stand for the morning pledge to the flag. At lunch she seeks out the food kiosk with tacos, even though she complains they do not taste like those prepared by her mother and “abulela” (grandmother). Ever so patiently the teacher has nudged Maria to try to view things openly, yet she knows Maria yearns to return to Mexico and live with her grandparents.

Balancing literacy instruction with cultural attributes makes for an interesting teaching assignment for teachers of English Language Learners (ELLs). Scenes like the above happen in schools throughout the country as students try to straddle cultural borders at school. Literature circles can help students better understand each other’s culture when appropriate multicultural books and historical novels are selected.

Since 1991, the enrollment of Limited English Proficient (LEP) students in United States schools has increased by 105%, while the total school enrollment has increased only 12%. Of the total LEP enrollment, 67% are in the elementary grades (National Clearing House for English Language Acquisition, 2002), soon to be entering middle school. During the past two decades, immigrants have been largely from Latin American, Arabic, and Asian countries, with increasing numbers of children from Russia and the Ukraine. Not since the late 1880s and 1920s have we seen such changes in the composition of our classrooms.

**Literature Circles**

The focus of literature circles is to combine literacy skills and strategies in a supportive social atmosphere of a non-threatening peer group (Daniels, 2002). Learning to engage in meaningful discussions, make compromising stances, and work cooperatively are all essential elemental skills students should develop as part of the literature circle experience. Students engage in reading aloud, independent and shared reading, as well as oral discussion and writing based on one selection of literature. Students are encouraged to make connections: text-to-self, text-to-text, and text-to-world. Higher level thinking evolves, as students challenge their peers and themselves with questions about the text, its plot, theme, and characterization.

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Too few directions and too little modeling by the classroom teacher often leave ELL students bewildered.

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Raphael and Hiebert (1996) pointed out that literature discussions where students can state their opinions and insights about the book in a community of readers who are interested in discovering, permit the students to develop greater understanding and compassion for others, as they examine differences and commonalities viewed from the perspectives of their peers. Minority students generally gain confidence in speaking before groups and stating their opinions as a result of engaging in conversations about books they are reading (Raphael & Members of the Book Club, 1999). Shy or reluctant students, or those who lack proficiency in English can develop literacy skills through learning the various roles offered in literature circles as they share, discuss, and interpret the various pieces of literature (Martinez, 2000).

The very nature of literature circles provides opportunities for ELL students to practice and refine their language and literacy skills as they analyze, reflect upon, and negotiate the views and ideas of their peers and those presented by the authors they are reading (Martinez-Roldan & Lopez-Robertson, 1999/2000; Samway & Whang, 1996).

**Modifying Roles of Literature Circle Members**

Typically, three to eight students read the same piece of historical fiction for a combined language arts/social studies integrated assignment, with four being the ideal group size for working with ELLs. The literature circle roles are those outlined for social studies instruction by Farris (2004, pp. 270–271) as follows:

*Discussion Leader:* Monitors other group members and gives assistance with tasks when needed. Leads the discussion when the group meets together. This
requires that the teacher select the ELL student who is dependable and willing to take on a leadership role for the initial literature circle group meetings. Extremely reserved or shy students often feel unduly pressured in this role until they have some experience under their belts.

**Historian:** Traces the major historical events of the chapter. Often ELLs are lacking in knowledge of their own culture’s history as well as that of the United States or world history. The teacher can assist by giving a time line of historical events of the period (e.g., the Revolutionary War or Civil War) or by providing a resource book on the period such as Stephen Ambrose’s (2000) *The Good Fight*, a picture book overview of World War II.

**Geographer/Cartographer:** Draws a map related to the setting of the book and depicts journeys of the main character. Students with an artistic bent or who like geography are well suited for this task in the initial go round.

**Word Warrior:** Keeps a list of unusual or unfamiliar words from the book and writes down the sentences in which they were used and their definitions. ELLs can easily get bogged down with this task. It is best to limit the number of words to no more than five or six per chapter; otherwise, the student may not be able to complete the reading of the book and the accompanying task in a reasonable time period.

**Phrase Keeper:** Jots down interesting phrases from each chapter, noting the page number for each. This task can be a superb means of generating discussion in the group.

**Character Analyst:** Compares and contrasts the main characters of the book; yet another task that opens the discussion door for students, hence, the selection of literature with strong, appealing characters is critical.

### Introducing Literature Circles

All students need teacher modeling if literature circles are to work effectively. This is especially true for ELL students, as they need more structure to complete tasks efficiently. Too few directions and too little modeling by the classroom teacher often leave ELL students bewildered. Handing them a sheet of paper and telling them to follow the directions on it simply does not suffice. The teacher needs to carefully demonstrate what needs to take place. This modeling should not be rushed.

The most efficient means of modeling literature circles is for the teacher to find a one- or two-page article, possibly from *Time for Kids, Cobblestone,* or *National Geographic.* Each student is given a copy of the selection to follow along. The teacher then reads aloud a portion of the piece while demonstrating the literature circle role to be accomplished. For instance, the first few paragraphs may demonstrate comparing and contrasting characters. The next section of the text may have new vocabulary words. It is best to have introduced two roles each day to lessen student confusion.

After all the roles have been shared during the week with students given another short text selection for guided practice in performing the roles, the teacher demonstrates how to be a good discussion leader. This includes how to get organized, preparing good questions in advance, and having a checklist to make certain all tasks are accomplished successfully.

### Initiating Literature Circles

A quality picture book offers an exceptional opportunity to present all roles in a relatively short period of time to ensure that the students understand not only their respective roles but the need to communicate with other members of their group. *The Pot That Juan Built* (2002) by Nancy Andrews-Goebel provides a superb text, not too long but with sufficient content that piques student interest that the teacher can share as a read aloud with the entire class. In the prose of a cumulative tale, Andrews-Goebel tells the story of Juan Quezada’s discovery of how potters in his native Mexican village of Mata Ortiz centuries ago created their unique pottery. Juan’s determination to bring back the traditional style helped to provide the natives of Mata Ortiz with a stable economy, as museums, galleries, and patrons of the arts throughout the world seek out the beautiful pottery made in this tiny Mexican village.

After reading the prose on a page, the teacher then reads aloud the accompanying explanatory notes, thus providing both narrative and informational text for the students to consider in their literature circles. New vocabulary is listed on the overhead along with the sentence in which it is used and page number and with the students serving as word reporters copying the information down and creating a definition of the word. Upon completion of the entire book, the teacher presents three questions that the discussion leaders use to stimulate debate and share information.
1. Why did Juan take such an interest in how pottery was made hundreds of years ago?

2. What are the critical steps in making the pottery?

3. Juan is famous for his work throughout the world. He could live anywhere he desires, yet he stays in the small Mexican village of Mata Ortiz. What kind of person is Juan? Why does he not leave and enjoy the riches that accompany a famous artist like famous athletes or musicians do?

The literature circle groups are given 10 minutes to discuss these questions. The class reconvenes to examine the different responses shared by each group. The next day, the students engage in their respective tasks. Each group has access to a copy of the book for reference. The groups then do a follow-up activity—making pottery in art, sharing Mexican artwork or murals, developing a readers’ theatre and presenting it, and so on.

The teacher is now ready to present read alouds of the various book choices. Read alouds have been found to foster engagement and learning in social studies at the middle school level (Albright, 2002). The teacher should read the first chapter of the historical fiction novel and select the portion he wishes to read aloud before sharing it with the students. Using different voices for the various characters, setting the tone of the book, using appropriate intonation, and speaking loudly, yet not reading too rapidly are also important tips. Stopping and encouraging students to respond to the reading and share what they are thinking by querying, “What do you think about this?” will spark some discussion, and most likely, interest in the books you are promoting for literature circles (Albright & Ariail, 2005).

**Suggested Literature**

Since diverse populations are together in the classroom, sometimes books from different cultures lend themselves to sharing. In particular, it is efficient to combine a picture book from one culture with that of another culture. Students can read the picture book and discuss it as both an icebreaker to initiate their literature circle group as well as to discuss commonalities and differences among cultures. One possibility is pottery as a common cultural element. *The Pot that Juan Built* by Nancy Andrews-Goebel with pictures by David Diaz is a combination prose/biography of Juan Quezada, the premier potter in Mexico. On the left-hand page is the prose.

This is the pot that Juan built.

These are the flames so sizzling hot

That flickered and flared and fired the pot.

The beautiful pot that Juan built.

The right-hand side offers the historical background of Juan Quezada’s life—how he uses ancient methods and natural materials in making pottery in Mata Ortiz, Mexico. *The Pot that Juan Built* couples nicely with *A Single Shard* by Linda Park (2001), the

**Figure 1**

**Children’s and Young Adult Literature**

<table>
<thead>
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<tr>
<td>Other cultures</td>
<td>Ellis, Deborah. (2000). <em>Breadwinner</em>. Toronto, Canada: Groundwood Books. (Novel-Afghanistan)</td>
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Extension Projects

Figure 2

<table>
<thead>
<tr>
<th>Extension Activity</th>
<th>Description</th>
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<tbody>
<tr>
<td>Alphabet Book</td>
<td>The students create an alphabet book based on the characters, key events, historical information, geographical locations, and so on from the book.</td>
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<tr>
<td>Accordion Book</td>
<td>Each student in the group creates one scene that they believe is significant in the sequence of the storyline.</td>
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<tr>
<td>Character Bookmark</td>
<td>Each student creates a bookmark representing an important character from the book.</td>
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<tr>
<td>Jackdaw</td>
<td>Using a shoe box, collect artifacts and label them as they relate to the story.</td>
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<tr>
<td>Newspaper</td>
<td>Create a newspaper with events of the period and some of the major events of the book.</td>
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<tr>
<td>PowerPoint Presentation</td>
<td>Since most middle school students take a computer technology course, the students can download illustrations or pictures from the period and write an historical overview that is read to accompany the pictures.</td>
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<tr>
<td>Reader’s Theatre</td>
<td>Students take significant passages and transform them into a reader’s theatre.</td>
</tr>
<tr>
<td>Reenacting Major Scenes from the Book</td>
<td>Students may select one to three scenes and dress up in simple costumes and reenact in a short drama.</td>
</tr>
<tr>
<td>Timeline</td>
<td>Each student takes a section of the book and creates a timeline for that portion of the story. The entire timeline gives the major events of the story along with the historical backdrop of the period.</td>
</tr>
</tbody>
</table>

Newbery Award winning story about a 12-year-old orphan boy who becomes an apprentice to a master potter who makes fine celadon ware. The boy travels on a dangerous journey to the king’s court to show the potter’s work.

Figure 1 presents a list of suggested literature circle books including picture books for read alouds by the teacher or group as well as novels. In selecting books, keep in mind gender issues as male students who are reluctant readers may balk completely if the book choices have female protagonists and vice versa with female students.

Extension Activities

At the conclusion of the literature circle, having the students engage in an extension project helps students to continue their discussions about the book and gain more meaning. With historical fiction, students can search out information in the library or via the Internet and gain additional understanding from a historical viewpoint. Often, the other social sciences (economics, sociology, geography) are enhanced for the student through such inquiry. Figure 2 displays a list of some possible extension projects for historical novels.

The sharing of these extension activities should celebrate the groups’ work. Effort and the final products should be duly noted, as students share and rejoice in their group’s completion of the roles and their extension project. This is also a learning time for the peer groups who view only the extension activities. Groups can be limited to 10 minutes for their presentations.

Conclusion

Teachers who elect to incorporate literature circles as part of their literacy and social studies instruction of ELLs find that the time to structure the assignment, model the roles, and have the students engage in the actual literature circles is beneficial in literacy growth and acquisition of social studies knowledge by their students. Careful selection of literature as well as formation of the groups are critical aspects for successful implementation of literature circles with ELLs.

References


If we consider numerous reports in the popular news media (e.g., Allen, 2001) and government initiatives for sustainable living around the world, future life on Earth is indeed problematic. Humans continue to exhaust the world’s resources to varying degrees. Raven (2002) estimated that about 20% of humans consume more than 80% of the total resources consumed each year. In addition to this disparity in consumption between the have and have nots, the overall level of consumption may be contributing to global warming, the greenhouse effect, loss of the Earth’s protective ozone layer, loss of biodiversity due to the destruction of tropical rainforests, depletion of the world’s fisheries through over-fishing, acid rain, toxic pollution, and genetic and hormonal damage from exposure to dioxin and related chemicals (Oskamp, 2000; Sterling, 1999).

Sustainable living is high on the international agenda (e.g., Department of Fisheries and Oceans [Canada], 2001; Secretary of State for Environment, Food and Rural Affairs, 2005), emphasized by the 2002 United Nations 10-day summit in Johannesburg, South Africa. According to the Department of the Environment and Heritage (2004), Australia spent more than 1.4 billion dollars on sustainable living over the past decade. Huckle (1999) argued that education for sustainability “is a process of critical reflection and action on those forms of technology and social organization that might allow us to live sustainably with one another and the rest of nature” (p. 38). In short, an activity can continue if it is sustainable (International Union for the Conservation of Nature and Natural Resources/United Nations Environment Programme/World Wildlife Fund, 1991). Science Education for Sustainable Living (SESL) implies educating people through scientific evidence toward justifiably potential solutions for sustaining life (e.g., see Summers, Corney, & Childs, 2003). In a school context, SESL may require students to understand current environmental issues, and this involves investigating and understanding scientific concepts surrounding such issues. By understanding these concepts, which include why things happen and...
how things work, students can further investigate issues and propose justifiable solutions for sustaining life—not just human life, but all life.

There are numerous local efforts toward innovative sustainability in Australia (Ginsberg & Frame, 2004). The need for sustainable living is also reflected in the various action groups with specific projects such as “The Race to Sustainability,” which aims to encourage communities to achieve sustainability (Sutton, 2004). Education communities are employing strategies to facilitate awareness and understanding of sustainable living issues. Armstrong and Grant (2004) highlighted Australian Gould League programs such as Waste Wise Schools projects that promote understanding of sustainable living. Another example is the Brower Youth Awards (2003), which is open to young “environmental activists” ages 13 to 22, which has presented awards for a university environmental centre, a paper recycling project, and a ban on excessive idling of school buses, and a program for organic food systems. The awards highlight role models for students to show what can be achieved by young people in sustainable living projects. These awards emphasize that teachers incorporate real-world problem solving with science lessons focused on sustainable living (Santone, 2004).

Similar to other places around the world, (e.g., Kelly, Sirr, & Ratcliffe, 2004), Australian schools are becoming more active in Science Education for Sustainable Living (SESL) with a focus on energy efficiency, recycling, and enhancing biodiversity in the community, as frequently reported by the Australian Journal of Environmental Education. Various resources have been supplied to assist teachers in educating students on sustainable living issues (e.g., Grant & Littlejohn, 2001). Further practical SESL activities and concepts have included solar-powered cars, visits to Internet sites displaying alternative technologies, weather monitoring and pollution-measuring equipment, monitoring energy efficiency at home and at school, and participation in “Clean Up Australia Day” (Nelson, 2002).

Even though the speed of progress to sustainability may depend on political motivation and social will (Hart, 2002; Sutton, 2004), SESL can empower middle school students (e.g., Summers, Corney, & Childs, 2003) through understanding of key scientific concepts around sustainable living issues that may filter through to improved community awareness, leading to informed action. And, indeed, “If education is critical, then teacher education is even more critical” (Åhlberg, 2004, p.1). SESL must commence at the preservice teacher level in order to influence future teaching practices on sustainable living in schools. Even though many educators are experimenting with models to connect...
theory and practice in this field (e.g., Åhlberg, Åänismaa, & Dillon, 2005; Armstrong & Grant, 2004; Buchan, 2004; Davis & Webber, 2004), sustainable living is “a new area of the curriculum with virtually no exemplification of how it might actually be taught” (Summers, Corney, & Childs, 2003, p. 327). The following learning experiences describe a process middle school students used to investigate scientific concepts associated with sustainable living.

Description of teaching and learning experiences
Fourteen second-year preservice teachers from Queensland University of Technology worked in pairs to devise and facilitate middle school science lessons to enhance students’ concepts for sustainable living. A four-step sequence was used to teach the following topics associated with sustainable living. Year 6 and 7 middle school students and preservice teachers were required to (a) identify the issue, (b) explore associated concepts, (c) record and articulate understandings, and (d) brainstorm realistic solutions or future projects. Topics for investigation were previously discussed within the preservice teachers’ university tutorials. These topics included sustaining frog habitats, sustaining life on Mars, chemical effects on water, renewable energy (hydroelectricity), using natural materials to produce an energy source, guarding against natural disasters, and the role friction plays on using resources (e.g., car tires). The first two topics are used as examples for demonstrating this four-step sequence (Figures 1 & 2).

After three tutorial sessions discussing sustainable living, identifying sustainable living issues, and facilitating an understanding of the above four-step lesson sequence, the preservice teachers devised SESL lesson plans. These plans were peer reviewed and constructive comments were provided. After two iterations of these plans, the preservice teachers implemented their lessons with small groups of two to five Year 6 and 7 students. In devising plans for the four-step sequence, preservice teachers selected core learning outcomes from the Life and Living strand of the Queensland state syllabus (Queensland School Council Curriculum [QSCC], 1999, 2000). The lessons in Figures 1 and 2 were related to these standards:

- 3.1 Students draw conclusions about the relationship between features of living things and the environments in which they live.
- 3.5 Students establish a model environment which meets the needs of living things within it.

Preservice teachers provided lesson plans (Figures 1 & 2) and were involved in university discussions for planning, implementation, assessment, and evaluation of these SESL lessons. Critical self-reflections were provided by the preservice teachers after they had implemented the SESL lesson. In addition, observations of middle school students involvement and preservice teachers’ implementation of two lessons aided in understanding how the four-step sequence worked in practice.

Discussion and Conclusion
More meaningful environmental education needs to involve middle school students identifying sustainable living issues and then exploring associated scientific concepts. SESL requires students to be “actively involved in creating models and processes that can be used to bridge the gap between the real world and the classroom” (Herremans & Reid, 2002, p. 16). This exploration may occur in a number of ways including individual and group work, searching the Internet for existing solution proposals, and devising experiments to understand the related concepts through hands-on experiences. Part of working scientifically involves recording data in meaningful and explanatory ways, but scientific concepts need to be articulated and discussed to consolidate understandings about sustainable living. Students’ brainstorming possible solutions aids in considering the multiple perspectives surrounding such issues to provide a way toward the future.

Scientific concepts are associated with issues on rainforest devastation leading to an increase in endangered species, depletion of oil supplies as humans struggle to fully harness and use new sources of energy such as solar power, and global warming resulting in apparent changes of the Earth’s conditions. Students can act on a local level (Ginsberg & Frame, 2004; Grant & Littlejohn, 2001; Sutton, 2004). However, to provide middle school students with sufficient explanatory power, educational strategies need to be employed that develop the understanding of scientific concepts related to specific issues of concern. From this knowledge base, middle school students may be able
Figure 2
Sustaining Life on Mars

<table>
<thead>
<tr>
<th>Step 1. Identify the issue</th>
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<tr>
<td>How can human life be sustained on Mars? (also a relationship to sustaining life on Earth)</td>
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<tr>
<th>Step 2. Explore associated concepts</th>
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<tr>
<td>Mission to Mars: Students were asked to be astronauts and plan a mission to Mars. They had to decide what to take to sustain life on their journey and on Mars. A model of a spaceship was created as a stimulus for engaging the students. The preservice teachers facilitated discussion on the necessity of water, oxygen, and the sun for maintaining life, and water cycles and the inter-relatedness of these cycles. They wanted students to explore the basic elements necessary to sustain human life, for which the students were most interested in investigating the cycle of water, the importance of conservation, and how individuals can make a difference whilst searching for alternative methods to sustain life. By providing materials, the preservice teachers aided the students’ construction of a terrarium to develop an understanding of the water cycle. The constructed terrarium was left in the sun for 20 minutes.</td>
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<tr>
<th>Step 3. Record and articulate understandings</th>
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<tr>
<td>Students drew and labeled a picture of their terrarium, indicating key elements (e.g., soil, plant, water, sun). They observed and discussed what happened to their terrarium after exposure to the sun. Students then sketched their version of the water cycle based on their observation of the terrarium, which also aided in assessing the students’ understanding of key concepts and catering for the different learning styles. Fact sheets about Mars were provided to students towards the end of the activity as a prompt for further discussion on sustainable living.</td>
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<tr>
<th>Step 4. Brainstorm realistic solutions and/or future projects</th>
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<td>Through further questioning, these preservice teachers helped students to brainstorm future projects, which included investigating other threats to the environment (e.g., pollution, acid rain, drought, global warming). They listed some connections between Earth’s environment and space exploration for sustainable living.</td>
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Reflection on “Sustaining Life on Mars”

The preservice teachers agreed that certain aspects worked well for teaching sustainable living. Inspiring students with imagination (Mission to Mars and model of a spaceship) and hands-on experiences (making of a terrarium) motivated them to explore the topic. For example, one preservice teacher stated, “The Mission to Mars idea tweaked their interest and gave the discussion about oxygen and water a purpose, which was enhanced by the spaceship prop.” The other claimed, “Students were able to see the result of the terrarium left in the sun and were able to explain to us in their own words the cycle taking place.”

The first preservice teacher added:

The terrarium was a really BIG hit with both groups of students. While the kids initially had a limited idea of the water cycle as far as evaporation, condensation, and precipitation goes, after questioning at the end of the lesson it appeared they learned a lot more about the water cycle than at the beginning of the lesson. These preservice teachers also suggested ways to improve their pedagogical practices. One suggested, “It may have been beneficial to ask students to draw a picture explaining the water cycle prior to the activity in order to extrapolate their existing knowledge and give them an opportunity to make any necessary adjustments or improvements to their pictures after their observations of the terrarium.” They also claimed the link to sustainable living could be strengthened to allow for deeper discussion on threats for survival (e.g., lack of water and oxygen). Finally, the preservice teachers proposed a more effective line of questioning to elicit the links between the activity of making a terrarium and sustainable living. This line of questioning also aimed at drawing upon higher-order thinking questions from Bloom’s Taxonomy (i.e., analysis, synthesis, and evaluation questions).

Middle school students are well positioned for learning to become socially and scientifically active (e.g., Arambula-Greenfield & Gohn, 2004), if they are placed in a frame of mind for sustainable living (Bonnett, 2002), and SESL is an important part of the solution (Luke, 2001; Santone, 2004). These students are at formative stages for learning how to express opinions that rely upon substantive arguments. SESL must commence at the preservice teacher level, particularly, as it is a way to assist the next generation to prepare substantive arguments for their best possible future (Santone, 2004). To become more persuasive on sustainable living, these arguments must be based on scientific evidence, and preservice teachers need to explore ways for facilitating this education. To be more effective in this preparation, educators need to challenge pedagogical practices to develop critical thought that “enable[s] students to (re)construct their own views of sustainability and to take actions they deem appropriate” (Le Grange, 2002, p. 54). Greater student interactivity in SESL can also advance understanding of promoting and creating a sustainable existence by centering debates on scientific evidence.

The consequences of excessive human activity are well documented (e.g., Oskamp, 2000) and, as consumerism skyrockets with more resources being used by more people (Simon-Brown, 2000), our planet is being propelled into crises. Societies need to be proactive in seeking solutions to sustain life on Earth. Hence, middle school student involvement in SESL is critical and preservice teacher education becomes pivotal to learning. Their future will depend on acquiring valid knowledge as middle school students grapple with addressing issues and consequences of today’s events; hence, developing stronger voices based on reputable scientific arguments may assist their very survival and the survival of our planet.

Editor’s Note
Some Australian spellings and usages have been changed to standard American English.
References


MESSAGE FROM THE PRESIDENT

The NMSA Board of Trustees held its winter board meeting January 19–21, 2007, in Columbus, Ohio. Newly elected trustees and officers were welcomed and all board members received and discussed the report of the NMSA Vision Task Force. Task force members included Patti Kinney (chair), Mike Dietz, Ed Vittardi, Linda Robinson, Linda Hopping, Charles Palmer, Betty Edwards, Ken McEwin, Sue Swaim, Jeff Ward, and Bruce Bailey. We are appreciative of their year-long work focusing on future directions and needs of NMSA. Throughout deliberations the members kept returning to the uniqueness of NMSA as an open membership organization solely focused on the education and well-being of young adolescents and reaffirmed the importance of the members of the association directly electing the trustees and officers. Key among its recommendations was an updated version of the NMSA constitution to be placed on the 2007 ballot for adoption by the membership.

When NMSA was founded in 1973, it was a small association run by a small group of volunteers dedicated to young adolescents and the middle school movement. The constitution at that time matched their concerns, issues, and needs. However, over the past 33 years middle level practices and the middle school concept have advanced. NMSA now has a professional staff of 34 employees, a network of 58 affiliate organizations, and an 18-member board of trustees elected to set the direction and policies of NMSA. Today, with more than 31,000 members and 58 affiliate organizations in America and around the world, NMSA is providing an ever-increasing array of publications, professional development, and advocacy work that advances quality education for young adolescents and those who serve them. It is important that our constitution reflect who we are today and our plans for the future. The Board of Trustees believes the recommended constitutional changes will allow them to develop appropriate policy and operational procedures without continually returning to the membership to amend the constitution. At the same time, the constitution continues to clearly represent the purposes of our association and affirm its commitment to and ownership by its members.

As an example, the revised constitution will allow NMSA to address matters such as elections of officers and trustees via electronic voting, without requiring additional amendments to the constitution. In fact, last year when electronic voting became a possibility for our Ohio-based organization, we discovered we would need to have a constitutional vote to change eight different areas in our current constitution to recognize both written ballot and electronic ballot voting as official election methods for our association. As the task force, with the help of legal counsel, reviewed the total constitution, it became clear to them it was time to streamline our original constitution and move many of the operational procedures to policy. After thorough discussion by the board, they concurred with this recommendation and moved to ask members to ratify an updated constitution in the next election.

As your president, I encourage you to vote when you receive the 2007 NMSA election ballot in the mail. Vote for the candidates of your choice to serve on the board, and vote to ratify the new constitution for NMSA.

Sincerely yours,

Mike Dietz
NMSA President

Call For Artwork

We are featuring original student artwork in the online publication “Expressions from the Middle” and on the poster that is sent to more than 34,000 people worldwide. Students whose artwork is selected will receive a cash prize PLUS international recognition!

Entries Due: April 2, 2007
Visit www.nmsa.org/moya for details.
MIDDLE LEVEL PROMISE AND PRACTICE WORKSHOP
April 20–21, 2007
Ellensburg, WA

Featured topics include:
Classroom Management | Differentiated Instruction | Formative Assessment

There’s still time to register. The workshop will be held on the campus of Central Washington University. Visit NMSA’s Web site (www.nmsa.org) to find out more details and to register for this important event.

NMSA REWIND

• February 5–6, more than 450 educators gathered in St. Louis for the 2007 Middle Level Essentials Conference. Planning for this conference was facilitated by NMSA and the local planning committee from the Missouri Middle School Association, including Executive Director Jane Haskell, Paul Simpkins, Dennis Rohlfing, Bob Stewart, Dorothy Turner, and Sharonica Hardin. The strands for this event were Learning Communities, Literacy Across the Content Areas, and Closing the Achievement Gap. Next year’s event will be held April 4–5 in Minneapolis, MN.

• NMSA’s Higher Education Symposium, an event held every two years, occurred February 9–10 in Destin, FL. Professors of education specializing in middle level teacher preparation came together to network and learn from one another. Dorie Combs, Douglas Hatch, Jeanneine Jones, David Kommer, Ken McEwin, and John Swaim, all members of NMSA’s Professional Preparation Advisory Board, worked with NMSA headquarters staff in the planning and facilitating of this conference.

• NMSA’s Board of Trustees held its winter board meeting in Columbus, OH, January 19–22. Newly elected board members joined their colleagues at their first meeting. The board spent professional development time discussing strategic growth issues, as outlined in a national report for non-profit organizations from ASAE. They also received the Vision Task Force Report and Recommendations. Among the task force’s recommendations were to place a revised constitution on the 2007 ballot; develop a multi-year process to consider a name change for the association that would include input from all stakeholders; consider re-examining the affiliate partnership as a means of strengthening both the organizational structure and NMSA relationship with affiliates; and, consider creating a code of ethics for board members and others representing the organization at various times. Santo Pino, chair of the executive director’s search committee, shared a progress report with the board and announced interviews will occur in March, with candidate recommendations being brought to the board at its April meeting.

• On February 17, Sue Swaim and Al Summers represented NMSA at the National Conference of State Legislatures Financial Education Summit in Denver, CO. They presented a session entitled “Investing in Successful Middle Schools.” The presentation included information about the specific needs of young adolescents and middle level educators and was based on Success in the Middle, NMSA’s policymaker’s guidebook.
The field of education, like the world in general, is in a rapid state of technological change (Friedman, 2005; Gee, 2003; New London Group, 2000; O’Brien & Bauer, 2005). Today's middle school students typically enter school with paper, pencils, books, and some computer knowledge. They will enter high school having encountered a range of technologies, not even imagined at the time of their birth: Web logs (blogs), video editors, Web editors, spreadsheets, instant messaging, listservs, avatars, virtual reality, and the list goes on. By the time they graduate from high school, the term technological literacy, as we know it today, will undergo even more transformation. As these new literacies emerge, schools must adapt and make this new knowledge and literacy available to students. According to Leu, Kinzer, Coiro, and Cammack (2004), out of all of the skills for schools to emphasize, the most essential involve the Internet and other ICTs available for acquiring new knowledge. Termed the New Literacies Perspective, this view of literacy in a changing society can be defined as follows:

The new literacies of the Internet and other ICTs include the skills, strategies and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others. (p. 1572)

We see great potential here for applying the new literacies perspective to interdisciplinary planning, long a mainstay of the middle school curriculum. In this column we briefly revisit the concept and the importance of establishing an integrated curriculum through interdisciplinary teaming. Then, we introduce our modification of the Mindings Collage approach (Heafner & Marklin, 2006) and relate it to interdisciplinary planning and teaching through technology. Last, we show the results of this technology-driven, interdisciplinary approach in the representative work of a middle school student.

Interdisciplinary Teaming and Teaching

In interdisciplinary teaming, two or more teachers from different subject areas get together to plan and coordinate instruction for their topics, noting areas of commonality that can form the development of interdisciplinary units. These units are designed to help students see the connections between one field technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others. (p. 1572)

By Jeanie Marklin & Karen D. Wood

This We Believe Characteristics

- Students engaged in active learning
- Curriculum that is relevant, challenging, integrative, and exploratory
- Multiple learning and teaching approaches that respond to their diversity
- Organizational structures that support meaningful relationships and learning

Promoting Technological Literacy Through an Interdisciplinary Mindings Collage

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and another, rather than studying a single subject in isolation, as has been prevalent for many years. For teachers, principals, and policymakers concerned about high-stakes testing, the evidence supporting the positive effects of interdisciplinary teaming on achievement is compelling (Arhar, 1990; 1997; Dickinson & Erb, 1997; Felner et al., 1997; Flowers, Mertens, & Mulhall, 2000; National Middle School Association, 2002; Mertens & Flowers, 2004). The focus in teaming is, quite naturally, on collaboration—essential in a school setting and in society as well. Collaboration with colleagues, families, and community members as a means of meeting the needs of young adolescents has been identified by the National Middle School Association as a needed element of effective teaching (National Middle School Association Position Statement, 2006). We feel that technology is a great means for fostering this “collaboration of thinking” by drawing upon the multiple sources of information available to us as teachers as we plan interdisciplinary units of instruction. In the next section, we describe our adaptation of what has been called the Mindings Collage approach to address these ever-increasing technological changes.

The Origins of the Mindings Collage Approach

According to Sam Watson of the University of North Carolina at Charlotte, “mindings” is an old-fashioned word that we used to talk of “minding the store or the house, or the horse” (S. Watson, personal communication, October 12, 2005). According to the American Heritage Dictionary’s first two entries, the verb “minding,” means “1. To bring (an object or idea) to mind; remember. 2.a. To become aware of; notice;” however, the seventh entry states “To take care or charge of; look after” (http://education.yahoo.com/reference/dictionary/entry/mind). This idea of taking care or charge of something is what Watson claimed was “doing whatever was needful to protect and nurture, to cultivate, to be a worthy steward of the entrusted talents” (S. Watson, personal communication, October 12, 2005). Watson likened the Mindings Collage to mind exercises to cultivate what we think. We feel this notion can be applied to learning as we teach students to “mind their reading”—to pay attention and extend their understanding by making connections between and across subject areas and synthesizing from multiple sources of information. We used circles as a visual representation of “thought bubbles” with a collage effect. Inside the circles, teacher teams insert their

Figure 1

How to create your own Mindings Collage in MSWord

1. In a portable storage device (e.g., flashdrive), create a New Folder titled Mindings Folder.
2. Open an MSWord document and save as “Homepage” in your Mindings Folder.
3. Using the Drawing tools, create the front page of your collage (to use the Drawing tools, go to the View tab on the toolbar, scroll down to Toolbars and be sure that the Drawing toolbar is checked.

Once it is checked, a toolbar should pop up at the bottom of the screen. (Use the shapes to create your front page.)

4. Open a new MSWord document and title it exactly like one of the bubbles and give the page a description. For example:

Journal
This is where you can take notes and track your “A-HA” moments. Throughout the unit, each content may require a specific type of journal (e.g., Double Entry, Dialogic, or Math Journal). (Other options may be a content approach (e.g., math, science, social studies etc., or a thematic approach.)

5. Save this new document as the title (i.e., Journal) in your Mindings Folder.
6. Create one new document for every bubble and save it accordingly in your Mindings Folder.
7. Once you have all of the pages created and saved to the Mindings Folder, highlight the text in one shape on your front page, and go to the icon for hyperlink.
8. Connect the pages within each of the other documents. First insert a table with 1 row and 8 columns (to do this, go up to Table on the toolbar, scroll down to Insert and click on Table. A text box will appear asking for the number of columns and rows). Once you have the table you will type the name of each page. Then using the hyperlink function (see above), link each to its appropriate page in the Mindings Folder. Copy and paste the table to each page in your Collage. Every page (except the Home page) should look like this if you are using subject areas:
representation of “thought bubbles” with a collage effect. Inside the circles, teacher teams insert their thinking in the form of links, Web sites, and content assignments to connect their discipline to the topic or theme under study. Then, students take the lead to show their thinking by inserting in the circles their associations and connections related to the topic. The Mindings Collage approach has the potential to instill a sense of wonder and curiosity in students—a place to re-visit, explore, and use technology to extend and expand their thinking. In the next section, we show how to use the Mindings Collage to plan interdisciplinary units of instruction.

Planning an Interdisciplinary Unit Using the Mindings Collage Approach
Using a Mindings Collage to scaffold instruction provides teachers with a visual template for planning and teaching their own content as well as pulling from the resources in other content areas. In the sample template (see Figure 1), we share the step-by-step process for creating a Mindings Collage. The template can be modified to suit the needs of an interdisciplinary team or to meet the needs of students.

Once you have the basic template for the Mindings Collage, you will need to determine how you want to organize it as a teaching tool and as a reading- and writing-to-learn tool for your students. In the following seventh grade interdisciplinary unit, we use the Mindings Collage as a place to house artifacts from different content areas. Since this is a team approach to learning, the seventh grade team designed a Mindings Collage that housed artifacts from each of the content areas so that other content areas could reinforce the overarching question, “Does man belong to the Earth, or does Earth belong to man?” Each bubble represents the various content areas, but it could also be altered to represent each day of the unit or various themes that go into the unit of study. Each bubble is hyperlinked to a separate page, which houses the content area resources all members of the team then have access to for interdisciplinary lessons.

Once the organization has been established, each content area teacher works to provide resources for not only their own content but in support of the content of the other members of the team. For instance, in this unit of study, the team was looking at natural disasters in Africa, Asia, and the Pacific combining the state standards from science, social studies, math, and English language arts. To create an interdisciplinary unit, the team decided to explore the tsunami that struck Thailand in 2004. On each content area page there were numerous pictures, maps, diagrams, reading resources, writing resources, and hyperlinks to the Internet to help each team member seamlessly merge the topics. For instance, in the English language arts class, students examined the folklore of Thailand, while math concentrated on ratios, using the dramatic change in population before and after the tsunami. Students then wrote their own legends about the tsunami based on their understanding of legends and folklore and the numbers of people who died in the storm. Figure 2 displays an example of the science page for this aspect of our sample interdisciplinary unit.

The social studies teacher employed the map of the Indian Ocean to initiate a discussion about geography and the areas surrounding Thailand. The class used the visual as a means to consider how the environment affects cultures and people. The students speculated upon issues such as what people would do for food, clothing, and educational needs and addressed and problemitized any stereotypes that they may have had about peoples from this area of the world.

Meanwhile in science class, the teacher used both the map on the social studies page to understand where the earthquake started and the seismic map to understand how an earthquake in the Indian Ocean led to the ensuing tsunami. Students made predictions regarding where the tsunami could potentially strike. They also conducted experiments to understand how the pulses conduct across water and create devastation miles away.

Just as the teachers use a Mindings Collage to integrate their teaching, students can use the Mindings Collage to better understand topics across content boundaries. Students can set up and use the Mindings Collage in a variety of ways. They may take a thematic approach or break it into content
areas. We feel that a more integrated approach helps students reach rich, complex understandings that are not limited by the confines of a particular classroom. Students begin to transfer knowledge from one content area to other areas not only at school, but outside of school as well. However, the construction of the students’ Mindings Collage may need to begin with the guiding hand of the team to help students understand its purpose as a teaching and learning tool (see Figure 3). It may be beneficial to introduce one page at a time so that students gradually become introduced to the concepts. In the example in Figure 3, the team gradually introduced each page and eventually introduced pages that were interdisciplinary such as the vocabulary and journal pages. Students quickly learned about self-directed learning and began to bring in their own voices and ideas into both the Mindings Collage and the subsequent class discussions. Similarly, students began to bookmark and link pages to other pages when they felt compelled to connect a thought with something going on in another class.

The home page for the students’ Mindings Collage displays not only each subject but also a place for vocabulary and journaling. By using pages that are not content specific, the team underscores the notion that vocabulary is not confined to a single topic and can be used across the content areas. The home page also states the overarching question that each content area addresses throughout the unit, “Does Earth belong to man, or does man belong to the Earth?” Although this question is rhetorical in nature, it provides an opportunity for students to begin to wonder about the world they live in.

Figures 4 and 5 serve as examples of what teachers may ask students to do in their Mindings Collage. In this double entry journal, students are asked to take notes from their reading and then to make notes during group discussions. This particular journal does not have to be content specific and could easily lend itself to cross-content connections. Similarly, the Vocabulary Self-Awareness Chart (Blanchfield & Tompkins, 2003) allows students to better understand that vocabulary is not limited to a single content area. By incorporating this cross-curricular approach, students use the same vocabulary in all of their classes, thereby providing more exposure to new words and aiding in the transfer from short-term into long-term memory.

If the team decides to introduce one page of the Mindings Collage at a time, you may want to consider introducing pages that are interdisciplinary in nature. For this particular Mindings Collage, the team opted to introduce the Journal and Vocabulary pages first. On these pages students housed vocabulary words from every content area and referred to these entries during all of their classes. In this manner, students are introduced to the notion of interdisciplinary understandings of the content and vocabulary. Ideas for other pages include:

**Language Arts:** A place for students to track daily notes and ideas regarding literature introduced within a unit. Also a place for students to begin writing to the screen and sharing their writing and thoughts with others.

**Social Studies:** A place for students to begin to connect how history affects the present and begin to make connections between the past and the present and speculate about the future.

**Math:** Often, students can execute the formulas needed in math, but they do not understand why or what the formulas mean. This page is a home for those explanations and a place to record where math fits into their lives.

**Science:** Similar to math, students are often able to complete an experiment but are not able to extend that experiment into the real world. This is a place for students to explore where they see science in their lives and how it affects their world.
Summary

The need for students to develop an active and robust understanding of technology in all its forms is essential in today’s society (Blanton, Wood, & Taylor, in press). In this column, we have described how technology can serve as a medium for integrating the disciplines and increasing literacy skills via a teacher-initiated and student-developed interactive Web page called a Mindings Collage. The Mindings Collage, with its series of thought bubbles, requires students to link to various pages, highlight key points, reflect on and question the reading, and, most importantly, make connections across the varied subject areas under study. Thus, the Mindings Collage serves as a planning device for teachers and a reading and writing tool for students to enhance their literacy skills and their content knowledge within the context of an eLearning environment.

References


The research is very consistent in showing that highly successful schools are led by strong, competent leaders (Clark & Clark, 2004; Jackson & Davis, 2000; Useem, Christman, Gold, & Simon, 1997; Valentine, Clark, Hackmann, & Petzko, 2004; Valentine, Trimble, & Whitaker, 1997). In fact, Leithwood and Riehl (2003), in a comprehensive review of leadership research and practice, found that school leadership had significant effects on student learning. They concluded that leadership effects were second only to the effects of the quality of curriculum and teachers’ instruction.

Being a competent leader of a middle school is a complex job that requires a comprehensive knowledge base about leadership, learning, school improvement, school culture, young adolescents, and appropriate middle level programs. It also requires appropriate and timely action based upon that comprehensive knowledge base. Research over the past several decades and careful examination of successful practice have given a clearer picture of what principals need to know and do to improve the quality of learning in their schools.

What Do We Know About Middle School Leadership and Learning?

A considerable knowledge base exists about middle school leadership and how that leadership focuses on school improvement and student learning (Clark & Clark, 2004; Jackson & Davis, 2000; Valentine, Clark, Hackmann, & Petzko, 2002, 2004). This knowledge base, which is representative of leadership practices and of conditions found in highly successful middle level schools, provides insights about how positive learning environments are created and maintained. Knowing and understanding this body of information and its importance is essential to competent leadership focused on the improvement of young adolescent and adult learning.

This We Believe Characteristics

- Educators who value working with this age group and are prepared to do so
- Courageous, collaborative leadership
- A shared vision that guides decision making
- High expectations for all members of the learning community
- Students and teachers engaged in active learning
- Organizational structures that support meaningful relationships and learning

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1. **Learning Must Be the Principal's Top Priority**
   Making a difference in students' performance appears to depend on what principals establish as priorities and how they spend their time (Clark & Clark, 2002a). Research suggests that when learning is placed at the top of principals' priorities and when principals engage in more collaborative, learning-focused leadership, the academic performance of all students is likely to improve (Jackson & Davis, 2000; Lambert, 2002; Newmann & Wehlage, 1995; Smylie, Lazarus, & Brownlee-Conyers, 1996; Wheelock, 1998). Data from the three National Association of Secondary School Principals' studies of leadership (Valentine, Clark, Hackmann, & Petzko, 2002; Valentine, Clark, Irvin, Keefe, & Melton, 1993; Valentine, Clark, Nickerson, & Keefe, 1981) indicated that principals believed they should spend most of their time on instructional-related responsibilities. In reality, however, they reported that they spent much less time on instructional leadership than they did on administrative tasks, discipline, and other non-instructional tasks.

2. **No Significant Change Can Be Made and Sustained without First Changing the Culture**
   The cultures found in many middle schools present a major roadblock to the implementation and maintenance of developmentally appropriate programs. These cultures, which are supported by the unquestioning acceptance of unsubstantiated but widely believed notions about school organization, classroom instruction, learning, assessment, and governance, produce a climate in which change is difficult to implement and sustain (Clark & Clark, 2003). Barth (2002) suggested "School cultures are incredibly resistant to change, which make school improvement—from within or from without—usually futile. Unless teachers and administrators act to change the culture of a school, all innovations, high standards, and high-stakes tests will have to fit in and around existing elements of the culture. They will remain a superficial window dressing, incapable of making much of a difference" (p. 7).

3. **Principal Commitment to High Expectations and Success for All Students in Developmentally Appropriate Environments Is Essential to Improved Student Learning**
   Young adolescents can be successful learners when principals and teachers establish high expectations and fully implement developmentally appropriate programs that ensure the success of all students (Clark & Clark, 2004; Jackson & Davis, 2000; Schools to Watch, 2004; Valentine, Clark, Hackmann, & Petzko, 2004). A commitment to high expectations and student success guarantees that student learning will be the focus of the school and that principals and teachers will take action on that commitment in their classrooms and in their schools.

4. **Full Implementation of the Middle Level Concept Leads to Gains in Student Learning**
   When middle level programs are fully implemented, young adolescents show gains in learning (Felner, Jackson, Kasak, Mulhall, Brand, & Flowers, 1997). “The existing research,” state Jackson and Davis, “suggests that when reforms are implemented with integrity, in a manner that leads to authentic change in curriculum, instruction, and assessment and in the organization and climate of the school, dramatic and lasting improvements in student performance can be obtained” (2000, p. 6). Reforms that are implemented in a limited or scattershot manner and are not accompanied by substantial change in teaching practices result in more limited or no improvement in student outcomes (Jackson & Davis, 2000).

5. **Knowledgeable Principals Are More Likely To Fully Implement Middle Level Programs in Their Schools**
   In the most recent National Association of Secondary School Principals’ National Study of Leadership in Middle Level Schools (Valentine, Clark, Hackmann, & Petzko, 2004), it was apparent that principals of highly successful middle level schools, when compared to principals in a national sample of middle level principals, were more knowledgeable about middle level practices and young adolescent development. These knowledgeable principals were more likely to rate programs such as interdisciplinary teaming, exploratory courses, teacher advisories, and cocurricular and intramural activities as being very important, and they were also more likely to fully implement these programs. Because their knowledge base had made them aware of the advantages of the middle level concept for young adolescents, they implemented these programs in their schools.

6. **Accountability and High-stakes Testing in and of Themselves Do Not Pose a Threat to Developmentally Responsive Programs**
   Accountability is not in conflict with the middle level concept. In fact, “standards make clear to everyone the academic mission of the middle
grades” (Mizell, 2002, p. 78). It is, however, the way that accountability is implemented and applied that determines whether successful middle level programs are supported or undermined. Accountability, when recognized and understood as a complex issue that is influenced by diverse values and beliefs and applied in multiple ways, “can be used as a positive vehicle for creating learning environments where students and adults can be successful” (Clark & Clark, 2006, p. 52).

7. **Collaboration and Shared Decision Making, When Focused on Learning and Instruction, Can Lead to Gains in Student Achievement**

Studies confirm that the quality of classroom instruction and student achievement scores are positively affected in schools where the focus of collaborative decision making is on instruction and learning issues (Clark & Clark, 2002b; Newmann & Wehlage, 1995; Peterson, Marks, & Warren, 1996; Smylie, Lazarus, & Brownlee-Conyers, 1996). It should be noted that when there is low participation in collaboration and when it is non-instructionally oriented, achievement scores may decline (Smylie, Lazarus, & Brownlee-Conyers, 1996).

8. **Certain Leadership Approaches Positively Influence Student Learning**

There is a growing body of research that identifies specific leadership practices that are most effective in bringing about increased student achievement (Clark & Clark, 2006; Leithwood & Riehl, 2003; Marzano, Waters, & McNulty, 2005; Waters, Marzano, & McNulty, 2003). For example, Waters, Marzano, and McNulty (2003) have identified 21 leadership responsibilities that have significant relationships to student learning. Other researchers and scholars have identified components of transformational leadership—(a) leading from the center, (b) enabling and supporting teacher success, (c) managing reform, and (d) extending the school community—as an approach that enhances student learning (Clark & Clark, 1994; Leithwood & Jantzi, 2000; Louis & Murphy, 1994; Rost, 1991; Sergiovanni, 1990). While principals can have a positive impact on student achievement by using specific leadership strategies, they can also “have a marginal, or worse, a negative impact on achievement” by using non-productive approaches (Waters, Marzano, and McNulty, 2003, p. 5).

9. **Relationships Are Important to Learning and School Success**

Jackson and Davis (2000) suggested that relationships in middle level schools affect both the quality of student learning and the quality of teaching. Studies have shown that the degree to which students are engaged and motivated in school depends largely on the quality of relationships they experience there (Eccles & Midgley, 1989; Lee & Smith, 1993). Principals in the National Association of Secondary School Principals’ study of highly successful schools recognized the value of relationships. These principals took the building and nurturing of relationships very seriously, and the results of their efforts were evident in (a) the trust and respect the teachers had for their principals and one another, (b) their strong consensus of values that centered on high expectations and student success, (c) their belief in the efficacy of collaboration and shared decision making, and (d) their commitment to collegial and individual learning. These schools were places where students and adults felt valued and where strong positive relationships enhanced learning (Valentine, Clark, Hackmann, & Petzko, 2004).

**What Are the Implications of What We Know about Leadership and Learning?**

The implications from research and practice that support the knowledge base on leadership and learning are very evident. Priorities are important, knowledge is essential, accountability matters, and cultures must be changed. While these four interacting categories are listed separately, collectively they form the foundation on which successful learning environments are built.

**Priorities are important**

Is learning the top priority of middle level school principals? To what leadership tasks do they allocate their time? While most principals would answer affirmatively that learning is a top priority in their schools, many principals spend more time engaging in leadership tasks that are unrelated to learning (Valentine, Clark, Hackmann, & Petzko, 2002; Valentine, Clark, Irvin, Keefe, & Melton, 1993; Valentine, Clark, Nickerson, & Keefe, 1981). If learning is to be the principal’s number one priority, it must be manifested in the way time is spent, the manner in which the school is organized for learning (appropriate instructional approaches and curriculum sequencing), the way adults interact...
about learning environments (relationships, shared leadership, collaborative decision making), and the way resources are allocated to support learning (time, embedded professional development).

Schools where principals make learning their number one priority are places where young adolescents and adults can be successful learners. In these schools, principals were able to create environments

1. Where high expectations were the norm (Jackson & Davis, 2000; Wheelock, 1998).
2. Where students and adults learned, continued to learn, and supported the learning of others (Barth, 2002).
3. Where relationships were valued and nurtured (Fullan, 2002).
4. Where collaboration focused on learning was widely practiced and functioned successfully (Clark & Clark, 2002b).
5. Where shared leadership was promoted and supported (Clark & Clark, 1994, 2002a, 2002b).

Knowledge is essential
A comprehensive knowledge base about middle level programs, young adolescent development, learning and instruction, curriculum, and assessment is essential for creating environments that foster successful student learning. Unfortunately, only about 25% of teachers in middle level schools have specialized preparation for teaching young adolescents (Jackson & Davis, 2000). Even more disturbing is that half of the principals of middle level schools have little or no formal preparation for or experience in middle level schools (Valentine, Clark, Hackmann, & Petzko, 2002, 2004). This lack of preparation and experience of middle level teachers and administrators may partially explain the low levels of implementation of the middle level concept in many middle level schools. In addition, many principals have little or no preparation or experience in transformational leadership approaches such as shared leadership and collaborative decision making (Jackson & Davis, 2000).

In highly successful middle level schools, the more formal preparation in middle level education principals have, the more likely they are to believe in and implement the various components of the middle level concept (Valentine, Clark, Hackmann, & Petzko, 2004). One wonders if a larger number of principals had specialized preparation in middle level education and contemporary leadership practices

1. Would less time be spent on management and more time spent on instructional leadership?
2. Would teaming be more highly implemented and be more effective in bringing about gains in student learning?
3. Would classrooms be much more interactive and engaging?
4. Would curriculum be more coherent, more focused, and more rigorous?
5. Would schedules be more flexible and less structured around the single subject schedule?
6. Would collaborative cultures with shared leadership and shared decision making become the norm for school governance and decision making?

While there are no easy answers to these questions, it is clear that middle level schools still fall short of their potential, a potential that can only be realized by knowledgeable and committed principals and leaders.

Accountability matters
Principals must address and deal with accountability and the standards, mandates, and high-stakes testing that accompany it. The way in which they interpret accountability and apply it in their middle schools has a significant influence on student and adult learning. If, for example, accountability is interpreted solely as being the standards, mandates, and high-stakes testing required by the district and various governmental agencies, there are very real possibilities that the application of accountability will restrict curriculum, instruction, and other educational activities. On the other hand, when principals focus accountability on the broader issues of school vision, values, and beliefs, it has the potential to support and expand opportunities for learning.

Accountability, when applied to all facets of the school culture, provides

1. An opportunity to focus on commonly held goals and facilitate planning and implementation.
2. A vehicle for attaining higher student achievement.
3. A process for focusing schools, teachers, students, and their families on understanding what students should know and be able to do.

4. A focus for school improvement efforts.

   In implementing a broad-based approach to accountability that fosters successful learning environments, principals address accountability in many ways (Clark & Clark, 2006):

   1. They are aware of personal strengths and weaknesses, and they are committed to personal and professional learning.
   2. They hold themselves and others accountable for learning, and they encourage collaboration and the sharing of knowledge and leadership.
   3. They encourage and provide learning experiences for others.
   4. They use knowledge to inform leadership practices.
   5. They collaboratively develop a strong core of shared values and beliefs and build strong relationships of trust and collegiality.
   6. They hold high expectations for everyone in the school.
   7. They organize the school to fully implement programs and expect curriculum, instruction, and assessment to be aligned with standards and congruent with core values and beliefs.
   8. They support required standards and measurement procedures while recognizing that accountability for learning is much broader than mandated standards.
   9. They recognize that accountability for learning involves many stakeholders.
   10. They use all available resources to increase learning opportunities.

Cultures must be changed

School cultures can be either healthy or unhealthy, and no significant change can be initiated or sustained without first changing the school’s culture. School culture can play several important roles. First, it can embrace new ideas and incorporate them into the values and beliefs of the school. Second, the existing school culture can provide strong resistance to change. This can be both a positive or a negative factor. A culture that might resist the implementation of change or mandates that are inconsistent with commonly held values and beliefs might be the same culture that resists needed changes to the school.

The challenge for principals who have learning as their top priority is to create a strong culture that supports young adolescents. Such a culture, when created using a knowledge base of young adolescent development and the middle level concept, provides a strong buffer from distractions and outside pressures. Clark and Clark (2003) stated:

A school with a culture that supports the middle level concept not only has the organizational structures typically found in middle level schools, but it highly implements these structures because it is believed that these structures and practices benefit young adolescents. This culture supports young adolescent learning and adult learning and any attempts to impose outside mandates are “fit in” in ways that support the values of the culture. (p. 56)

It is important to recognize that middle level principals who have been successful at creating learning cultures during this current era of high-stakes testing and accountability did not look to reduce or eliminate developmentally responsive programs, curriculum, and instruction. They were able to create and maintain strong, healthy school cultures that supported student development and achievement while satisfying the requirements of standards and accountability (Clark & Clark, 2003; Valentine, Clark, Hackmann, & Petzko, 2004).

In building, supporting, and maintaining healthy school cultures, school leaders continually

1. Challenge current cultural norms.
2. Protect and reinforce the important values of the culture.
3. Use collaboration.
4. Support and embed professional development within the school.
5. Use mandates and calls for accountability to enhance, not restrict, school programs.
6. Communicate regularly with all stakeholders (Clark & Clark, 2003).

Strong, energetic, and informed leadership is critical in creating and maintaining school cultures that focus on learning. If middle level schools are to
be places where all young adolescents will be successful learners, principals must be committed to building and sustaining healthy school cultures.

Summary

Much is known about what it takes to create and maintain middle level schools where students are successfully engaged in learning. While it is essential that principals have extensive knowledge about young adolescent development, developmentally appropriate middle level programs, curriculum and instruction, assessment and evaluation, and cultural change, knowledge is not enough.

Principals must act on their knowledge. They must make a personal commitment that learning will be the top priority of their schools. They must fully implement middle level programs and be accountable for achieving mandated standards in an environment of developmental appropriateness. Their collaborative efforts must be focused on learning, and they must use leadership strategies that have been shown to have a positive influence on student success. Principals must also engage their schools in cultural change, creating environments that refocus the school on the values, beliefs, and relationships that are critical to the support of student and adult learning.

References


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