

Using an interdisciplinary “trunk” to facilitate interdisciplinary planning among teachers.  
Gary J. Senn, Bridget K. Coleman, Deborah H. McMurtrie  
University of South Carolina Aiken

Paper Presented at the  
Southeast Regional Professors of Middle Level Education Symposium  
Appalachian State University  
Boone, NC  
May 19-21, 2010

## Abstract

Interdisciplinary traveling trunks were established as part of the South Carolina Center of Excellence in Middle-level Interdisciplinary Strategies for Teaching (CE-MIST). CE-MIST was produced under a grant from the South Carolina Commission on Higher Education under the auspices of the EIA Teacher Education Centers of Excellence Grant Program. The traveling trunk component of CE-MIST was made possible through funding from the Aiken Writing Project and the National Writing Project. CE-MIST partnered with three middle schools in South Carolina by providing professional development activities for teachers that focus on interdisciplinary strategies for teaching and by providing enrichment activities for students to model interdisciplinary learning. The establishment of interdisciplinary traveling trunks was used as the catalyst to tie interdisciplinary planning by teachers to activities with students. Grade level teams at each school were comprised of one teacher from each of the four main content areas: English / language arts, mathematics, science and social studies. Additionally, teams were encouraged to include one additional teacher from another discipline such as music, art, physical education, special education or media arts. The teams collaborated to develop interdisciplinary lessons that included a target of minimum of three of the content areas with a focus on writing across the curriculum. The final product of each team was a “trunk” that included a unit plan, lesson plans and materials necessary to facilitate the delivery of the trunk contents to students. The final products were known as “Interdisciplinary Traveling Trunks” with the idea that once created, the trunks would be placed in a central location and made available to travel to many schools in the region. In the end, the teachers were so engaged in the planning and took such ownership of the trunks that they were reluctant to release the trunks to other schools. This resulted in duplicate trunks being created for traveling and the original trunks being housed at the schools where they were developed.

Using an Interdisciplinary “Trunk” to Facilitate  
Interdisciplinary Planning Among Teachers

The South Carolina Center of Excellence in Middle-level Interdisciplinary Strategies for Teaching (CE-MIST) was established in 2008 through the Centers of Excellence Program sponsored through the South Carolina Commission on Higher Education (CHE) under the auspices of the EIA Teacher Education Centers of Excellence Grant Program. The purpose of this competitive grant program is to enable eligible institutions to serve as "state-of-the-art" resource centers for South Carolina in a specific area related to the improvement of teacher education. CHE has established over 20 Centers of Excellence since the program began in 1987. These “resource centers” develop and model state-of-the-art teaching practices, conduct research, disseminate information, and provide training for K-12 and higher education personnel in the Center's specific area of expertise. Typical activities for a Center of Excellence include (South Carolina Commission, 2007):

- developing and modeling state-of-the-art pre-service preparation programs for other institutions of higher education to emulate that focus on increasing the number of teachers appropriately prepared to work effectively with students in low-performing schools and with diverse needs;
- developing innovative school-based projects to enhance student and teacher achievement at low-performing schools;
- conducting statewide school-based and campus-based faculty development activities related to State content and assessment standards;
- conducting research and evaluation activities related to teacher quality and student achievement;
- serving as a state (and/or regional and national) clearinghouse for information dissemination on center activities;
- providing demonstration, outreach, and technical assistance programs for low performing schools and districts and institutions of higher education as requested.

CE-MIST is presided over by an advisory council that is comprised of the principal investigators of the project, a middle level education consultant and teams from each of the partnering schools. The school teams consist of a building administrator and two to four

teachers from the school. The CE-MIST Advisory Council meets twice per year to reflect on project components and plan for future activities.

The main purpose of CE-MIST is to provide more meaningful educational opportunities for middle level students. To this end, CE-MIST partnered with three middle schools in South Carolina to provide professional development activities for teachers that focus on interdisciplinary strategies for teaching and to provide enrichment activities for students to model interdisciplinary learning. Additionally, pre-service teachers completed service-learning activities at the CE-MIST schools.

Pre-service teachers enrolled in AEDP 334 Adolescent Development at USCA completed 10-20 hour service-learning placements at CE-MIST schools. The pre-service teachers helped in-service teachers differentiate instruction and provided tutoring for middle level students. During the 2009-2010 academic year, the pre-service teachers collectively provided 713 hours of service learning to the CE-MIST schools. Additionally, three pre-service teachers participated in a mentoring program at the Ruth Patrick Science Education Center (RPSEC) where they worked with the middle level students who participated in the field trip activities. The pre-service teachers were mentored by RPSEC instructors and acted in the role of teaching assistants to support the enrichment activities.

Enrichment activities for middle level students were conducted in three formats: field trips to the RPSEC, field trips to the Silver Bluff Audubon Center (SBAC) and school-based activities. Every middle level student at the three schools participated in field trips to the RPSEC. The planetarium and hands-on classroom programs in which they participated were as follows: Grade 6: Blown Away, Circuit City, Polygon Puzzle; Grade 7: Journey Into the Living Cell, CSI Solutions, Ravenous Raptors; Grade 8: To the Moon and Beyond, Rockin' & Rollin,' Are You Dense? Students in grade 7 from all three schools also participated in activities at the SBAC. The programs included: Tools for Inquiry, Investigating An Aquatic Ecosystem and Invertebrate Classification. Finally, students in grade 8 participated in activities at their school that were presented by CE-MIST staff. These activities expanded on activities conducted during the field trip experiences. More information about these programs can be found on the CE-MIST Student Programs web page (Student Programs, 2009).

Professional development activities for teachers were conducted through a series of school-based, professional development workshops for teachers that focused on interdisciplinary

strategies for teaching. Topics included planning for interdisciplinary teaching; using text sets; theme building; trading content standards; writing across the curriculum; and using primary sources. A variety of instructional techniques were modeled for teachers such as Quick-Writes, PQP, structured note taking, Think-Pair-Share, response heuristics, cinquain synthesis, and RAFT<sup>2</sup>. Two summer institutes were held to offer teachers additional opportunities for professional development. A two-day institute was held each summer where teachers participated in interdisciplinary strategies for teaching through activities provided by Hands On: Real World Lessons for Middle School Classrooms from the University of Tennessee (Hands-on, 2010). A month-long institute was sponsored by the Aiken Writing Project and included six hours of graduate credit. This institute provided a central focus of writing across the curriculum for the interdisciplinary units that would form the structure for the traveling trunks.

#### Interdisciplinary Traveling Trunk Development

Teachers worked in horizontal planning teams bringing together the academic core and specialty areas with the goal of developing an interdisciplinary traveling trunk. In order to be eligible for a traveling trunk team, one member of the team was required to participate in the Aiken Writing Project Summer Institute. Each traveling trunk team member received a \$200 stipend for his or her participation on the team. The member of the team who participated in the summer institute received an additional stipend of \$200 and six graduate credit hours for the course, AETE 760 *Issues in Writing Instruction*. At the beginning of the year, teams negotiated a theme or topic. Academic standards, assignments, resources and materials were combined in a unit plan used in the development of interdisciplinary traveling trunks.

Trunks were designed around the topics to support the successful implementation of the unit plan. The unit plan and associated lesson plans were based on curriculum standards from each of the content areas included in the unit. A template for planning interdisciplinary teaching (Appendix B) was completed by each team as it prepared the traveling trunk. Each team started with an \$800 virtual shopping trip to support their grade level's interdisciplinary unit. The team members negotiated the budget, resources and materials. The trunks included children's literature, class sets of novels, manipulatives, artifacts, and other appropriate materials to support the unit.

The planning process culminated in the development of a number of well-crafted interdisciplinary traveling trunks. The grade 6 teams created three trunks: *Ancient Egypt*,

*Medieval Times* and *The Middle Ages*. Two trunks produced by the grade 7 teams had similar themes: *Milkweed (The Holocaust)* and *Remember! Never Forget the Holocaust!* There were three trunks developed by the grade 8 teams: *Great Charleston Earthquake of 1886, South Carolina's Culture and the Cold War of the 1950's*, and *Shake, Rattle & Roll*.

An evaluation rubric (Appendix A) for the traveling trunks was developed during the spring semester of 2010. This rubric will be used to evaluate the trunks that have been produced, and the results of the rubric evaluation will be used to determine which trunks will be duplicated to support the traveling trunk program. Additionally, the rubric will be used to guide the development of the second set of traveling trunks that will be developed during the summer and fall of 2010. While developing the trunk rubric, differentiating instruction and essential questions were deemed important for the effectiveness of the trunks. These techniques will be included in the professional development plan for 2010-2011.

#### Lessons Learned

Many of the teachers had never participated in interdisciplinary planning. There was some initial trepidation and some instances of resistance to the concept of this type of planning. Initially, commonly stated obstacles were planning time, impossibility of tying together standards from different content areas, and lack of materials. The workshops provided structured planning time and assistance with tying together content standards while the interdisciplinary trunks provided materials. Although stipends were offered to the teachers to encourage the interdisciplinary planning, the development of the trunk was the major factor in their willingness to implement the interdisciplinary units.

A central plan for the trunks was embodied in their identification as interdisciplinary *traveling* trunks. Once the teachers had invested their time, energy and hearts into the trunks, they were reluctant to release them to the distribution center at the RPSEC that would allow the trunks to be available to other middle level teachers. Through the recommendation of the advisory council, the original trunks remained at the schools where they were created. Additional funding from the Aiken Writing Project was used to duplicate some of the trunks, which were then put into circulation through the successful Traveling Science and Mathematics Demonstrations Program at the RPSEC.

School level administrative support for the project in general and for the trunks in particular was crucial for the successful implementation of the various components of CE-MIST. The level of administrative support for CE-MIST was directly related to the level at which teachers participated in the activities of the project.

It was somewhat more difficult to attract teachers to the summer institutes than anticipated. The main rationale for this difficulty was the time commitment required of teachers during the summer.

The continuity of CE-MIST as a whole supported the high level of success realized through the various phases of the project. The professional development activities were related to each other and built on the central theme of interdisciplinary strategies of teaching. The traveling trunks were a direct application of the strategies provided through the professional development activities. The student enrichment activities at the RPSEC and SBAC modeled the process of applying interdisciplinary strategies to lessons provided to students. Finally, the pre-service teacher activities provided additional hands-on support at the schools and strengthened the stakeholders' partnerships.

## References

- CE-MIST. (2010). *South Carolina Center of Excellence in Middle-level Interdisciplinary Strategies for Teaching*. Retrieved from <http://rpsec.usca.edu/CE-MIST/>
- Hands-on. (2010). *Hands On: Real-World Lessons for Middle School Classrooms*. Retrieved from <http://handsonclassrooms.org/>
- South Carolina Commission on Higher Education. (2007). *Centers of excellence Education Improvement Act of 1984: Request for proposals*.
- Student Programs. (2009). *CE-MIST Student Programs at the Ruth Patrick Science Education Center*. Retrieved from <http://rpsec.usca.edu/CE-MIST/CE-MISTstudent.html>

Appendix A – Traveling Trunk Scoring Rubric



University of South Carolina Aiken  
 471 University Parkway  
 Aiken, South Carolina 29801  
 803-641-3769  
<http://rpsec.usca.edu/CE-MIST/>

**Scoring Rubric For Interdisciplinary Traveling Trunks**

Title of Unit: \_\_\_\_\_

Developed by: \_\_\_\_\_

School: \_\_\_\_\_ Grade Level: \_\_\_\_\_

<b>INTERDISCIPLINARY UNIT PLAN (100 points)</b>			
<b>Category</b>	<b>Unacceptable</b>	<b>Acceptable</b>	<b>Target</b>
<b>Academic Excellence</b>	The unit plan is aligned with academic standards in fewer than two content areas. (0-6 pts.)	The unit plan is aligned with academic standards in two or more content areas. (7-8 pts.)	The unit plan is <b>aligned with academic standards</b> in three or more content areas, as well as one or more exploratory areas such as art, music, technology, or physical education. (9-10 pts.)
	Connections between content areas are missing or are vague. (0-6 pts.)	The unit plan demonstrates clear and meaningful connections between content areas. (7-8 pts.)	The unit plan demonstrates explicit, thoughtful, and coherent <b>connections between content areas</b> . (9-10 pts.)
	The unit fails to incorporate a variety of effective teaching strategies. (0-6 pts.)	The unit incorporates three or more effective teaching strategies that support the skills being taught. The activities address two or more modalities of learning. (7-8 pts.)	<b>Instructional strategies</b> include a wide variety of challenging and engaging activities that are clearly related to the standards, concepts, and skills being taught. The activities address three modalities of learning. (9-10 pts.)

	Essential questions are missing or are not linked to the unit. (0-1 pts)	The unit is framed by two or more essential questions that students will investigate. (2-3 pts.)	The unit is framed by thoughtful <b>essential questions</b> that students will investigate through daily assignments and projects. (4-5 pts.)
	The unit does not include meaningful writing and pre-writing activities. (0-6 pts.)	The unit includes meaningful writing activities in two or more content areas. The unit includes the use of pre-writing activities and at least two different kinds of writing. (7-8 pts.)	The unit emphasizes <b>writing across the curriculum</b> . Pre-writing strategies are connected to learning goals. Students write, edit, and polish at least three different kinds of writing, formally and informally. (9-10 pts.)
<b>Developmental Responsiveness</b>	The unit is teacher directed and does not reflect the interests, needs, concerns, and experiences of young adolescents. (0-6 pts.)	The unit is developmentally appropriate for young adolescents. It reflects the interests, needs, concerns, and experiences of young adolescents. (7-8 pts.)	The unit is <b>developmentally appropriate</b> for young adolescents. It is inviting, challenging, and exploratory. The unit integrates real-world issues and reflects the interests, needs, concerns, and experiences of young
	Students are passive learners. Few if any opportunities for collaboration exist. (0-6 pts.)	The unit provides opportunities for students to be actively engaged in learning with two or more collaborative activities. (7-8 pts.)	The unit provides opportunities for students to be <b>actively engaged</b> in affective learning. Many collaborative activities are planned to promote social development. (9-10 pts.)
<b>Social Equity</b>	The unit does not address students’ varying backgrounds and abilities. Activities do not meet the diverse needs of students and would be difficult to adapt. (0-6 pts.)	The unit includes activities and materials that challenge and support students of varying backgrounds and abilities. Activities can easily be adapted to meet the diverse needs of all students. (7-8 pts.)	The unit includes relevant, multi-level activities and materials that challenge and support students of <b>varying backgrounds and abilities</b> . Activities meet the diverse needs of all students, so that every student can participate and achieve success. (9-10 pts.)
<b>Logistics</b>	The unit lacks organization and would be difficult to implement by other	The unit plan is organized and outlines goals, activities, and assessments that could	The unit plan is very organized with well-defined goals, detailed activities, and specific assessments that

	teachers. (0-6 pts.)	be implemented by other teachers. (7-8 pts.)	could <b>easily be implemented</b> by other teachers. (9-10 pts.)
	The unit plan reflects the work of individuals rather than a fully functioning team. (0-6 pts.)	The unit plan is the work of a successful interdisciplinary team. (7-8 pts.)	The unit plan is clearly the work of a highly collaborative, successful <b>interdisciplinary team</b> . (9-10 pts.)
	The unit plan is not submitted electronically by the deadline. (0 pts.)		The unit plan is <b>submitted electronically by the deadline</b> . (5 pts.)

Final Score: \_\_\_\_\_/100      Comments:

Appendix A – Planning for Interdisciplinary Teaching



## Planning for Interdisciplinary Teaching

**Theme / Topic:** \_\_\_\_\_ **Grade Level:** \_\_\_\_\_

**Text Set:**

**Connections Across the Curriculum:**

**Culminating Project:**

**SC Academic Standards:**

ELA	Math	Science	Social Studies
<b>Exploratory</b>			

**Assignments:**

***Materials / Resources Needed:***