

Didn't We Already Talk About Animals in Science?

By
Mary Jean Takes

"Given a pile of jigsaw puzzle pieces and told to put them together, no doubt we would ask to see the picture they make. It is the picture, after all, that gives meaning to the puzzle and assures us that the pieces fit together, that none are missing, and that there are no extras. Without the picture, we probably wouldn't want to bother with the puzzle.

Ironically, this situation is very much like what we ask young people to do all the time in school. To students, the typical curriculum presents an endless array of facts and skills that are unconnected, fragmented, and disjointed. That they might be connected or lead toward some whole picture is a matter that must be taken on faith by young people or, more precisely, on the word of adult authority."
(Beane, 1991)

"Why do we have to learn this?"

"When are we ever going to use this stuff?"

The connection which exists between many of the things we teach and test and the real life experiences students encounter may frequently seem elusive to those students. So elusive is the connection, says Brandt (1991), that students are dropping out of school because the activities seem irrelevant to their lives. Establishing this relevancy is of primary importance when motivating students to become more involved in their learning at the middle school level.

A Curriculum Plan

Like many other educators, two of my colleagues and I spend much of our time trying to motivate our students. As teachers of students with special needs, the problem appeared even greater. Many of these students seemed to have already given up on the possibility of academic success. How could we ever convince them that the learning activities they engaged in at school were of any importance?

As teachers in self-contained classes for students with disabilities, we were responsible for teaching all academic subjects - a task which required a great deal of planning. We attempted to plan for motivating activities in each of those individual subject areas, but accomplishing this simultaneously proved to be difficult. We began to look at ideas which might tie the subjects together in a motivating, yet sensible way. This led us towards the development of interdiscipli-

nary units revolving around themes which appeared naturally within our subject areas.

In the spring of the year, we compiled a list of all the general unit topics which were to be covered the next year in the areas of social studies, science, language, and reading (See table 1).

Table 1

Science	Social Studies	Reading	Language
ecology plants animals drugs peer pressure human body nutrition dental	discovery Revolutionary War new nation frontier life Civil War	various titles which included these topics: adolescence friendship humor nature/survival fantasies animals minorities Revolutionary War	writing to: inform persuade imagine create narrate describe research classify

The areas of reading and language were considered to be the most flexible and thus we concentrated our efforts on finding unit themes which occurred in social studies and science. The social studies curriculum for that year revolved around the chronology of America from discovery to the Civil War. This meant that content sequence would need to remain intact for that subject area. Although certain units in science lent themselves well to activities planned for particular seasons of the year, those units were reasonably flexible in terms of sequence. To coincide with grading periods, we lined up six 6-week units of social studies with the same number of units in science, matching unit topics as best as possible so that a common theme could run through each.

Utilizing trade books for reading instruction, we were able to find selections which revolved around our unit themes. Writing genres in language were paired with themes in which certain types of writing styles were more appropriate. In the end, the units were designed in such a way as to promote transfer of ideas and concepts across each of the subject areas (See Table 2).

Culminating projects were developed for each unit as well. These became the focal point of each unit and were planned as motivational links which would provide the relevancy needed for the students in their daily lives at school. These projects, often closely associated with the publishing aspect of the writing process, included a variety of activities: an "Animal Extravaganza" (a collection of activities geared

for second graders from a nearby school), a social studies fair (presentation of research papers and projects at parent conference time), an environmental issue of a newspaper (distributed to students and local businesses), a tall-tale play (again produced for the second graders from a nearby school), interviews with parents, relatives, or others about discrimination in their lives, and a debate on current issues important to adolescents.

Math was an academic area which, regrettably, was forgotten in our initial plans. Nevertheless, we later attempted to find elements of the projects which might involve math skills. For instance, in the Revolutionary War unit, students created timelines, charts, or graphs depicting items of interest associated with the research they conducted.

As noted by Dohner (1990), exploratory classes are also often neglected in creating interdisciplinary units at the middle school level. Although our students were integrated into regular education exploratory classes, we were able to incorporate into our units some of the concepts and activities which might have been part of those subject areas. As a part of the culminating project for the Revolutionary War unit, students were involved in activities such as dipping candles, making lanterns, churning butter, making ink, learning calligraphy, or making other objects of their choice.

So how did it all work?

In the long run, we noted several benefits to the interdisciplinary units. Palmer (1991) recommended that models of curricular connections allow for natural integration of content. We felt this was accomplished when, in the first few weeks of the initial unit, students were making the connections between their academic classes. Comments were made by students such as, "Hey, didn't we already talk about animals in science?" and "I remember learning about how they hunted caribou in our story in reading."

Although Brophy and Alleman (1991) were concerned with contrived curriculum integration, we felt that an effort had been made to provide for meaningful production of student work in the form of culminating projects which allowed for student choice and resulted in the display of student accomplishment in various subject areas, often involving a product which benefited others.

There was an efficiency of instruction as Sigurdson (1981) suggested would occur in such an effort. We could work on various elements of one project, such as a research paper, in different subject areas. We talked about background information on the topic in social studies, we conducted the research in reading and wrote in language class.

Most importantly, the students' self-esteem seemed enhanced through their useful involvement in the projects. Student interest was high when they found their work was to be entertainment for younger students. Suddenly, there was purpose to their effort in school. They were anxious to be appreciated for their work.

As teachers, collegiality was promoted through our continual communication regarding unit development. It required a great deal of time working together and common planning time was scarce. We utilized what time we occasionally were given and put in extra time when necessary. This proved fruitful for us, as we no longer felt isolated in our decision-making and it was very satisfying to allow our creativity to bloom together.

Overall, we felt the benefits of interdisciplinary units outweighed the costs. We saw increases in transfer of information learned across subject areas, efficiency of instruction, student interest and self esteem. Although countless hours were spent on curriculum integration for our students, we all agreed that the results had been well worth the effort.

Table 2

****** denotes theme for unit
italics denotes theme title
 (denotes topics included related to theme)

Unit	Science	Social Studies	Reading	Language
1	**Animals <i>"Animalia"</i>	Discovery of Amer. (hunting/cooking)	<u>Julie of the Wolves</u> <u>The Midnight Fox</u>	Writing to classify: compare & contrast animals
2	Plants (camouflage, medicinal use, military strategy, economy, cooking)	**Revolutionary War <i>"Give me Liberty or Give me Death"</i>	<u>Witch of Blackbird Pond</u> <u>My Brother Sam is Dead</u> + word processing	Writing to Research: research papers on Rev War
3	**Ecology <i>"One World... One Chance"</i>	New Nation: Constitution (Nature, survival, Native American viewpoint)	<u>Sign of the Beaver Hatchet</u>	Writing to Inform: Newspaper stories
4	Human Body (illnesses, diseases, health care of frontier)	**Growing Nation: Frontier life <i>"Kings of the Wild Frontier"</i>	Tall Tales, fantasies, humor <u>Chocolate Fever</u> <u>How to Eat Fried Worms</u>	Writing to imagine/create: Tall tales of frontier fame
5	Nutrition/ Dental Hygiene (nutrition/dental problems/care of)	**Civil War <i>"We're all in this together"</i>	<u>Maniac McGee</u> <u>IT</u> <u>Thank You Jackie Robinson</u> <u>House of Dies Drear</u>	Writing to narrate/describe: write description of interviews w/ others on discrimination
6	**Drugs and Peer Pressure <i>"Just Say No"</i>	Everyday Law (court system, laws, consequences, decision-making)	<u>The Outsiders</u> <u>Dacey's Song</u>	Writing to persuade: letters, editorials formal debate

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