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Survey Report #2: Survey responses from the Teacher Profile Unit Teaching Plan

At the FY01 eMINTS kickoff teachers were asked to describe how they would conduct a sample lesson. Third-grade teachers were asked to describe ways they would teach a unit on matter and energy. Fourth-grade teachers were asked to describe ways they would teach a unit on Missouri state symbols. Teacher responses were classified according to the ways they would introduce the unit, the types of tasks proposed, and the strategies teachers would use to evaluate student performance. This memo characterizes teachers' responses in terms of their familiarity with constructivist teaching methods employing inquiry-based techniques. Overall 27% used a fully inquiry-based teaching strategy, 49% employed some inquiry-based methods, and 24% used teacher-centered methods.

The Context of the Teacher Profile Unit Teaching Plan

The Teacher Profile Unit Teaching Plan was developed by the Area Instructional Specialists as a way to understand teachers' approach to conducting a common lesson. These forms were collected as FY01 teachers were introduced to the program, either at the FY01 kickoff meeting or later when they received their teacher laptops. In most cases, teachers completed the Unit Teaching Plan when they completed the Profiler survey.¹ A total of 96 Unit Teaching Plans were collected from FY01 teachers (see Table 1).

The results show consistent differences between clusters. Consequently, the presentation compares different clusters where appropriate. However, individual cluster names have been changed to maintain the confidentiality of individual teachers.

Teachers were asked to describe how they would go about teaching a unit for their class. Third-grade teachers were asked to describe their approach to teaching a unit on matter and energy. Fourth-grade teachers were asked to describe how they would teach a unit on Missouri symbols. These units were selected because they address subject areas assessed by the third- and fourth-grade MAP tests, respectively.

In formulating their descriptions, teachers were asked to respond to four general questions about the lesson:

- What is your preferred teaching style?
- How would you begin the unit?
- What activities would you include?
- How would you evaluate the students understanding of the lesson?

¹ Results from the Profiler teacher survey are described in *eMINTS Survey Report #1*.

Table 1
Teacher Profile Unit Teaching Plans, by Unit Subject,
FY01 Teachers

Cluster	Matter and energy	Missouri symbols	Other	All teachers
A	8	2	5	15
B	1	5	3	9
C	2	4	0	6
D	5	6	1	12
E	1	6	4	11
F	4	6	0	10
G	1	2	4	7
H	1	2	3	6
I	5	2	3	10
J	1	8	1	10
All teachers	29	43	24	96
<i>Percent</i>	<i>30.2</i>	<i>44.8</i>	<i>25.0</i>	<i>100.0</i>

Subject of Lesson Described

The topic of the lessons teachers described is presented in Table 1. While most of the teachers followed the directions, i.e., described units addressing Matter and Energy or Missouri Symbols, one-quarter described another lesson. A few of these teachers did not teach in third or fourth grade (e.g., some of the teachers in the two intensive eMINTS schools), but others did not follow directions. Some of the units in the “other” category included units on the circulatory system, plant growth, and the Lewis and Clark expedition. Despite the variety of lessons described, all responses are analyzed in the materials below.

Teacher description of lessons

The ways teachers described their lessons varied among three general types, a style that is fully inquiry-based, a style that includes inquiry-based techniques, and a predominantly teacher-directed method. Table 2 presents the distribution of these three categories. Almost half of all teachers provided responses that fit into the middle category, indicating that they used inquiry-based techniques to some extent.

Table 2
Teacher Profile Unit Teaching Plans, by Preferred Teaching Style,
FY01 Teachers

Cluster	Fully inquiry- based	Evidence of inquiry- based techniques	Teacher- centered methods	All teachers
A	6	6	3	15
B	3	5	1	9
C	1	3	2	6
D	3	6	3	12
E	4	6	1	11
F	2	6	2	10
G	0	3	4	7
H	2	3	1	6
I	3	5	2	10
J	2	4	4	10
All teachers	26	47	23	96
<i>Percent</i>	<i>27.1</i>	<i>49.0</i>	<i>24.0</i>	<i>100.0</i>

As an example of a “fully inquiry-based teaching method,” one teacher noted she was a member of the Inquiry Leadership Cadre with the University of Missouri. This teacher clearly prefers inquiry-based methods. She writes, “I am currently teaching other teachers how to teach with Inquiry methods. Now that I use this in my classroom most of the time, I have found my students to be better learners and more engaged in what we are doing.”

Other teachers showed evidence of inquiry-based techniques in their written plans. One teacher wrote, "Often, my students are all performing different experiments." In this classroom, where the students are engaged in a variety of activities implies that the ideas and interests of the children drive the learning process.

Twenty-four percent of all teachers were classified as preferring a more teacher-centered teaching method. This style of teaching emphasizes lecturing and closed-ended student assessment. Writes one, "I have been teaching since 1971. Most of my instruction is teacher-directed." Nevertheless, many teachers are aware they are teacher-directed and generally are open to new ways of doing things. One teacher-directed instructor wrote, “I hope to show a great deal of growth.”

How would you begin the Unit?

Teachers described three general strategies to begin their units and get students thinking about what the unit is designed to accomplish (see Table 3). The first strategy was to begin the lesson with a hands-on experience that leads to the desired curriculum goals. The second strategy was to lead a student discussion of materials. The third strategy was to place students in a passive role, typically by beginning the lesson with a lecture. The second strategy, beginning with a limited student discussion, was the most common.

Examples of the first strategy tended to employ the *KWL* technique. This is a technique in which teachers trigger students' prior knowledge by asking them what they already **K**now; students collaborate with others in the classroom to determine what they **W**ant to know; and finally, students discuss what they **L**earned. In the Northeast Region six teachers referred to KWL; in the Central and in the West Region, five teachers referred to KWL; in the South, four teachers, in the South East, three teachers, in the South Central, two teachers, in the Bootheel, one teacher. No mention was made in the East or Northwest of KWL. One teacher in the Southwest referred to finding out what the children already know, and what they wanted to know, but omitted what the children learned.

Other teachers in this category wrote things similar to this, "I try to begin a unit with something that grabs the student but makes the concept seem *real world*." In the preferred mode, the teacher would provide an introduction to the lesson that provides a hands-on experience. Examples provided by the teachers' lesson plans include:

- Go to the Missouri government Web page; from the symbols pictured, pick one to research.
- Students bring in symbols to share with the class.

Examples of the second strategy began with a discussion over an activity. One teacher writes that she would begin her unit with students working in cooperative groups to brainstorm things they already know, discuss it within their group, then share and record their list. Other examples from the lesson plans include:

- Brainstorm possible symbols for the state before showing students the actual symbols.
- Evaluate interest level of students by asking them what they wish to know about Missouri symbols.

The third strategy puts students in a passive role. Another teacher writes, "I would read a short introduction of details and introduce key parts and terms and definitions." Other passive introductory examples from the lesson plans include:

- Introduction uses transparency slides of Missouri symbols.
- Teacher might show a video on the subject

Table 3
Teacher Profile Unit Teaching Plans, by Introductory Activity,
FY01 Teachers

Cluster	Provided students with a hands-on experience	Provided student discussion and participation	Put students in a passive role	All teachers
A	7	7	1	15
B	1	7	1	9
C	2	3	1	6
D	6	5	1	12
E	6	5	0	11
F	4	6	0	10
G	1	3	3	7
H	4	2	0	6
I	5	5	0	10
J	7	2	1	10
All teachers	43	45	8	96
<i>Percent</i>	<i>44.8</i>	<i>46.9</i>	<i>8.3</i>	<i>100.0</i>

In some cases, the teacher verified the importance of initiating an anticipatory set, without detailing what the anticipatory set would be. For instance, “I like to begin the unit with an exciting, attention-getting activity to motivate interest.”

What activities would you include?

Table 4 presents a tally of classroom activities by cluster. Teacher responses were classified into two general categories, activities organized around some form of collaborative learning or individual and whole-class activities. Over half of the teachers described a cooperative activity.

Collaborative learning affords students advantages not available from traditional instruction. There is a peer support group when the shift is toward small group and away from whole class instruction. The prospects of peer support, along with the opportunity for more intensive and individualized instruction when a teacher moves from whole-class instruction is one reason for preferring a cooperative classroom environment.

However, there are instances in the lesson plans where a teacher talks about preferring group work, but the lesson plan does not bear this out. In one example from the Bootheel, the preferred teaching style is said to be group discussion, but the primary activity is having the children read and then color.

Table 4
Teacher Profile Unit Teaching Plans, by Types of Activity,
FY01 Teachers

Cluster	Cooperative activity	Individual or whole class instruction	Other	All teachers
A	9	6	0	15
B	6	3	0	9
C	2	4	0	6
D	6	6	0	12
E	7	4	0	11
F	4	6	0	10
G	0	5	2	7
H	5	1	0	6
I	6	4	0	10
J	5	5	0	10
All teachers	50	44	2	96
<i>Percent</i>	<i>52.1</i>	<i>45.8</i>	<i>2.1</i>	<i>100.0</i>

The lesson plans were examined to see if there was at least one activity requiring students to work in a true cooperative learning style where each student was responsible for part of the outcome. Collaboration is a part of the instructional design in one lesson where the students work cooperatively to solve pattern block problems and to design a pen for a pet by determining how much fence to purchase. Cooperation is an important component in these examples from the lessons:

- Make a stream table and watch it erode; strategize how it would erode less; students design an experiment to test this and share their process and results with the class.
- In groups of two or three students, hold a water race on a laminated maze. Students experiment with cohesive property of different surfaces such as foil or wax paper. Create a graph of water vs. land after covering a globe with blue or green sticky notes.

If a true cooperative learning style is not a part of the instructional design, the plan was examined to see if there was at least one activity where students were working together in groups or with partners. Some activities lend themselves to social discourse, more than other activities. When the students have an opportunity to present their own ideas, they reinforce or change their theories. Examples of working together in the lessons follow:

- Student debates
- Students browse the Web in pairs

Table 5
Teacher Profile Unit Teaching Plans, by Use of Scoring Guide,
FY01 Teachers

Cluster	Scoring guide/rubric used and shared with students	Scoring guide/rubric used but not shared with students	Scoring guide/rubric not used	All teachers
A	2	4	9	15
B	4	0	5	9
C	1	0	5	6
D	1	5	6	12
E	0	7	4	11
F	0	6	4	10
G	0	2	5	7
H	2	1	3	6
I	1	3	6	10
J	1	3	6	10
All teachers	12	31	53	96
<i>Percent</i>	<i>12.5</i>	<i>32.3</i>	<i>55.2</i>	<i>100.0</i>

The alternative was situations where students worked individually and where information was given to the class as a whole. Some examples from the lesson plans:

- Class observes a puddle of water on the playground
- Look over booklets and pamphlets provided by the teacher
- Some teachers write about where they would designate placement of symbols on a map or they do the talking about solids, liquids, and gases.

How would you evaluate the students' understanding of the lesson?

The last question on the Teacher Profile Unit Teaching Plans addressed how teachers would evaluate student performance in their lesson. In the eMINTS project, scoring guides are the preferred way to evaluate activities in a unit. Ideally, these scoring guides are shared with the students before they begin the task and are used as a guide for the student work. Sometimes the lessons revealed that scoring guides were used but not shared with the student, however, in most lessons a scoring guide was not used. Table 5 shows the distribution of the use of scoring guides.

Table 6
Teacher Profile Unit Teaching Plans, by Use of Constructivist Keywords,
 FY01 Teachers

Cluster	Yes	No	All teachers
A	9	6	15
B	5	4	9
C	2	4	6
D	3	9	12
E	2	9	11
F	4	6	10
G	2	5	7
H	0	6	6
I	4	6	10
J	0	10	10
All teachers	31	65	96
<i>Percent</i>	<i>32.3</i>	<i>67.7</i>	<i>100.0</i>

Use of Constructivist Keywords

One of the on-going concerns of the eMINTS project is to document teachers' understanding and use of constructivist philosophy and techniques. One way of assessing teacher orientation towards constructivism is by considering their use of a set of key terms. In the lesson described in the Unit Teaching Plans use of these words, asking students to justify, classify, predict and analyze, suggests that teachers are comfortable constructing lessons that conform to constructivist principles.

The distribution of unit descriptions that use constructivist keywords is presented in Table 6. Less than one-third of all FY01 teachers used these words in their descriptions.

These results support one of the findings from *eMINTS Survey Report #1*. In the analysis of results from the SCR*TEC profiler, FY01 teachers were less familiar with constructivist teaching methods than FY00 teachers. In each year, information about teacher familiarity with constructivist methods was collected during the eMINTS kickoff, so these data were collected before teachers received any eMINTS training.

Summary

The data from the Teacher Unit Teaching Plans provides a baseline indicator of teaching preferences for the FY01 teachers. Several general findings can be taken from these responses.

First, over three-quarters of all teachers proposed activities that employed at least some inquiry-based teaching techniques. The remaining teachers enter the eMINTS program with the expectation that they will learn how to implement inquiry-based methods.

Fewer than 9 percent of the teachers proposed beginning their lesson with a lecture or a teacher-led demonstration. Those teachers who began their lesson with a student-centered activity were about equally divided between those who proposed an activity and those who proposed a student-centered discussion.

However, slightly more than half of all teachers proposed cooperative work activities over whole-class activities.

When it came to evaluation, fewer than half of all teachers planned on using a rubric or scoring guide in their lessons, and only 12.5 percent proposed sharing their rubrics with students.

These findings suggest that the FY01 teachers believe they should be using inquiry-based and active teaching strategies, but few seem to know how to implement them. This is generally consistent with other survey results, which suggest that FY01 teachers are less experienced in using inquiry-based techniques in their day-to-day teaching when compared to the FY00 teachers.