Disciplinary Integration in the Fifth Grade *Everyday Mathematics* Textbook

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Integration in *Everyday Mathematics*
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**Research Question**
How is mathematics integrated in different content areas in a fifth grade math textbook?

**Literature Review**
- Czerniak, Weber, Sandmann, and Ahern (1995) found that due to the lack of a common definition of integration, there is no baseline for analyzing data.
- Kiray’s (2012) Balanced Model utilized constructivist learning using seven levels of integration. Students who were taught an integrated lesson performed better when asked mathematics-science related questions.

**Methodology**
- Content-analyzed 5th Grade Everyday Mathematics book focusing on quality, quantity, and type of integration.
  - **Quality:** How does integration enhance the lesson?
  - **Quantity:** How often are integration techniques used?
  - **Type:** How are disciplines being integrated?

**Results and Data Analysis**

- **Mathematics and Science**
  - Kiray’s (2012) Balanced model is the most commonly used mathematics and science integration technique.
  - The lessons are still very mathematics centered, with science concepts used only to enhance the mathematics skills.
  - Science concepts are rarely assessed.

- **Mathematics and ELL**
  - Every unit has at least one differentiation technique for ELL (e.g., Word Banks, Venn diagrams) and the lessons that do are usually very vocabulary heavy.
  - Integration techniques were found in student practice and instructional materials, not assessment.

- **Mathematics and Literacy**
  - As students progress through EM, a stronger emphasis is placed on mathematizing read-alouds.
  - Connecting mathematics and literature is another technique that improves ELL comprehension.

**Conclusion**
- Integration techniques were found in student practice, mathematics centered and science assisted, and help students make connections between subjects (see Figure 1)

- EM values mathematics over a balanced mathematics-science lesson. Assessing both disciplines improve student comprehension.

- Creating lessons that are accessible for ELL is highly valued. This was by far, the most common form of integration found throughout EM.

- There are some social studies and art connections presented in EM, but little research could be found to verify the effectiveness of these connections.

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*Figure 1: Results and Data Analysis Word Cloud*