**Curriculum Project: Field Experience Reflective Journal**

**Title:** Enhancing Division and Multi-Step Problem-Solving in Special Education

**Candidate:** Emmanuel Yaw Gyimah
**School Setting:** The College School
**Grade Level:** 6th Grade
**Focus Area:** Mathematics – Division and Multi-Step Problem-Solving
**Field Experience Duration:** September – December 2024

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### Reflective Journal Overview

This reflective journal documents the planning, implementation, and improvements made during a targeted intervention program for a 6th-grade student receiving special education services in mathematics. The journal highlights key learning experiences, instructional strategies, student progress, and professional reflections on effective pedagogical approaches.

# Week 1: Initial Observations & Goal Setting

### Observations:

- Luke, the student, demonstrates strengths in basic arithmetic but struggles with division fluency and multi-step problem-solving.
- Heavy reliance on visual aids and teacher prompts impacts independent problem-solving skills.
- Initial assessment places Luke at 70% accuracy in division but only 30% in explaining his reasoning.

### Plan for the Week:

- Establish a supportive learning environment.
- Conduct diagnostic assessments to identify specific areas of need.
- Set initial learning goals with Luke, emphasizing structured problem-solving.

### Reflections & Adjustments:

- Luke showed enthusiasm but lacked confidence in articulating steps.
- Decided to introduce aviation-themed visual aids to reinforce engagement and structure problem-solving steps.

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# Week 2: Implementing Structured Strategies

### Lesson Implementation:

- **Aeroplane-Based Learning Approach:**
  - Visualized division problems using aeroplane fuel distribution and passenger seating arrangements.
  - Integrated manipulatives and number lines for conceptual understanding.
- Modeled problem-solving through step-by-step breakdowns.

### Student Response & Adjustments:

- Luke responded positively but required additional reinforcement in recognizing key elements of problems.
- Added peer modeling to increase engagement and provide collaborative learning opportunities.
- Adjusted the lesson pacing to include more guided practice before independent work.

### Reflection:

- Thematic learning kept Luke engaged and motivated.
- Need to incorporate more verbal reflection and problem-solving checklists.

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## Week 3-4: Scaffolding & Increasing Independence

### Intervention Activities:

- Conducted biweekly quizzes to track progress.
- Incorporated math journaling for self-reflection on problem-solving steps.
- Encouraged verbal explanations before solving problems.
- Began fading prompts, allowing Luke to take more ownership of his work.

### Progress Noted:

- Increased accuracy from 70% to 80% in weekly quizzes.
- More willingness to attempt problems independently.
- Demonstrated improved reasoning but still hesitant with multi-step problems.

### Reflections & Adjustments:

- Identified a need for additional real-life applications to solidify understanding.
- Introduced word problems related to daily activities (e.g., flight planning, seating charts).
- Encouraged group problem-solving activities to foster peer support.

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# Week 5-7: Encouraging Self-Monitoring & Confidence Building

### Instructional Focus:

- Introduced a **self-monitoring checklist** for problem-solving.
- Continued use of visual aids but reduced dependency by prompting mental visualization.
- Provided immediate verbal praise and constructive feedback.

### Reflections on Effectiveness:

- Student engagement increased with real-life examples.
- Confidence improved when Luke explained strategies to peers.
- Luke's post-test accuracy improved to 85%, showing significant growth.
- Need for continued reinforcement in checking work for errors.

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# Final Reflections & Recommendations

### Overall Growth & Successes:

- Luke demonstrated a remarkable transformation from a hesitant learner to a more independent problem-solver.
- The aviation-themed approach proved to be an effective tool in helping him structure mathematical reasoning.
- Self-reflection through journaling enhanced his metacognitive awareness of problem-solving strategies.

### Challenges & Future Adjustments:

- Multi-step problems still require structured practice to build automaticity.
- Peer collaboration and small group problem-solving could further strengthen independent thinking.
- Encouraging more family involvement in math-related activities at home may sustain progress.

### Professional Insights:

- Scaffolding remains crucial in special education instruction, but gradual release fosters independence.
- Real-life application enhances engagement and comprehension.
- A reflective teaching approach allows for ongoing adjustments to meet student needs effectively.

## Conclusion

This field experience reinforced the importance of structured interventions, targeted strategies, and student-centered approaches in special education mathematics instruction. Through ongoing reflection and adaptation, I have gained valuable insights into designing impactful lessons that cater to diverse learning needs while fostering confidence and independence in problem-solving.