Instructional Design Project

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ETEC 6440: Instructional Design II

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Project Title

4th-Grade Math Training Platform for Parents

Step 1: Identify Instructional Goal(s)

The problem this 4th-grade math training platform aims to address is the knowledge and confidence gap that many parents experience when helping their children with math homework. Many parents struggle to understand modern math teaching methods, leading to frustration, ineffective support, and confusion for both the parent and the child.

Key Issues:

1. Lack of Familiarity with Modern Teaching Methods – Many parents learned math differently and are unfamiliar with current problem-solving strategies like number sense, visual models, and conceptual reasoning.
2. Difficulty in Explaining Concepts – Even when parents understand math, they may struggle to explain it in a way that aligns with their child's learning process.
3. Time Constraints – Busy parents may not have time to research or prepare effective lessons to assist their children.
4. Student Frustration & Anxiety – When parents and children struggle together, it can lead to frustration, loss of confidence, and negative attitudes toward math.
5. Lack of Structured Guidance – Parents may not know which topics to focus on, how to track progress, or how to use effective teaching strategies.

How This Platform Solves the Problem:

- Structured Learning Modules – Step-by-step lessons that align with 4th-grade math standards.
- Parent-Friendly Explanations – Clear, simple breakdowns of key concepts with real-world examples.
- Interactive Tools & Assessments – Quizzes, worksheets, and activities to reinforce learning.
- Guided Lesson Plans – Ready-made lesson plans to help parents teach effectively.
- Confidence-Building Resources – Tips for making math fun and reducing anxiety in children.

By providing structured, easy-to-understand resources, this platform empowers parents to support their child's math learning with confidence, ensuring a smoother and more effective learning experience.

Instructional Goal

- Parents will confidently support their 4th-grade children in understanding math concepts, applying problem-solving strategies, and developing independent thinking skills while completing homework.

General Overview of the Learners, Contexts, and Tools

Intended Audience:

- The primary learners are parents and caregivers of 4th-grade students who need guidance in helping their children with math homework. They may come from diverse educational backgrounds, with varying levels of comfort and experience with math. While some parents may have strong math skills, others may struggle with modern teaching methods or problem-solving approaches. The platform is designed for those who want structured support to confidently explain math concepts and guide their children effectively.

Learning Environment:

- Parents will use this platform in a home setting, often while assisting their children with homework or preparing to teach a math concept. Learning may take place at a kitchen table, a study area, or anywhere parents and children work together. Since parents are balancing multiple responsibilities, the platform is designed for flexibility, allowing them to access lessons and tools as needed—whether in short sessions or as a structured learning plan.

Required Tools:
To effectively use the platform, parents will need:

- A Computer, Tablet, or Smartphone – To access digital lesson plans, videos, and interactive tools.
- Internet Connection – For accessing online resources, downloadable materials, and interactive content.
- Printable Worksheets & Activities – For hands-on practice with their child.
- Basic Math Supplies – Pencil, paper, ruler, and possibly a whiteboard for visual explanations.
- Engagement Tools (optional) – Manipulatives like number blocks, flashcards, or online math games to reinforce learning.

By providing structured guidance and accessible tools, the platform empowers parents to create a supportive and effective learning environment for their children.

Step 2: Conduct Instructional Analysis

Analysis of Instructional Goal: Guiding 4th Grade Students in Math

Learning Domain:

- The instructional goal falls under the Cognitive Domain — specifically focusing on comprehension, application, and problem-solving. Parents are expected to understand math concepts, apply effective teaching strategies, and guide their children toward independent thinking.

Step-by-Step Breakdown of the Instructional Goal:

Main Steps to Perform the Goal:

1. Understand the Math Concept

- Review the specific 4th-grade math topic (e.g., fractions, division, place value).
- Identify the key vocabulary and methods being taught.

2. Explain the Concept Clearly

- Break the concept into simple steps.
- Use real-world examples or visual aids to illustrate ideas.
- Check for understanding by asking the child to restate the concept.

3. Model Problem-Solving Strategies

- Demonstrate how to solve a sample problem step by step.
- Show multiple strategies if applicable (e.g., number lines, arrays, or equations).
- Use math language and encourage the child to follow along.

4. Guide the Child Through Practice

- Provide a practice problem and work through it together.
- Ask guiding questions like, “What should we do first?” or “Why did you choose that method?”
- Give feedback, correcting mistakes without taking over.

5. Encourage Independent Thinking

- Let the child attempt the next problem on their own.
- Offer hints instead of direct answers if they struggle.
- Ask reflective questions: “How did you figure that out?” or “Can you explain your thinking?”

6. Review and Reinforce

- Review the completed work together.
- Discuss errors calmly and ask the child to reattempt corrections.
- Praise effort, progress, and problem-solving strategies rather than just correct answers.

Subordinate and Entry Skills

<u>Step Selection: Step 3:</u> "Model Problem-Solving Strategies"

This step involves demonstrating how to solve a math problem using effective strategies that align with the child's learning process.

Breakdown of Subordinate and Entry Skills

Entry Skills (Prior Knowledge Required by Parents):

Before effectively modeling problem-solving strategies, parents should:

- **Understand basic 4th-grade math concepts** (e.g., place value, multiplication, fractions).
- **Be familiar with common problem-solving approaches** (e.g., drawing models, using number lines, breaking down multi-step problems).
- **Have the ability to explain math concepts in simple terms.**
- **Demonstrate patience and encouragement** while guiding a child.

Subordinate Skills Breakdown

1. Identify the Best Strategy for the Problem

- Recognize the type of problem (e.g., addition, fractions, word problems).
- Choose an appropriate strategy (e.g., visual model, algorithm, estimation).

2. Demonstrate the Steps to Solve the Problem

- Break down the solution into logical steps.
- Solve the problem while verbalizing the thought process.
- Use math vocabulary (e.g., "denominator," "quotient," "regroup").

3. Use Visuals or Manipulatives for Clarity

- Draw number lines, fraction bars, or area models if needed.
- Show different ways to solve (e.g., traditional and alternative methods).

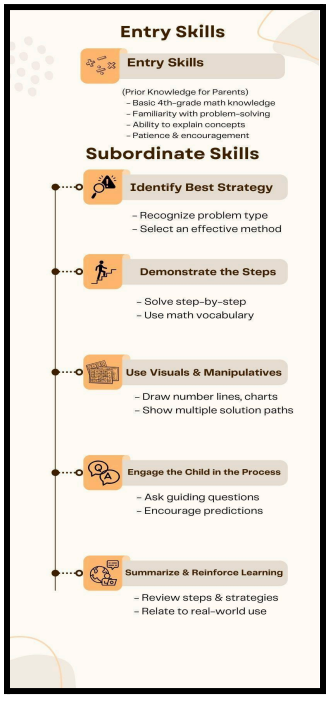
4. Engage the Child in the Process

- Ask guiding questions: *"What should we do first?"* or *"Does this answer make sense?"*
- Encourage the child to predict the next step.
- Reinforce confidence by acknowledging correct reasoning.

5. Summarize and Reinforce Learning

- Recap key steps and strategies used.
- Relate the problem-solving approach to real-life situations.
- Encourage the child to try a similar problem independently.

Diagram: Entry & Subordinate Skills



This structured breakdown ensures parents can effectively **model problem-solving** in a way that builds their child's confidence and understanding.

Step 3: Analyze Learners and Contexts

Target Population and Performance Setting

Target Population (Learner Analysis)

The primary learners are parents and caregivers of 4th-grade students who require structured guidance in helping their children with math homework. This population is diverse in several ways:

- **Educational Backgrounds:**
  - Some parents have strong math skills and formal education.
  - Others have basic education and may struggle with math concepts.
  - Some parents may not be familiar with modern teaching strategies.
- **Language Proficiency:**
  - Some parents may not speak English as their first language.
  - Language barriers could impact their ability to understand instructions and math terminology.
- **Accessibility Needs:**
  - At least one family has a member who is deaf or hard of hearing.
  - Some parents may require alternative learning formats (e.g., captions, transcripts, or ASL resources).
- **Cultural Backgrounds:**
  - Learners come from different cultural backgrounds with varying expectations for education and parental involvement.
  - Some parents may value direct instruction, while others may prefer exploratory learning approaches.
- **Attitudes Toward Math:**
  - Some parents feel confident in helping their children with math.
  - Others may experience math anxiety or lack confidence in their ability to teach concepts effectively.

Performance Environment (Where Parents Apply Their Learning)

- Parents will apply what they learn in a **home setting**, where distractions such as household responsibilities and other children may be present.
- Parents will be working with their children on **real-world math problems** from homework assignments, school projects, and everyday situations.
- The need for **flexible, on-demand learning** is crucial, as parents may have limited time due to work and other responsibilities.

Learning Environment (Resources and Tools Available)

The platform will offer structured training modules with:

- **Multimodal Learning Resources:**
  - Written explanations and step-by-step guides.
  - Video tutorials with captions and transcripts.
  - Interactive tools, such as visual manipulatives and problem-solving activities.
- **Support for Diverse Learners:**
  - Content available in multiple languages or with translation tools.
  - Accessibility features like screen reader compatibility and ASL support.
- **Practice Opportunities:**
  - Quizzes and self-assessments to reinforce learning.
  - Sample problems with guided and independent practice sections.
- **Community and Support:**
  - Discussion forums or Q&A sections where parents can ask questions.
  - Live or recorded sessions with educators to address common challenges.

This environment ensures that parents receive **structured, clear, and accessible** instruction, empowering them to confidently guide their children in math learning.

🔹 **Stop here for your Analysis Report**

Step 4: Write Performance Objectives

Terminal Objective and Subordinate Objectives

Terminal Objective

Given structured training modules, lesson plans, and interactive tools (CN), parents will confidently support their 4th-grade children in understanding math concepts, applying problem-solving strategies, and fostering independent thinking skills while completing homework, as demonstrated by their ability to guide their child through math exercises (B) with 90% accuracy and minimal external assistance(CR).

Subordinate Objectives (Performance Objectives & Learning Outcomes)

1. Understanding and Explaining Math Concepts

- Given lesson plans, example problems, and instructional videos, parents will accurately explain key 4th-grade math concepts (e.g., multiplication, fractions, decimals, word problems) using step-by-step breakdowns. Parents will correctly explain concepts and terminology in 90% of practice exercises.

2. Applying Problem-Solving Strategies

- Given interactive tools (e.g., visual aids, number lines, manipulatives) and structured practice problems, parents will demonstrate problem-solving strategies such as breaking problems into smaller steps, using visuals, and checking for errors. Parents will apply at least two problem-solving strategies correctly in 8 out of 10 exercises.

3. Encouraging Independent Thinking

- Given sample dialogue prompts and coaching techniques, parents will foster their child's independent thinking by asking guiding questions and encouraging self-explanation instead of providing direct answers. Parents will successfully encourage independent thinking in at least 80% of interactions, as measured by structured self-assessments or observation checklists.

4. Providing Constructive Feedback and Encouragement

- Given modeled examples of effective feedback and motivation techniques, parents will provide constructive feedback and encouragement to help their child build confidence in math. Parents will demonstrate effective feedback techniques in at least 90% of practice scenarios.

5. Navigating the Training Platform and Utilizing Resources

- Given guided tutorials and walkthroughs of the platform's features, parents will effectively navigate the training platform, locate lesson materials, and use interactive tools to enhance learning. Parents will complete a platform navigation task with 100% accuracy.

Step 5: Develop Assessment Instruments

Assessment Instruments

To ensure parents effectively support their 4th-grade children in math, a variety of assessments will be used. These assessments measure parents' understanding of math concepts, problem-solving strategies, and their ability to foster independent thinking in their children.

1. Entry Skills Test (Diagnostic Assessment)

Purpose:

- Assesses parents' initial knowledge of 4th-grade math concepts.
- Identifies gaps in problem-solving strategies and teaching methods.

Format:

- Multiple-choice and short-answer questions about core math topics (place value, fractions, multiplication, division).
- Scenario-based questions (e.g., *"How would you explain a fraction using everyday objects?"*).
- Self-assessment questionnaire (e.g., *"How confident do you feel explaining multi-step word problems?"*).

2. Pretest (Before Instruction)

Purpose:

- Measures parents' ability to guide children in solving math problems before engaging in the instructional program.

Format:

- 10-15 questions covering:
    - Identifying fractions, decimals, and whole numbers.
    - Solving basic word problems.
    - Identifying common student misconceptions in math.

Example Question:
"Your child is struggling to understand why 3/4 is greater than 2/5. How would you explain this concept in a way they understand?"

3. Practice Tests (Formative Assessment)

Purpose:

- Provides ongoing feedback to parents as they engage in instructional activities.
- Helps parents refine their approach to teaching math concepts.

Format:

- **Interactive quizzes** embedded in training modules.
- **Parent-child activity logs** where parents reflect on teaching strategies.
- **Guided practice worksheets** with sample problems and suggested prompts for parents to use.

Example Activity:

- **Drag-and-Drop Fractions Game**: Parents match fractions with real-world objects (e.g., ½ a sandwich, ¾ of a pizza).

- **Parent Coaching Reflection**: After completing a lesson, parents answer, *"What questions did your child ask? How did you respond?"*

4. Posttest (Summative Assessment)

Purpose:

- Measures parents' progress in explaining math concepts, applying problem-solving strategies, and fostering independent thinking.

Format:

- **Scenario-based problem-solving**: Parents are given a child's incorrect math response and asked to guide them toward the correct solution.
- **Multiple-choice test** on key math concepts and teaching strategies.
- **Parent-child math session evaluation**: Parents reflect on their instructional approach.

Example Scenario:
"Your child insists that 4 × 3 = 7. What step-by-step approach would you take to help them self-correct?"

5. Rubrics and Grading Criteria

Rubrics will be used to evaluate how well parents support their children in learning math concepts.

Parent Coaching Rubric

Criteria	4 (Excellent)	3 (Good)	2 (Needs Improvement)	1 (Minimal Support)
Encouraging Independent Thinking	Asks open-ended questions, lets child explore solutions	Asks guiding questions but sometimes gives answers	Gives direct answers without fostering thinking	Little engagement, does not encourage self-thinking
Problem Explanation	Uses real-life examples and clear steps	Provides steps but lacks	Explanation is unclear	Does not attempt explanation

		real-world connections		
Engagement & Support	Actively listens, provides feedback, and encourages effort	Listens and responds but with minimal feedback	Limited interaction	Passive, minimal involvement

Math Problem-Solving Rubric

Criteria	4 (Excellent)	3 (Good)	2 (Needs Improvement)	1 (Minimal Understanding)
Identifies Key Concepts	Correctly identifies and explains the concept	Identifies concept but explanation is unclear	Partially understands the concept	Incorrect understanding
Applies Problem-Solving Strategies	Uses appropriate strategies and adjusts when needed	Uses appropriate strategies with minimal adjustments	Uses ineffective strategies	No strategy applied
Supports Child's Learning Process	Encourages exploration and asks reflective questions	Provides support but does not encourage deeper thinking	Gives answers without explanation	Does not engage in problem-solving process

Assessment Artifacts

To provide tangible assessment tools, the following artifacts will be developed:

- **Entry Skills Test (Google Form or Printable Quiz)** – Includes baseline math knowledge questions and a self-reflection survey for parents.
- **Scenario-Based Pretest (PDF or LMS Quiz)** – Parents respond to real-life tutoring scenarios, analyzing how they would help their child solve problems.
- **Guided Practice Worksheets (Printable PDF & Interactive Tool)** – Parents and children solve problems together, documenting their thought process.
- **Parent-Child Activity Log (Google Doc or Journal Template)** – Parents document their coaching strategies and reflect on challenges/successes.
- **Final Assessment & Reflection (Google Form or Discussion Board Submission)** – Parents take a posttest and reflect on how their approach to teaching math has evolved.

Step 6: Develop Instructional Strategy

This strategy ensures that parents can confidently support their children in understanding math concepts, applying problem-solving strategies, and fostering independent thinking.

Pre Instructional Activities

Component	Description
Introduction to the Course	Parents receive an overview of the course, including learning objectives, structure, and expected outcomes.
Motivation & Relevance	A short video or interactive scenario explains why parental involvement in math learning is crucial for student success.
Pre-Assessment	Parents complete an Entry Skills Test and a Pretest to gauge their confidence and current understanding of 4th-grade math concepts.
Orientation to Resources	Parents explore the learning platform (LMS) and are introduced to available tools (quizzes, videos, discussion forums, interactive exercises).

Presentation of Information

Component	Description
Module Introduction	Each module begins with a real-world scenario (e.g., splitting a pizza to introduce fractions).

Concept Explanation	Step-by-step breakdown of the math concept, using visuals, animations, and examples relevant to parents' daily life.
Modeling Problem-Solving	Guided demonstrations where a teacher explains problem-solving techniques, emphasizing how parents can guide their children.
Interactive Media	Parents engage with interactive activities such as fraction-matching games, number line simulations, and video tutorials.
Guided Practice	Sample math problems with guided prompts help parents practice explaining concepts before assisting their child.

Learner Participation

Component	Description
Discussion Boards	Parents engage in discussion forums to share experiences, ask questions, and receive peer support.
Parent-Child Activities	Parents complete hands-on activities with their child, such as using everyday objects (coins, food, etc.) to demonstrate math concepts.
Problem-Solving Challenges	Parents are given scenarios where they must identify student misconceptions and provide correct guidance.
Reflection Logs	Parents document their approach and challenges in guiding their child through math problems.
Self-Check Quizzes	Short, interactive quizzes allow parents to assess their own understanding before working with their child.

Assessment

Component	Description
Practice Tests	Embedded quizzes and exercises after each module to reinforce learning.
Scenario-Based Assessments	Parents analyze a student's incorrect response and explain how they would guide them toward the correct answer.

Parent-Child Observations	Parents complete an activity with their child and reflect on their child's engagement and understanding.
Posttest	A final assessment measuring parents' ability to explain math concepts, guide problem-solving, and foster independent thinking.
Rubrics for Parent Coaching	Parents receive feedback based on engagement, questioning strategies, and ability to foster independent thinking.

Follow-Through Activities

Component	Description
Reflection & Goal-Setting	Parents reflect on their growth and set goals for continued math support at home.
Extended Practice	Optional advanced modules provide additional strategies for parents seeking more in-depth guidance.
Resource Toolkit	Parents receive downloadable tip sheets, math games, and problem-solving guides to use with their child.
Community Engagement	Ongoing access to discussion forums, webinars, and support groups to sustain learning.
Feedback Survey	Parents complete a final survey to provide feedback on the course and suggest improvements.

Storyboard

Click on the Storyboard Slide to access.

- **Stop here for your Design and Storyboard**

Step 7: Develop & Select Instructional Materials

1. Types of Instructional Materials

- Videos: Short, engaging explanations of key math concepts with real-world examples.
- Interactive Activities: Online quizzes, drag-and-drop exercises, and virtual manipulatives (e.g., base ten blocks, number lines, area models. geoboards).
- Case Studies: Real-life math problem scenarios parents can solve with their children.
- Printable Worksheets: Practice problems with step-by-step solutions.
- Guided Lesson Plans: Structured teaching guides for parents.
- Infographics & Charts: Visual aids for concepts like fractions, decimals, and multiplication strategies.

2. Rationale for Material Selection

- Aligns with Learning Strategies: Supports direct instruction, guided practice, and independent problem-solving.
- Engagement & Retention: Interactive elements enhance interest and comprehension.
- Accessibility & Inclusivity: Meets UDL (Universal Design for Learning) principles for diverse learning styles.
- Parent-Friendly: Designed for non-experts, providing clear guidance and support.

3. Learning/Performance Objectives

- Identify different strategies for solving multiplication problems.
- Describe how fractions can represent parts of a whole.
- Explain the steps for solving word problems.
- Demonstrate how to use number lines to solve addition and subtraction problems.

4. Navigation & User Experience

- Content is well-organized with clear instructions.
- An intuitive menu and navigation bar for easy access.
- Application of UDL best practices, offering multiple access formats (text, visuals, audio).
- All links, videos, and interactive elements function correctly.

5. Assessment Instruments

- Formative Assessments: Quick self-check quizzes with instant feedback.
- Summative Assessments: Detailed tests measuring mastery of concepts.
- Performance-Based Tasks: Real-world application problems that encourage critical thinking.
- Rubrics: Clear scoring guides for assessing understanding.

6. Strategic Use of Visual/Graphic/Audio/Video Elements

- High-quality images, diagrams, and videos.
- Visuals simplify complex concepts and reduce cognitive load.
- Audio explanations cater to different learning preferences.

7. Digital Accessibility & Cultural Awareness

- Materials comply with WCAG accessibility standards (alt text for images, captions for videos).
- Representation of diverse cultures and perspectives in examples and visuals.
- Inclusive language to ensure all families feel represented.

8. Copyright & Best Practices

- Use of Creative Commons resources where applicable.
- Proper citation of sources for borrowed materials.
- Ensuring original content adheres to copyright laws.

This structured approach ensures the instructional materials are effective, accessible, and aligned with the Dick and Carey model.

🔹 **Stop here for your Development**

Step 8: Formative Evaluation

Implement (Project URL)

- 4th Grade Math Homework - Parent Resource

Formative Evaluation Report

1. Evaluation Methods & Materials

One-to-One Evaluation: Two subject matter experts participated in individual sessions to interact with the instructional website. They were asked to navigate through lessons, quizzes, and video content while providing think-aloud feedback. I observed how they interpreted instructions, accessed resources, and responded to the clarity of math explanations.

Small-Group Evaluation: A small group of 4 parents (part of the 7 total parent respondents) explored the platform together during our Open House school event. They tested key features like the virtual manipulative tool, student quizzes, and lesson explanations. I observed areas where they collaborated, expressed confusion, or showed enthusiasm. Post-session, they completed the parent survey.

Field Trial – Option 1 (Reflective Summary): I have planned a broader field trial where the site will be used across multiple weeks during students' homework routines. Although not yet implemented, I expect to gather both usage analytics and qualitative feedback from parents post-use via a Google Form. Based on the small-group responses, I anticipate high engagement with visual and manipulative tools, and plan to pay close attention to content accessibility and ease of navigation during the trial.

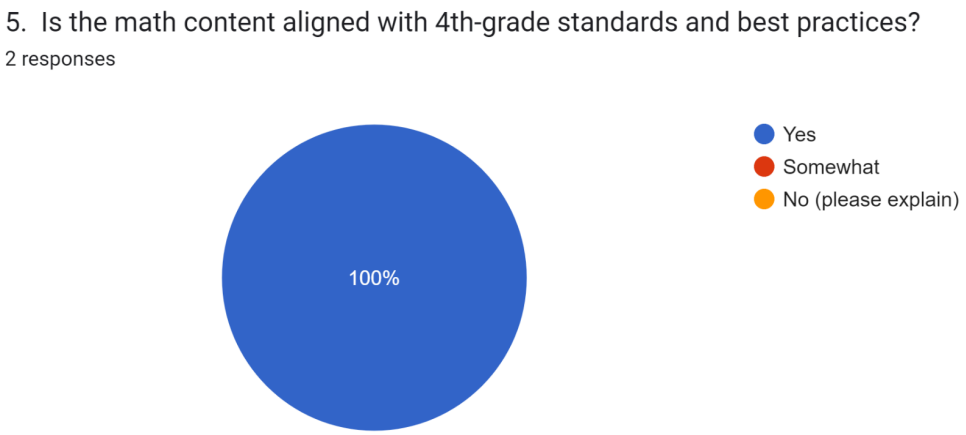
Materials/Tools Used:

- Parent survey (Likert-scale and open-ended items)
- Expert reviewer (Checklist and open-ended items)
- Observation notes
- Direct interaction during our Open House event

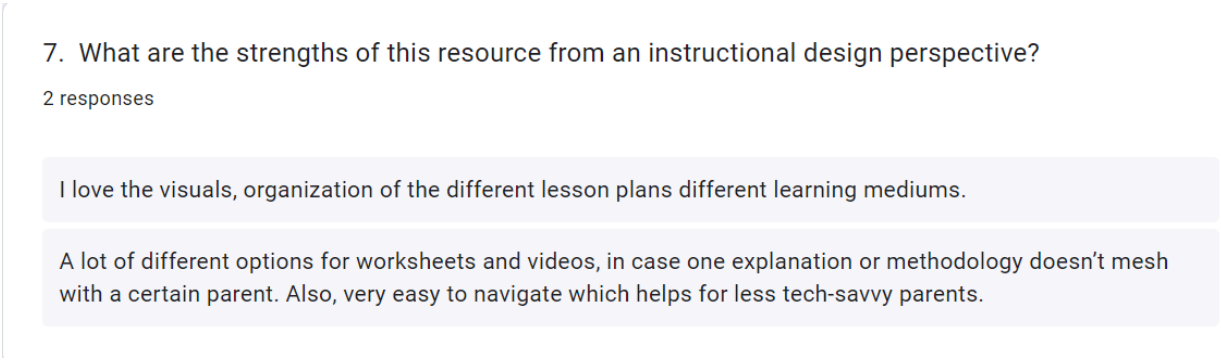
2. Data Collected

Expert Reviewers (2 Total):

- Both experts found the instructional design appropriate and the content aligned with 4th-grade math standards.



- Strengths included visual clarity, multiple learning mediums, and ease of navigation.



- Suggested improvements:
    - Add drop-down menus for cleaner design.
    - Consider rephrasing support language to reduce potential defensiveness.
    - Include review content from 3rd-grade math for added context.

8. What revisions or enhancements would you suggest to better support parents and student learning?

2 responses

Maybe adding drop down menus that can open and close.

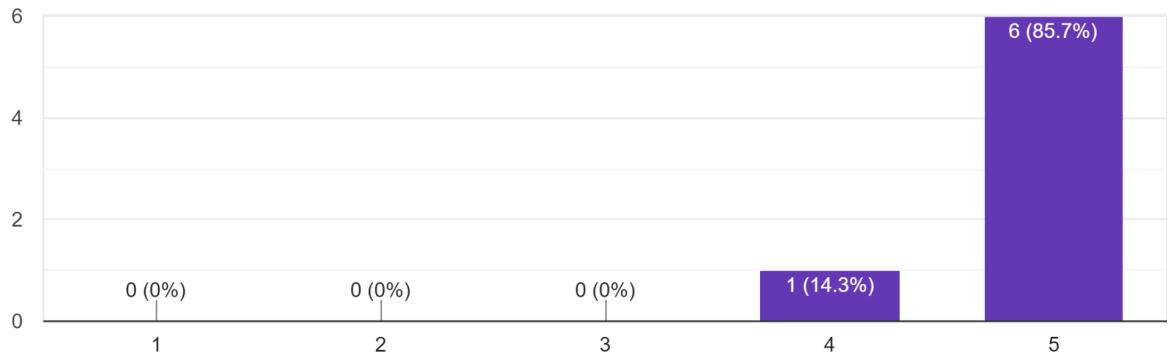
Not necessary, but perhaps a short review of 3rd grade or prior math subjects just in case of a parent who hasn't practiced math in a very long time. Also, language such as "Significant support needed in understanding 4th-grade math" might put some parents off, due to their ego regardless of if they need support or not. Maybe a simple "review" instead of "support" to suggest they may already know the content and simply need a refresher, to engage more parents overall.

Parent Feedback (7 Responses):

- **Overall Satisfaction:** All rated the resource 4 or 5 (Very Satisfied)

1. Rate your overall satisfaction with the website (1 = Not satisfied at all - 5 = Very Satisfied)

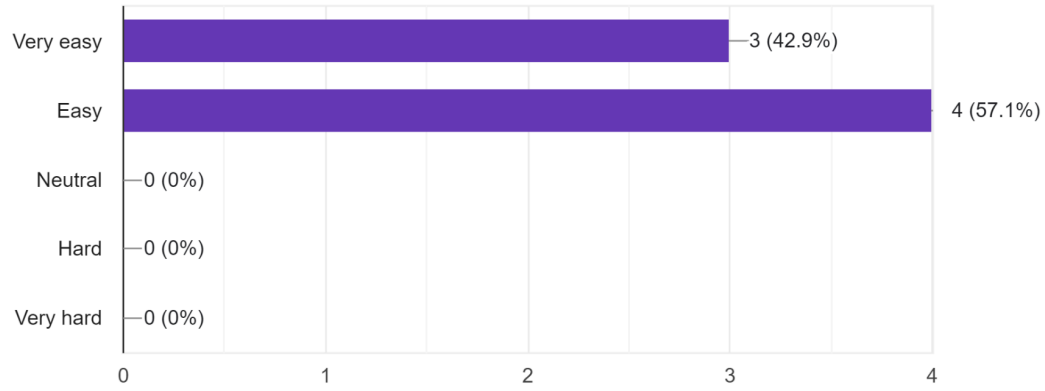
7 responses



- **Navigation:** All found the site easy or very easy to use.

3. Was the layout and navigation easy to use?

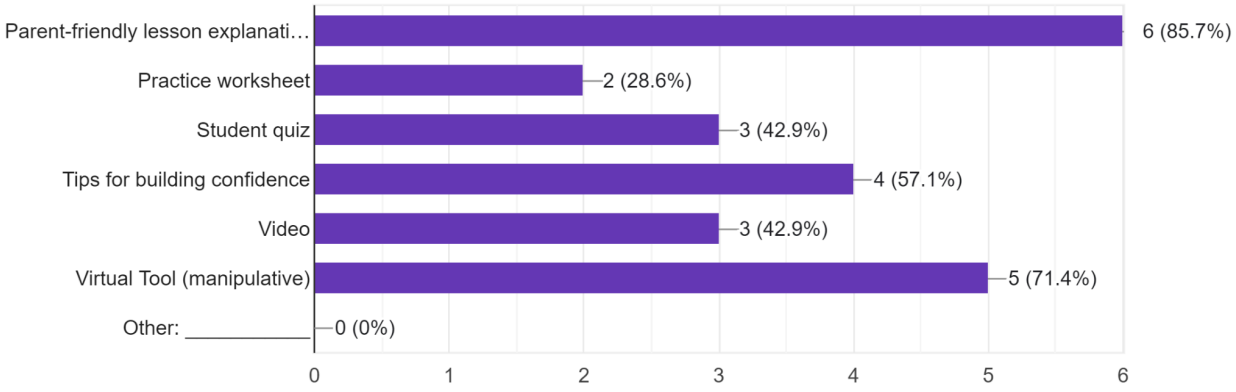
7 responses



- **Features Used:** Parent-friendly explanations, virtual tools, quizzes, and videos were the most accessed.

2. Which of the following features did you use?

7 responses



- **Suggestions for Improvement:**
    - Add interactive quizzes and learning games
    - Offer more videos
    - Translate content into Spanish for accessibility

Visual Summary (Table Sample):

Feature Liked Most	Suggested Improvement	Recommendation Likelihood
Virtual Tool, Videos	More videos, games, Spanish content	Most rated 5 (Very Likely)

3. Revision Plan

Strengths:

- Clear layout and navigation
- High satisfaction among parents
- Effective use of visual aids and variety of media
- Strong alignment with math standards confirmed by expert reviewers

Areas for Revision:

- Add dropdown menus or collapsible sections to reduce information overload
- Rephrase “support needed” language to “optional review” or “refresh”
- Expand Spanish-language content to support multilingual families

- Develop a short set of 3rd-grade review lessons as optional preparation
- Increase number of interactive activities and short video tutorials

These revisions will enhance the platform's inclusiveness, engagement, and clarity, ultimately making it more effective for both parents and students.

Step 9: Revise & Summative Evaluation

Revise Instruction

Summary of Revisions Based on Formative Evaluation Feedback:

After receiving formative evaluation feedback, I made the following revisions to my parent-facing instructional website:

- Clarified instructions in several lessons to make parent support more explicit.
- Added headings and visual markers to improve the organization and flow of activities.
- Adjusted some vocabulary in the "Tips for Parents" sections to be even more parent-friendly and accessible.
- Embedded additional examples and explanations for a few math strategies where parents requested more clarity.

Summative Evaluation – Expert Judgment Phase

Purpose of Summative Evaluation:

The main purpose of a summative evaluation is to determine the overall effectiveness, quality, and usability of an instructional product after its development is complete. It helps identify whether the instruction achieves its intended goals and highlights any final improvements needed before full implementation. In this case, the expert judgment phase focuses on collecting feedback from subject matter experts to ensure the design and content meet high standards.

Summary of Expert Judgment Evaluation:

An expert in elementary math education reviewed the parent website and overall platform. They provided the following feedback:

- The resource is a strong support for parents to understand math concepts and offers valuable student practice.
- It was suggested that this platform could be introduced at Back to School Night or shared across the entire 4th-grade level for broader impact.

- The organization of videos, virtual manipulatives, and materials was praised for being clear and intuitive.

The expert recommended:

- Adding a direct video link in the lesson plan so parents can quickly access demonstrations of activities.
- Double-checking the "Tips for Parents" section to ensure that any references to additional resources are properly linked.
- Creating a short tutorial video for parents to help them learn how to navigate and use the website more easily.

Recommendations for Improvement:

- Insert direct links to demonstration videos within the lesson plans for easier parent access.
- Review and update the "Tips for Parents" section to verify that all links and references are complete and functional.
- Develop a brief, user-friendly tutorial video that walks parents through the main features of the website and how to access materials and activities.
- Consider planning a live or virtual presentation (e.g., during Back to School Night) to introduce parents to the platform and model its use.

🔹 **Stop here for your Implement and Evaluate**

Final Project

Final Reflection

Engaging in the full instructional design process using the **Dick and Carey Model** was a deeply meaningful and growth-filled experience. This model offered a structured, systems-oriented framework that guided me through every phase of the project—from identifying instructional goals to evaluating the effectiveness of the final product. What stood out most was how each step was interconnected; decisions made early in the process directly influenced later design choices, reinforcing the importance of thorough planning and alignment with learning objectives.

One of the most beneficial aspects was conducting the **instructional analysis**. Breaking down complex learning goals into smaller, teachable skills helped me design instruction that was both focused and measurable. This phase ensured that the content I developed was truly targeted to the learners' needs, particularly the parents I was aiming to support in helping their children with 4th-grade math.

Challenges did arise throughout the project. Initially, I found it difficult to narrow down a clear instructional goal that was both meaningful and specific enough to drive the rest of the design. To overcome this, I revisited the needs assessment data and sought feedback from peers and instructors, which helped refine the goal to better align with the real needs of my audience.

Another challenge was developing valid **assessment instruments** that truly measured the intended learning outcomes. I solved this by aligning each assessment with specific performance objectives and using multiple formats (e.g., quizzes, surveys, and self-reflection tools) to ensure reliability and accessibility.

Overall, the Dick and Carey model helped me stay grounded, organized, and intentional in my instructional choices. The iterative nature of the model encouraged reflection and continuous improvement throughout the process, leading to a more polished and effective final product.

Final Project URL

4th-Grade Math Training Platform for Parents