Appendix E

Codebook Excerpt: Themes, Subcodes, Definitions, and Representative Data

The following tables present the codebook developed through the reflexive thematic analysis process described in the Data Analysis Section. Each table corresponds to one of the three themes, listing the sub-codes, their definitions, and representative participant quotations. The theoretical framework alignment for each sub-code is indicated in the rightmost column.

Table E1

Theme 1: Technology-Mediated Transformation of Professional Practice

Subcode	Definition	Representative Data Excerpt	Framework Alignment
Time Efficiency	Participant-reported reduction in time required for lesson plan generation when using AI	"It only took about 20 seconds with clearer explanations" (Participant 1)	TAM: Perceived Usefulness
Cognitive Shift	Change in planning approach from content generation to content curation and evaluation	"The process felt more like brainstorming with an instant colleague" (Participant 1)	AT: Division of Labor
Prompt Engineering	Learning to write effective, specific prompts to improve AI output quality	"AI was strongest when I was very specific in my prompts" (Participant 19)	TAM: Perceived Ease of Use
Creativity Enhancement	AI expanding the range of instructional ideas beyond participant's prior repertoire	"Expanded the horizon of what I thought the lesson could be" (Participant 4)	AT: Contradictions as Catalysts
Creativity Concern	Perceived loss of creative ownership or professional authenticity when using AI	"AI completely removed that creative component" (Participant 5)	TAM: Trust/Professional Agency; AT: Contradictions
Attitude Change	Shift from initial skepticism or resistance toward pragmatic acceptance of AI tools	"I was always very against AI... started to see how much time and effort it can save us" (Participant 3)	TAM: Acceptance trajectory
Professional Identity	Reconceptualization of teacher role from content creator to	"AI will never replace my expertise... it will serve as a tool" (Participant 3)	TPACK: Augmented PCK

Subcode	Definition	Representative Data Excerpt	Framework Alignment
	content curator/evaluator		
AI Self-Efficacy	Growing confidence in ability to effectively use AI tools for instructional planning	"Gained confidence in adapting AI-generated materials" (Participant 24)	TAM: Self-efficacy

Table E2

Theme 2: Technology-Supported Enhancement of Cross-Curricular Integration

Subcode	Definition	Representative Data Excerpt	Framework Alignment
Integration Barrier Reduction	AI helping bridge the gap between mathematics and science content in lesson design	"Treated both content areas equally" (Participant 19)	TPACK: Integration quality
Authentic Connection	Meaningful, conceptually grounded cross-disciplinary links in AI-generated content	"Overlapped authentically predicting plant growth using line-plot patterns" (Participant 24)	TPACK: Contextual Knowledge
Surface-Level Integration	Superficial or forced connections between subjects in AI output	"Keep subjects separate" (Participant 15)	AT: Tool–Object contradiction
Traditional Method Preference	Participant valuing the intentionality of human-directed planning for integration	"Every step is taken on purpose" (Participant 30)	TAM: Trust/Agency
AI Method Preference	Participant valuing AI's ability to generate novel cross-disciplinary connections	"So many different discussion topics that I had not thought of" (Participant 11)	TAM: Perceived Usefulness

Table E3

Theme 3: Technology-Enabled Differentiation with Quality Assurance Needs

Subcode	Definition	Representative Data Excerpt	Framework Alignment
Differentiation Capability	AI's ability to generate tiered supports and accommodations for diverse learners	"Tiered support, such as pre-made graph templates for struggling students" (Participant 26)	TAM: Perceived Usefulness
Contextual Knowledge Primacy	Teacher's situated knowledge of students as irreplaceable by AI	"Can't detect their moods, personalities, or dynamics" (Participant 27)	TPACK: Contextual Knowledge
Timing/Pacing Issues	AI generating unrealistic time estimates for elementary classroom activities	"Not realistic for an elementary classroom" (Participant 14)	AT: Tool–Rules contradiction
Accommodation Gaps	Missing or inadequate supports for specific student populations (e.g., ELLs)	"Might not take into account the needs of ELLs" (Participant 18)	TPACK: Knowledge gaps
Idealistic vs. Realistic	Gap between AI's aspirational suggestions and classroom implementation constraints	"Idealistic or imaginative ideas that may not translate well" (Participant 21)	AT: Tool–Object contradiction