Chart 1. Stages of Thematic Analysis

Stage	Description	Theoretical Basis
1. Familiarization	Repeated reading and viewing of journals, artifacts, visual materials, and observation notes. Multimodal artifacts (e.g., comics, Miro boards) were treated as meaning-bearing texts.	Braun & Clarke (2006); Kress (2010)
2. Coding (First & Second Cycles)	First-cycle coding included descriptive, process, and in vivo codes capturing students' engagement with AI tools. Second-cycle pattern coding clustered related codes into higher-order conceptual categories.	Saldaña (2016)
3. Theme Development	Identification and refinement of recurrent conceptual patterns across datasets to construct analytically coherent themes.	Braun & Clarke (2006)

Chart 2. Data Collection Instruments and Their Purposes

Instrument	Description / Use in the Course	Objective in the Study	Type of Data Generated
Classroom Observations	Conducted weekly during hands on sessions where students designed syllabi, created assessment tools, discussed ethical use of AI, and experimented with platforms (LLMs, Miro, comic generators).	To document how pre service teachers interacted with AI supported assessment tasks in real time and how they negotiated pedagogical decisions.	Field notes on participation, collaboration, questions, challenges, use of AI tools, and emerging understandings.
Reflective Journals	Weekly entries where students described how they used AI for drafting rubrics, refining assessment criteria, generating ideas, or visualizing concepts through summaries and comics.	To capture students' internal reasoning, evolving conceptions of assessment, and reflections on the possibilities and limits of AI.	Narrative reflections, metacognitive insights, ethical considerations, personal accounts of experimentation.
Student Produced Artifacts	Syllabi, exams, rubrics, formative assessment tools, visual summaries (Miro), AI generated	To analyze how students applied course principles to their own assessment designs and	Concrete evidence of task design, revisions informed by AI, integration of formative

	comics, and instruments created for their research projects.	how AI influenced these products.	principles, creativity and innovation.
Micro teaching Assessment Materials	Instruments students designed and piloted during micro teaching sessions, some drafted initially with AI support and later adapted manually.	To examine how pre service teachers transferred AI assisted design into practical classroom scenarios.	Rubrics, feedback forms, adapted tasks, peer feedback records.
Course Project Documentation	Final portfolios where students compiled their assessment designs, reflections, and evidence of AI use in their research projects.	To provide a comprehensive view of students' learning trajectories over the semester.	Organized collections of tasks, revisions, rationales, and reflective narratives.

Chart 3. Data Collection Instruments and Pedagogical Uses

Instrument / Activity	Primary Use	Objective	AI Integration	Resulting Artifacts / Evidence
Syllabus Design Task	Course planning and curriculum design	To demonstrate understanding of assessment theories by creating a complete syllabus aligned with learning outcomes	AI used for benchmarking existing syllabi, generating alternative formulations, refining rationales	Draft syllabi, justification reports, reflection notes
Research Project Application Task	Applying course content to students' own research questions	To evaluate transfer of theoretical knowledge to personal research contexts	AI-assisted literature mapping, idea expansion, conceptual clarification	Research project outlines, analytic memos
Student-Designed Exams (Midterm/Final)	Performance assessment creation	To design valid, reliable, and context-appropriate exams	AI used to propose question types, check cognitive demand levels, and suggest rubrics	Full exam prototypes, rubric drafts, teacher notes
AI-Assisted Instrument Design (comics, Miro summaries)	Creative formative assessment design	To explore alternative, multimodal ways of assessing understanding	AI for storyboard creation, visual summaries, scaffolded concept mapping	Comics, Miro boards, annotated visuals
Reflective Journals	Metacognitive reflection	To document learning processes,	AI used as a reflective partner	Weekly journals,

		shifts in understanding, and affective responses	to generate prompts or expand reflections	reflective essays
Classroom Observations (by instructor)	Monitoring engagement and pedagogical decision-making	To capture real-time use of AI tools and collaborative work	None (human observation only)	Field notes, participation logs
Learning Artifacts Portfolio	Compilation of all course tasks	To track progress and collect evidence of learning	Some artifacts partially AI-generated or refined with AI	Full portfolio (syllabi, exams, instruments, journals)

Chart 4. Coding Matrix (First- and Second-Cycle Codes)

Code Type	Code / Category	Definition	Example (Journals / Artifacts)
Descriptive	*Contextual constraints*	Mentions of workload, rurality, resource limits	"In my practicum school there is no internet for students."
Descriptive	*Assessment redesign*	Attempts to modify rubrics, criteria, tasks	Screenshot of revised rubric in Miro board
Process	*Iterating with AI*	Using AI to rephrase, compare ideas, or generate options	"Asked AI to propose criteria, then adapted them."
Process	*Refining feedback*	Actions to improve clarity, fairness, or tone	Comic frame describing "better feedback flow"
In Vivo	*"AI gives ideas, not answers"*	Student's own framing of AI's role	From reflective journal
In Vivo	*"Assessment must fit our reality"*	Emphasis on contextualized pedagogy	Captured in classroom discussion
Deductive	*Agency*	Evidence of decision-making and autonomy	Student modifies AI suggestion instead of adopting it
Deductive	*Fairness*	Attention to equity, transparency, or bias	Journals referencing unfair grading experiences
Deductive	*Ethical use of AI*	Concerns about misuse, dependency, data issues	"AI can confuse students if teachers use it blindly."
Deductive	*Multimodality*	Use of visual, textual, or digital formats in learning and assessment	Comics, flowcharts, Miro summaries