INTEGRATED PROJECT & CONTEXT-BASED LEARNING (IPCBL) FRAMEWORK IN ICT EDUCATION

jacquim.github.io\icpbl

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AGENDA

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BACKGROUND

Industry-Relevant Skills

A need for innovative teaching and learning methodologies that better equip students with practical, industry-relevant skills exists (Khasawneh, 2024).

Real-World Applications

Traditional assessment methods lack the integration of real-world applications (Janse van Rensburg, 2022).

Competency-Based Learning

A framework that promotes competency-based learning through project-driven and context-aware education is needed (Pratisto and Danoetirta, 2025) & (Molina-García et al., 2024).

OBJECTIVE

To develop and evaluate a framework that fosters deep learning, problem-solving, and skill acquisition within an ICT education context.

IMPLEMENTATION PLAN

Integrated

Connects different academic disciplines, skills, and experiences to promote deeper understanding and transferable skills

Project-Based

Introduces students to real-world projects that enable their development of essential knowledge and skills

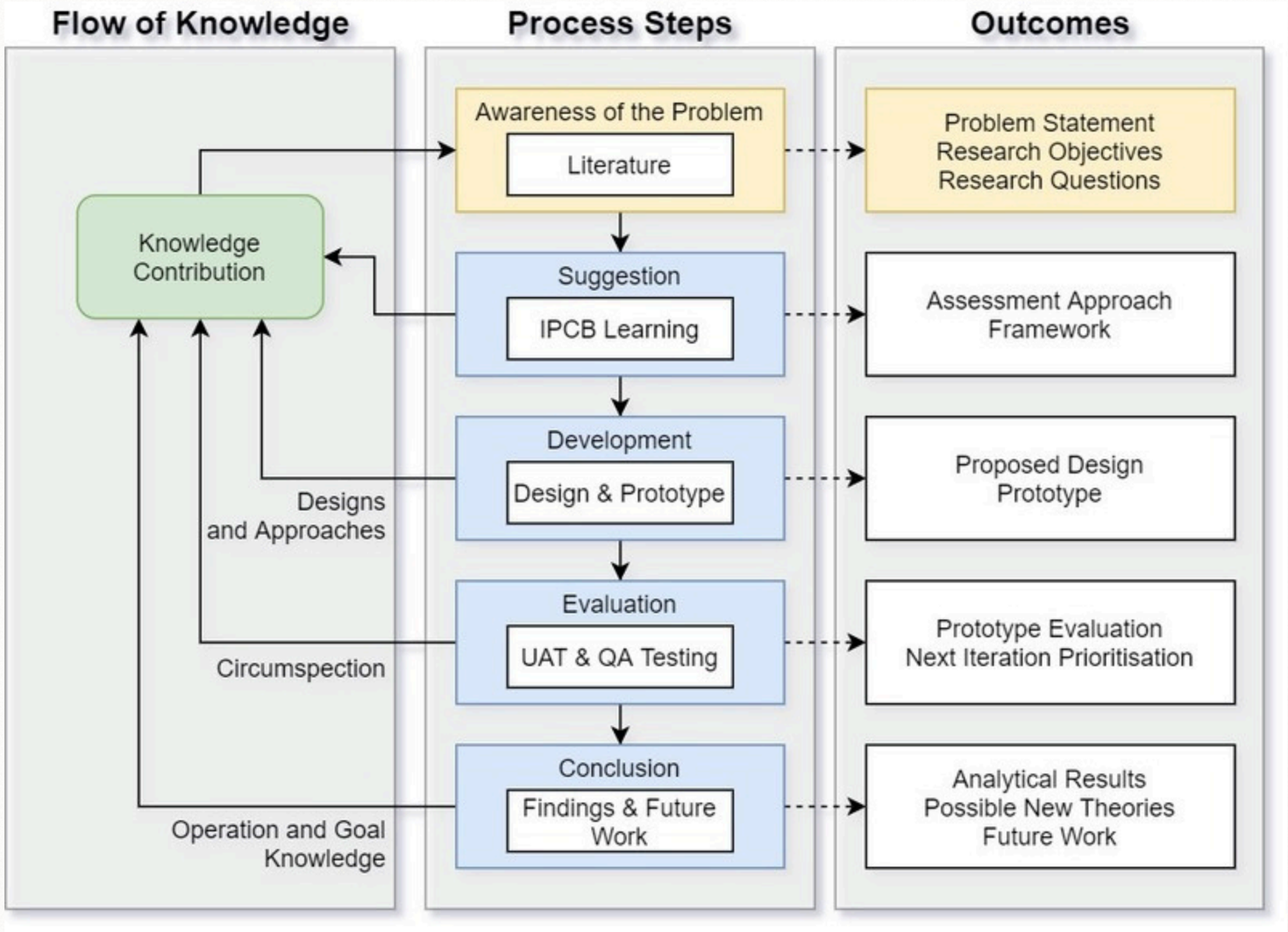
Context-Based

Incorporates real-world problems and challenges, allowing students to learn through practical application

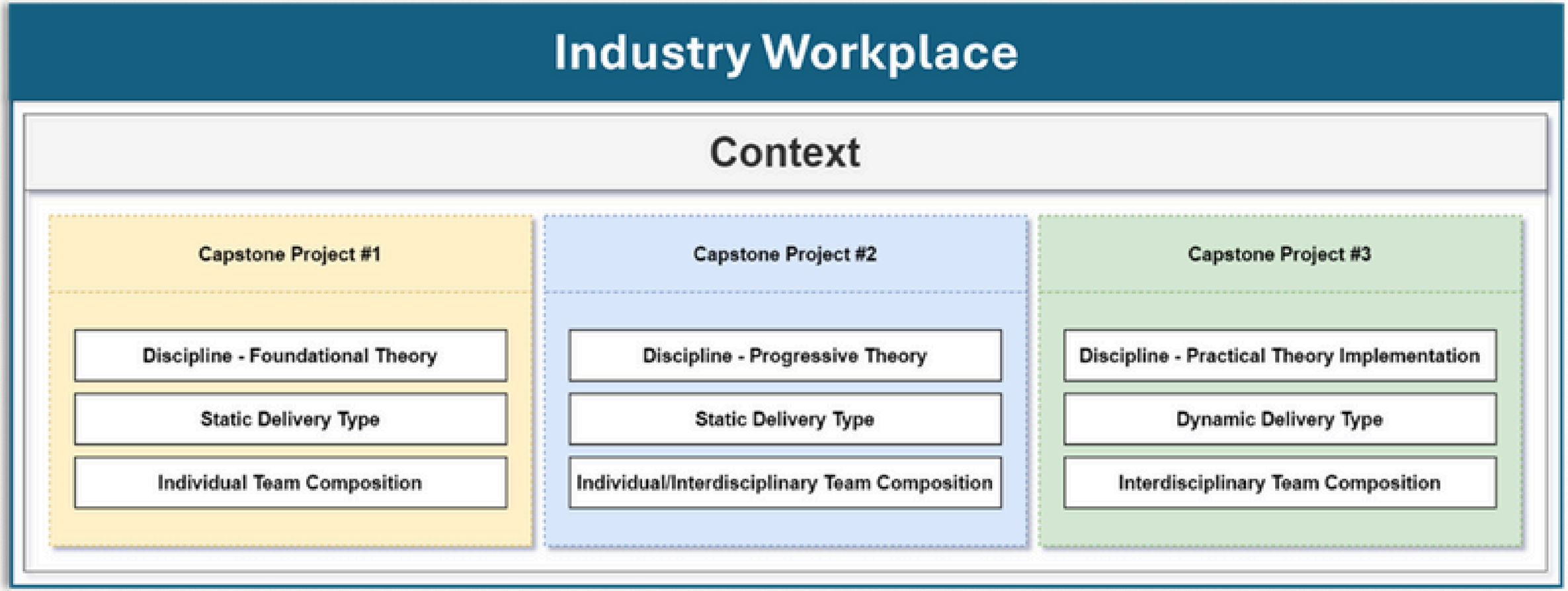
IPCBL

Combines the individual approaches of context-based learning, project-based learning and integrated learning with the aim of realising the benefits of each separate approach when they are all brought together.

RESEARCH DESIGN



IPCBL IMPLEMENTATION

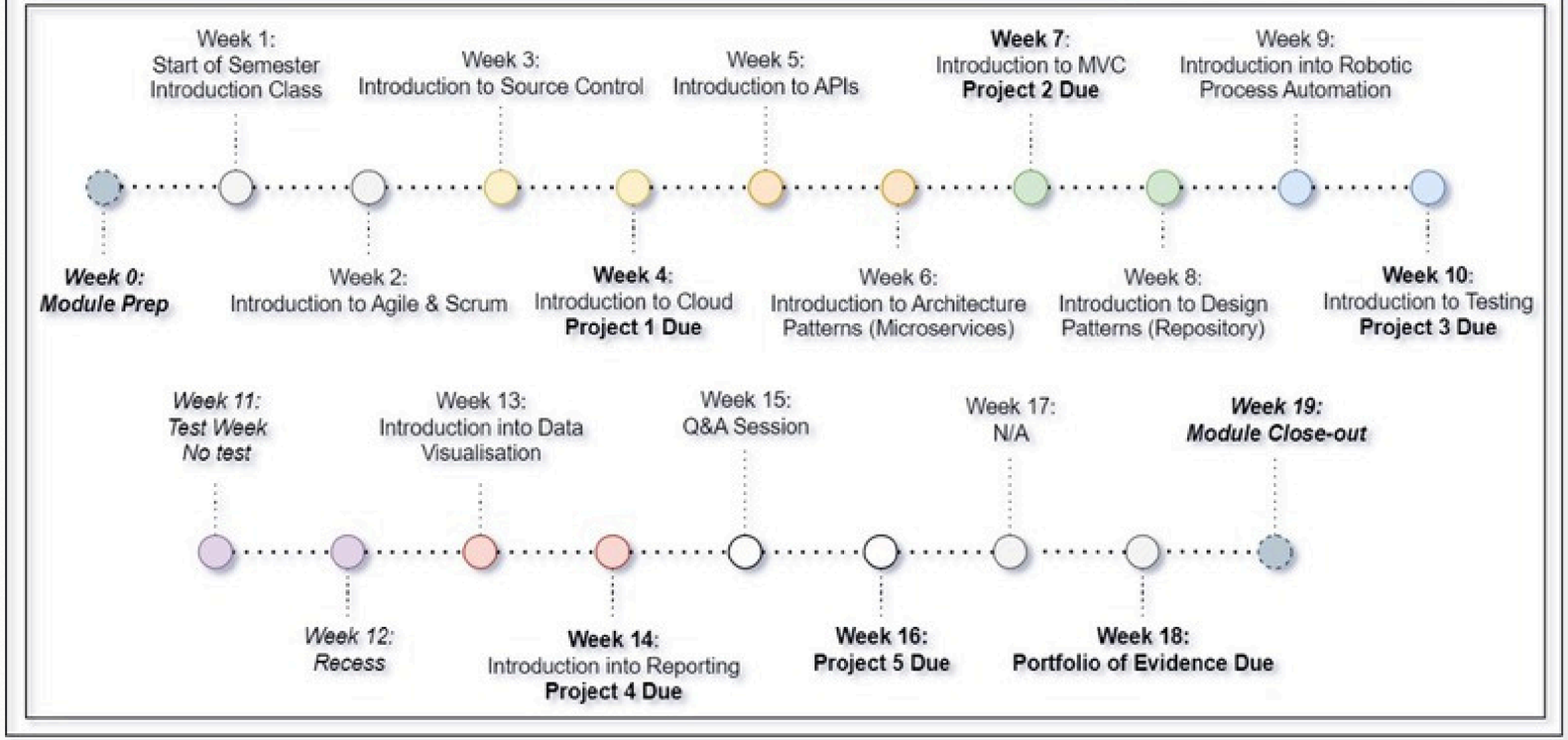


IMPLEMENTATION PLAN

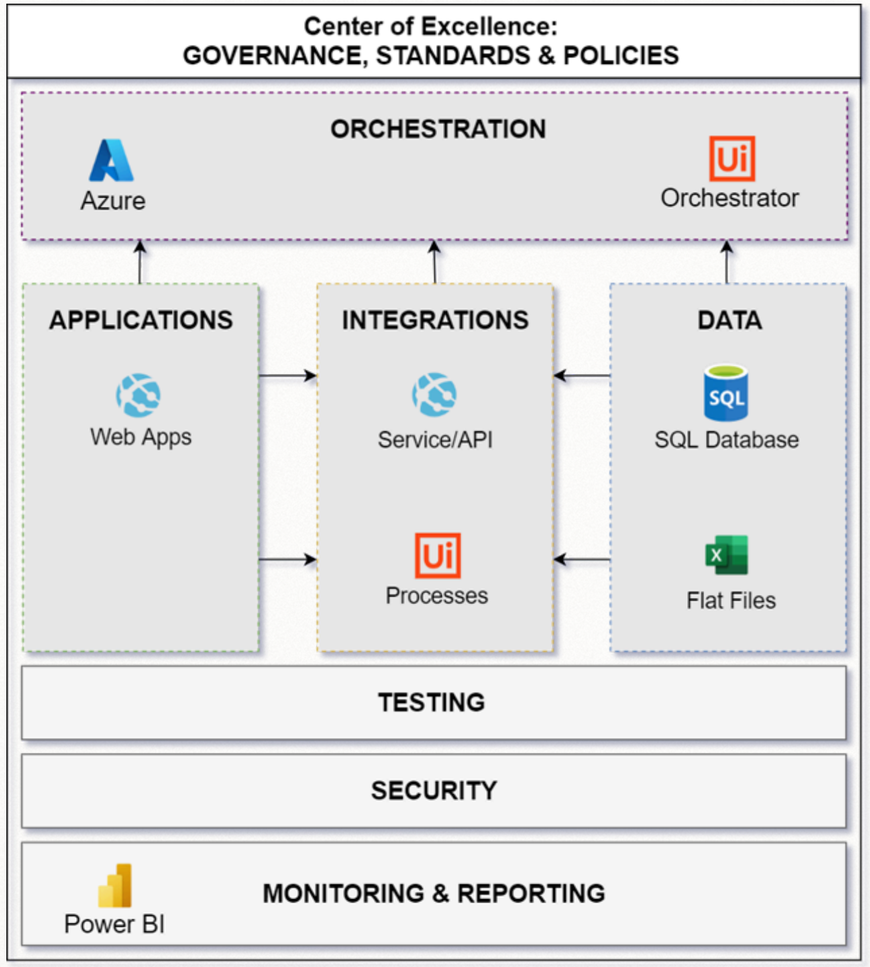
256 Students | 3496 Certifications & Badges | **2022 - Connected Office:** An Internet of Things (IOT) company

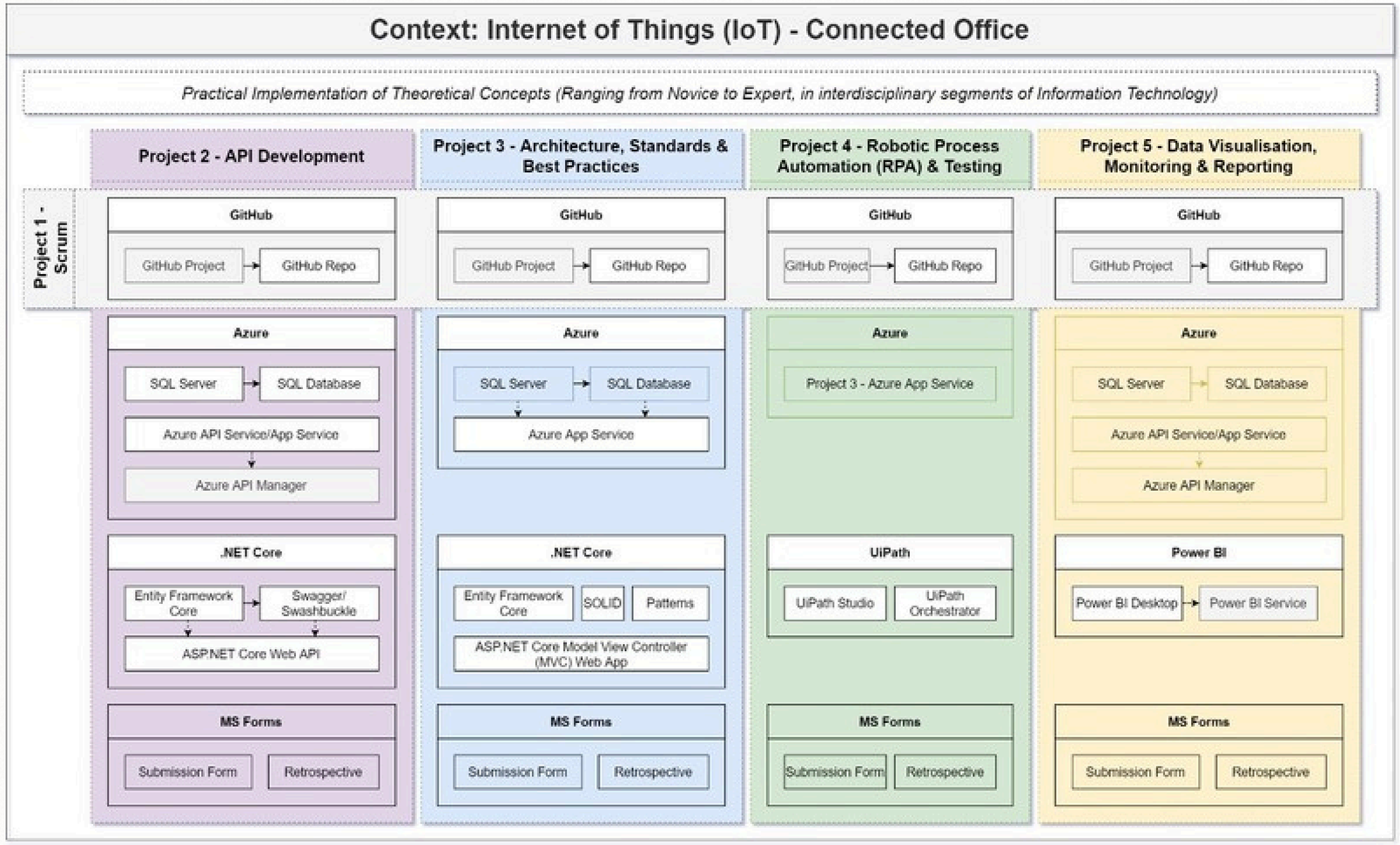
262 Students | 2392 Certifications & Badges | **2023 - EcoPower Logistics:** An alternative energy solutions company

105 Students | 1422 Certifications & Badges | **2024 - Tech Trends:** An "end-to-end" "full-stack" consulting company



FIRST ITERATION





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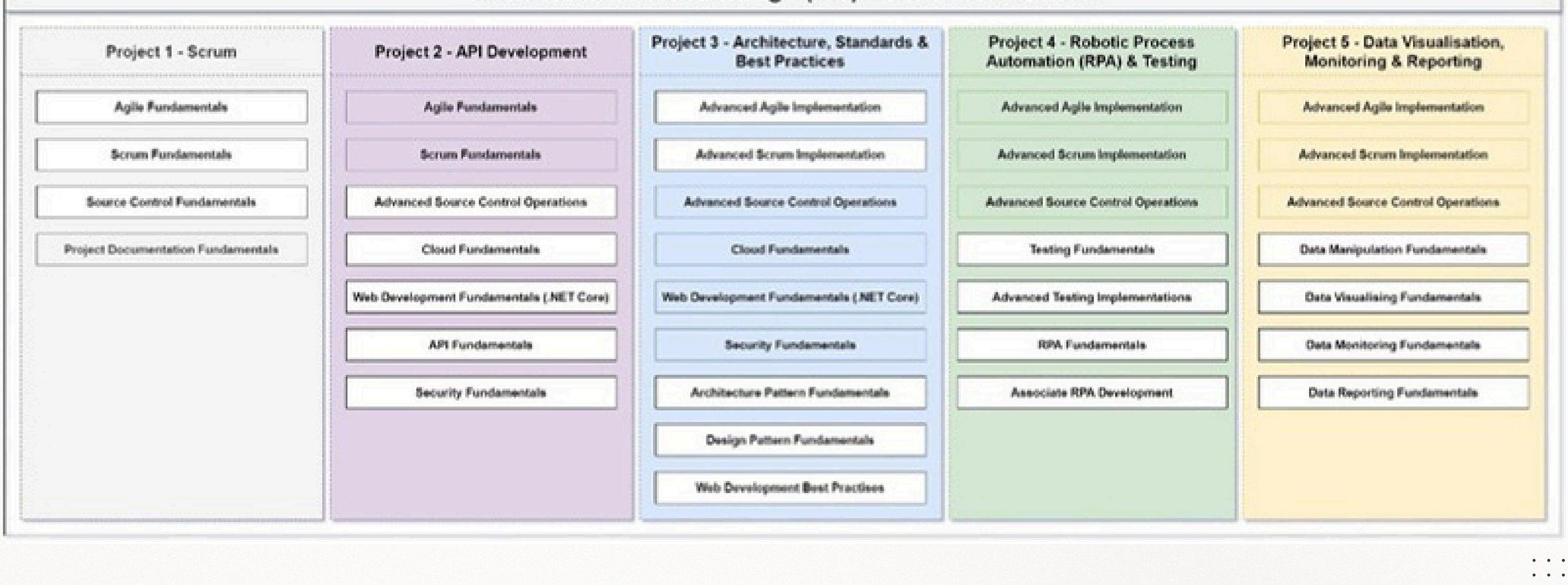
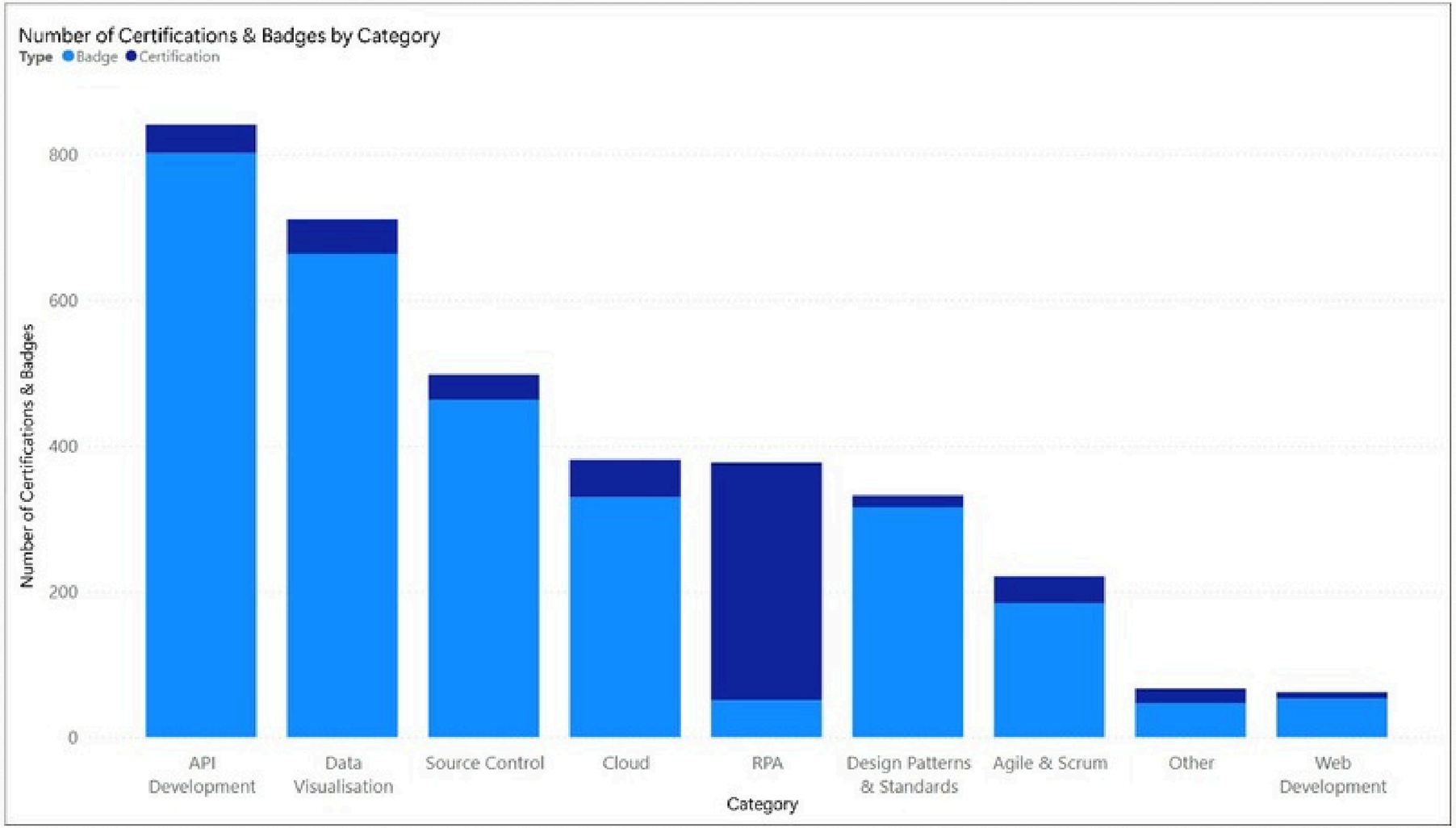


FIRST ITERATION RESULTS



APPROACH COMPARISON

ADVANTAGE	CONTEXT-BASED LEARNING	PROJECT-BASED LEARNING	INTEGRATED LEARNING	INTEGRATED PROJECT CONTEXT-BASED LEARNING
Improved motivation & engagement	✔	✔	–	✔
Improved retrospective understanding of critical concepts	✔	✔	✔	✔
Development of essential skills	✔	✔	–	✔
Transferability of knowledge	✔	✔	✔	✔
Real-world application	✔	✔	✔	✔
Encourages critical thinking	✔	✔	✔	✔
Encourages creative thinking	–	–	✔	✔
Encourages problem solving	✔	✔	✔	✔
Encourages external training & certification	–	✔	–	✔

FUTURE WORK

Module Outcome Curriculum Development

Encapsulate the approach proposed by Muller and Greeff (2022) to develop a curriculum shaped specifically to incorporate pre-defined skills that can be aligned to a module-outcome-level binary rubric.

Portfolio of Evidence Template

Enhance the template of the content required in the portfolio of evidence that illustrates the progression of student skills and application of knowledge through the IPCBL learning approach.

Training & Certification Milestones

Introduce external training milestones into the approach to ensure certificates are obtained timeously and within integrated capstone project context, contributing to the overarching module context.