Reviewing the Local Research-Practice Gap in Industry 5.0

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Problem Statement

As an institution expands its academic and research programs, there's an inherent uncertainty among stakeholders - students, mentors, and industry. The significance of research varies over time and between individuals. Aligning expectations and understanding of quality research is complex and if not handled well, could lead to lost opportunities for collaboration or employment. This misalignment between academic research and industry needs exacerbates the gap between research and practice.

General Research Approach

- This research shall adopt a **mixed methods approach**, following a grounded theory strategy.
- The **primary data** will be a series of **interviews** addressed to <u>students</u>, <u>academics</u> and <u>professionals</u>, thus a *qualitative* method.
- The <u>undergraduate research manuscripts</u> shall be analysed as **secondary data** to extract *quantitative* information that can showcase emerging trends and tendencies within our institution.

Research Project Overview

In this evolved grounded theory research, an initial set of propositions on the enablers and challenges in research undertakings has emerged through ten interviews held with the three major stakeholders: the students; academics; and the non-academic professionals. In-vivo codes were first extracted then open coding was applied to break data and delineating concepts. Axial coding was applied to identify relationships between categories and subcategories. Core categories were identified through selective coding. A triangulation of viewpoints has been applied to identify strong and consistent theories on the subject matter with two-case studies and other visual maps. This study concludes with a series of recommendations on how to extend the research further.

Research Objective/s

Research Aim: To review MCAST IICT undergraduate research directions, practices, and their impact, to propose a way how to approach future research undertakings that are better aligned with the needs of the major stakeholders.

Objective 01: Identification of theories to explain and reduce research-practice gap.

Objective 02: A framework to monitor and evaluate changes in research directions as well as to aid in alignment with industry.

Research Methodology

- This research adopts an **interpretive philosophy**.
- An **inductive approach** shall be undertaken since there are no pre-conceived theories that are being tested, rather such theories shall be developed from the gathered data.
- Grounded theory, more specifically the **Strauss & Corbin Grounded Theory** methodology, also known as the Evolved Ground Theory methodology shall be adopted.
- An **explanatory sequential approach** is being proposed where **triangulation** shall be applied to extract theories from the different perspectives.
- A **cross-sectional time horizon**, where participants are interviewed at specific points in their respective careers.

Research Propositions

1. **Personal Interests**: The success of research is determined by how well resources are aligned with personal interests and motivations.
2. **Context Awareness**: Being aware of the current context, including potential mentors and industry needs, is crucial for increasing the relevance and validity.
3. **Mentoring**: The role of a mentor, while challenging to define, is primarily to provide structure and aid in project planning, offering support that students may not even realize they need.
4. **Structure & Planning**: The current situation suffers from a lack of ownership and a multitude of divergent opinions, leading to a chaotic and counter-productive environment.
5. **Networking**: The current networking event, which focuses on marketing completed projects, fails to encourage communication among stakeholders at different levels, leading to a potential undervaluation of research.
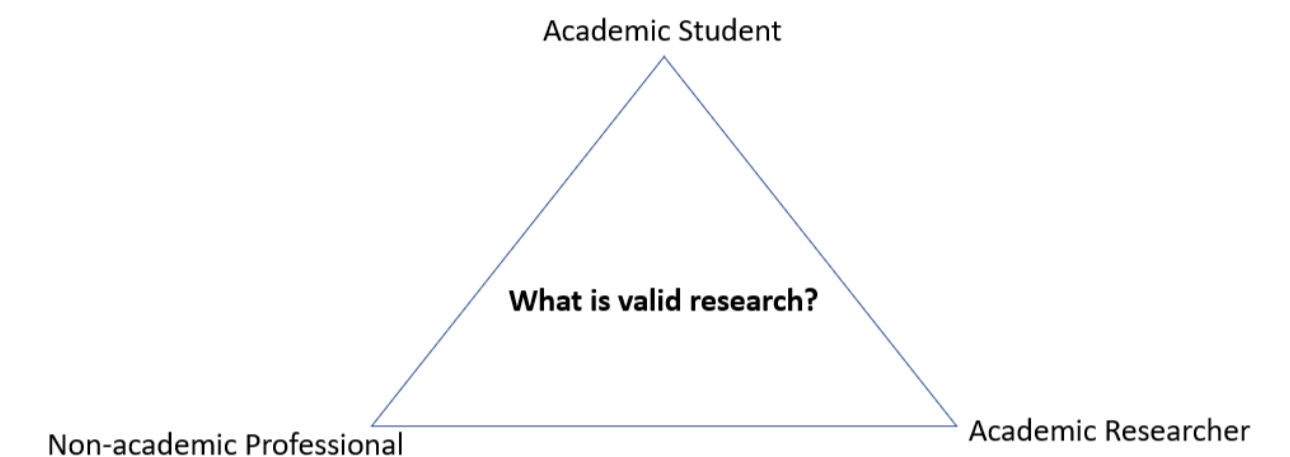
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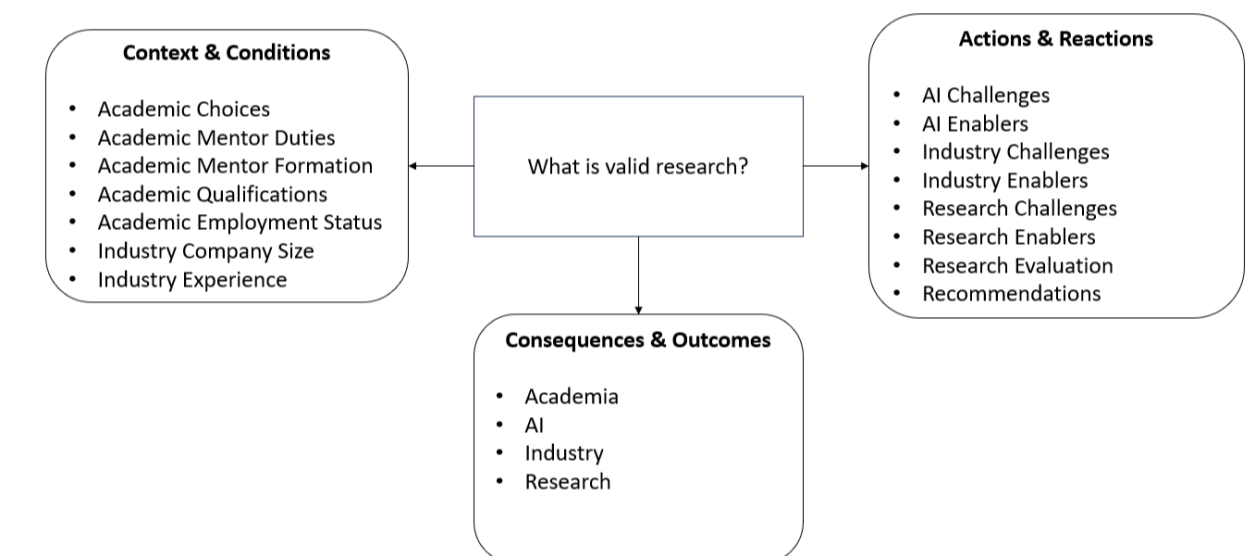

Figure 01 – *Triangulation of viewpoints*

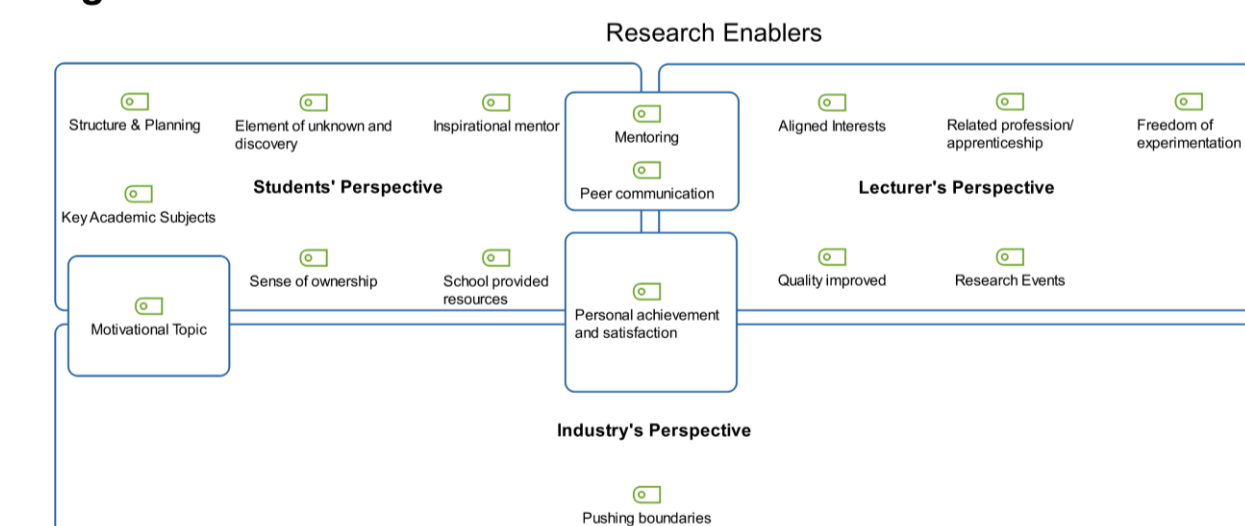***Figure 02*** – *Strauss & Corbin conditional matrix*

Figure 03 – *Research enablers viewpoints triangulation*

Key References

- Birks, Melanie and Jane Mills (2015). *Grounded theory: A practical guide.* Sage.
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- Dewey, John (2004). *Democracy and education: An introduction to the philosophy of education.* Aakar Books.