



# AI-Assisted Assessment of Expected Competency Outcomes in Education Programs

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## Why?

- Demand for new competencies.
- Lack of ability to know if education is focused on the right things and delivered at the right time.
- Responsive adjustments in education programs.



## Research Questions

- Can AI models be used to classify new or required competencies, written in natural language, considering the learning outcomes of education programs?
- How accurately do AI models classify the presence of specific competencies in education programs?

## Benefits

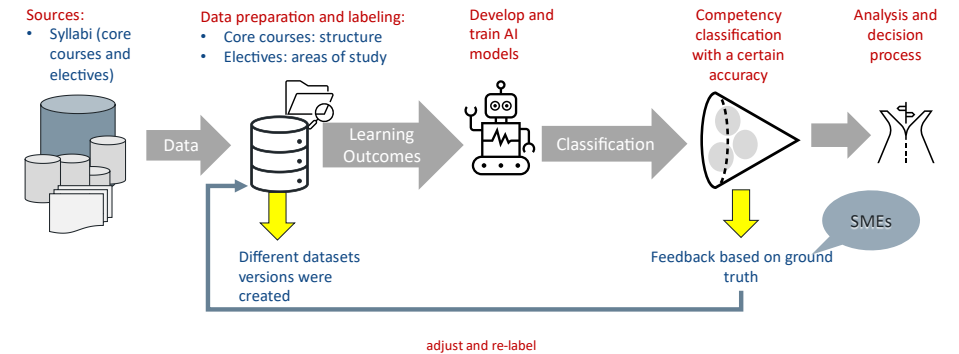
- Identify relevant competencies in education programs' learning outcomes that address both the current and future needs of the operational force, encompassing both technical and soft skills.
- Recognize significant gaps in existing education programs by analyzing required competencies and the necessary knowledge, skills, and abilities (KSAs).
- Explore opportunities to realign education programs with areas that offer the greatest advantage to learners, ensuring a reliable mechanism for continuous program development and review.



## Challenges

- The quality and accuracy of input data are critical for testing, validation, and performance of AI solutions.
- Be mindful of potential ambiguity, context sensitivity, and biases inherent in natural language inputs.
- AI models operate probabilistically, not deterministically. Understanding this probabilistic nature is essential for making informed decisions.

## Methodology



## Results

- Case studies:** AI models' accuracy indicates that the approach is feasible and should be further explored. Higher accuracy (85%-90%) was obtained in classifying certain competencies within the existing programs.
- Subject matter experts** were able to explore not only the existence but also **gaps and overlaps** of certain competencies within the existing learning outcomes.

## Impact

- Empower educational institutions to quickly adapt to evolving competency demands.
- Facilitate timely strategic adjustments in education programs, aligning them with the dynamic higher education landscape influenced by emerging technologies, through multidisciplinary program reviews.
- Ensure education offerings are responsive to learners' needs for upskilling and equipping them with new capabilities in highly contested environments.

