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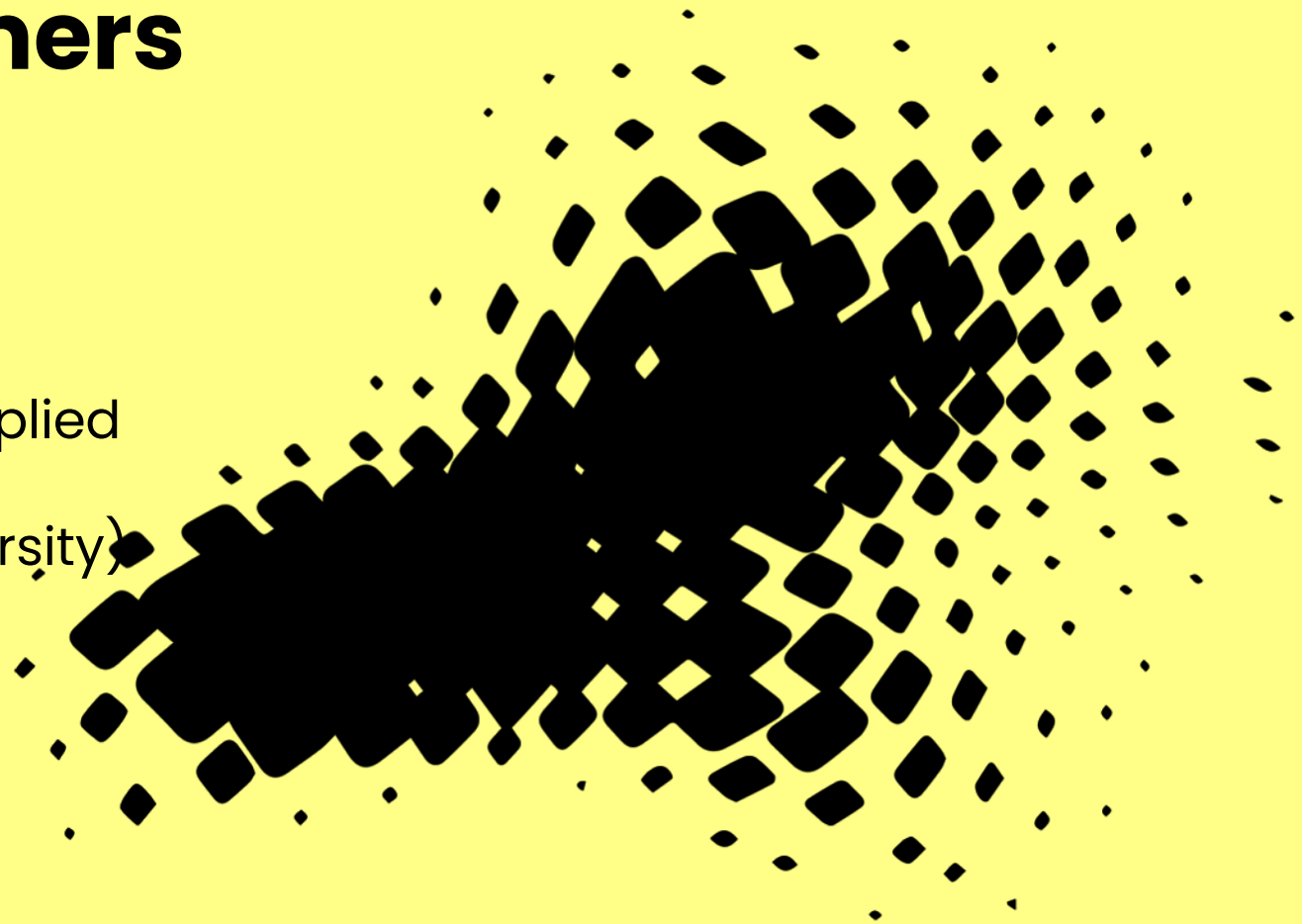
# AI-based guidance and counselling for learners

Jyri Kivinen (Lapland University of Applied Sciences)
and Olli Hotakainen (Tampere University)



# Introduction

**Objective**

• A study on AI-supported learner guidance systems, projects and pilots.
• The objective was to identify the greatest challenges, application areas and best practices.
• We paid particular attention to future needs and the challenges arising from them.

**Implementation**

• We organised three workshops in which we invited 1–2 people interested in the topic from each higher education institution.
• The fourth workshop was an open event that presented and discussed the results of previous workshops.

• The information and results collected in the workshops are recorded in this report. The results have been collected in the workshops through assignments and dialogue. The collected information has been interpreted and combined for the report.

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# Result topics

**Current situation**

- What systems/projects/pilots that utilise artificial intelligence or use student analytics are under way?
- What are their application areas and best practices?
- What challenges have been faced and how have they been responded to?

**Future**

- How AI could support
    - applying for studies?
    - planning of studies?
    - completion of studies?
    - assessment of micro-credentials?

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# Systems, projects & pilots

## Summary:

- Many higher education institutions use chatbots to guide students and support their studies
- Many higher education institutions use learning analytics tools
- There are on-going projects from more efficient learning analytics to AI-supported learning support
- Many projects involve several higher education institutions and actors

## Application areas:

- Learner counselling and guidance support
- Teaching recommendations, personalisation, tailoring
- Quality assurance
- Tutoring
- Detection of learning difficulties
- Education planning, ...

## Names:

- Systems: PowerBI, APOA learning analytics, mRaportointi, ...
- Chatbots: Annie, Minerva, GetJenny, ...
- Projects: AnalytiikkaÄly, Älykkäästi ohjaten, Vauhtia työuralle, ...
- Standards: ESCO classification

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# Challenges and solutions

## Major and emerging challenges

- Deficiencies in development work resources (including deficiencies in AI competence)
- Availability of data, including data format, quality and life cycle and information security
- Utilisation of artificial intelligence only in stereotypical cases
- Difficulty in automating pedagogical practices
- Transparency, comprehensibility, humanity and legality of AI

## Solutions

- Careful and accurate preliminary planning
- Training for introducing and understanding AI, including the collection, use and protection of data
- Resources for development, and the creation of common rules
- Creating a uniform system in which data and its utilisation comply with the same standards and rules
- Digivisio 2030

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# How could AI support those applying for studies?

**Summary:**

- Artificial intelligence could recommend study paths that help learners reach their final goal.
- The recommendations would be based on the situation in the labour market and the skills required there.
- The recommendation could be based on the person's strengths, interests, capabilities and skills, previous merits and life situation.

**Observations**

- The learner must have continuous access to their own data and to restrict its use.
- Do commercial operators have power over the recommendations?
- AI offers suitable job descriptions during studies.
- AI helps in identifying strengths.
- AI could also recommend face-to-face career guidance.

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# How could AI support planning of studies?

**Summary:**

- Depending on the learner's situation, AI could offer different study paths to achieve the goal.
- AI should continuously offer potential path alternatives, as the learner can change their goal, and the goal may also still be vague for them.
- The learner should also be informed about alternatives outside the recommendations, the paths that lead to them and the consequences.

**Artificial intelligence should consider the following:**

- Competence should have the same terminology in both education and work.
- Temporal optimisation of the path, focus on topics and the employment capacity.
- Informal training, the perspective of financing studies and how to make time for studying.
- Recommendations could be based on the speed, ease and depth of the path.

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# How could AI support the completion of studies?

**Summary**

- Plans time management, encourages and recognises the need for guidance.
- Recognises strengths and suggests alternatives for completing studies, periods of studying, pace of studying, study methods and the best ways to demonstrate competence.
- Connects learners with other learners and the instructor. This makes studying meaningful, makes the learner do networking and reduces the threshold for seeking help.
- Provides real-time and accurate data on the study situation during the study unit.
- Future idea: Each learner would have their own AI mentor.

- **Criticism:** The learner can become anxious about the disclosure of data, and too strong support from AI can affect the learner's self-direction.

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# How could AI support the assessment of micro-credentials?

**Summary:**

- Micro-credentials can be meaningful, engaging and motivating, as long as a comprehensible continuum and significance is created for them.
- Micro-credentials could be a way to supplement and update competence as long as the learner's basic competence is already in order.
- Criticism: Micro-credentials do not create experts, as the studies remain superficial and fragmented.

- **Artificial intelligence assessment:**
- AI provides feedback and praise concerning the study progress as well as further recommendations for studies.
- There are intermediate questions during the study unit that enable progress. The objective is to gamify studies.
- The answer will be converted into text through speech recognition, and the assessment would be a discussion with an AI.

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# Further recommendations

- A key asset for competitiveness: a nationally connected network of higher education institutions with large resources and common rules and terminology.
- Common rules for data production and its use.
- Developing cross-connectivity and interconnectivity of services between higher education institutions.
- Nationwide introduction of artificial intelligence in the Digivisio 2030 programme.
- Utilisation of the development potential of study analytics and its preliminary testing for AI
- Systematic production and collection of study data
- Making all data compliant with the ESCO classification
- Strong preliminary planning in information security and ethical data use
- Learning from advanced projects (3AMK's CareerBot)
- Digivisio 2030 organises further meetings and a discussion forum for further development.

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# Thank you!