The Research Strand on Education for TALOS Project

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Digitalization of Education: Contribution of Artificial Intelligence in Curriculum Analysis

- The research project is about language curriculum analysis. More specifically, L1 curricula in Greece in the 21st century will be analyzed.
- Why curricula and why language curricula?

We will focus on three user groups:

- researchers (educational, linguistics and educational policy),
- teachers and
- policy-makers.

The research aims to answer questions such as (not limited to) / Competency questions:

- Analysing curriculum in order to find out if there is alignment between aimed skills and proposed activities?
- Is there alignment between the curriculum's introduction (initial assertions and general aims) and its practical guidelines?
- Is this curriculum interdisciplinary?
- Is this curriculum aligned with the Action Plan for L1 (mother language) of the European Union?
- Is this curriculum student-centred?
- Which is the core knowledge in this curriculum?

The contribution of AI

The research will propose a modelling and a digital representation of curricula that allow their processing by machines.

To this end, the contribution of artificial intelligence (AI) and natural language processing will be studied

in the domain of NLP (lexical distance),

Knowledge acquisition & representation and

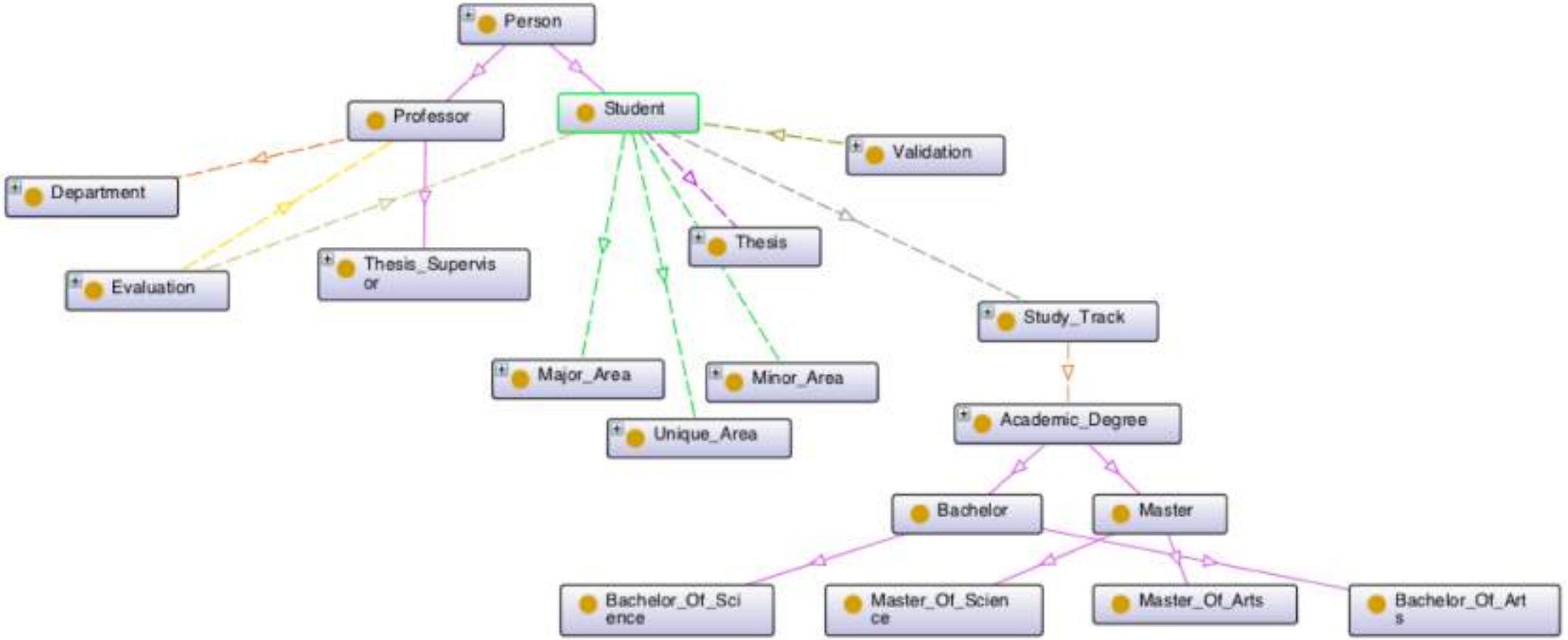
in international standards (ISO & W3C).

Ontologies and curriculum analysis

- The research will include ontologies. An ontology is a conceptualisation of a domain, i.e. the representation of the domain knowledge such as skills and activities allowing their sharing and matching. It also allows to define consensual terminologies in digital format in compliance with standards (ISO, W3C).

- The research on ontologies for curriculum analysis is in its infancy BUT it is promising as ontologies “are used with great success in education because they allow to formulate the representation of a learning domain by specifying all concepts involved, relations between concepts and all properties and conditions that exist” (Stancin et al. 2020).

Bologna ontology



Global Skills Taxonomy | Education 4.0

Global Skills Taxonomy

Click the nodes to discover more information on the Taxonomy.

What we expect to achieve through this research?

a) To test symbolic AI as a means for curriculum analysis highlighting pros and cons in this kind of educational research

b) To enrich educational research through symbolic AI

c) To reach conclusions about the Greek L1 curricula of 21st century, concerning

- Pedagogical principles adopted (including curriculum theories)
- Linguistic theories implemented
- Broader educational and political perceptions embedded in the curr

d) To reach such conclusions for a big corpus of curricula-

initial data set and the possibility of extending it

Expected results

- To propose –through standardized vocabulary- some guidelines for designing curricula

- Contribution to Curriculum theory and research,
  knowledge management (acquisition, representation),
  Standardization.

- Resources in open access: curricula, controlled vocabularies (terminologies), knowledge graphs and ontologies (about L1 skills, content, activities, assessement) in Education

Call for PhD position

- The call will be released in the end of May
- For a 3 years PhD
- Stay tuned…