

Image of Artificial Intelligence and use in Education

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Context

Artificial intelligence has been opening up new avenues in education, in particular to reduce individual differences in learning and skills, enabling schools to cope with the heterogeneity and diversity of their pupils. Policies, particularly at European level, are encouraging the use of these new teaching methods (Tuomi, Cabrera, Vuorikari, & Punie, 2018; Vuorikari, Punie, & Cabrera, 2020; Unesco's Beijing Declaration (2019).

The use of AI, particularly in education, raises questions for which the answers are still relatively unexplored:

- the acceptance of AI by teachers, pupils, parents and the school community as a whole;
- the new teacher-pupil relationship mediated by AI tools;
- the protection of the ever-increasing amount of data that this technology uses to adapt to each pupil.

In order to address these issues, a study of the image and knowledge of AI among students was carried out.

Study 1

Method

- **Semi-structured interview** with four men and five women who had completed higher education
- The questions related to
 - the definition of AI,
 - their understanding of this concept,
 - what its usefulness is and
 - what the interests and limits are to its use



Results

- > Participants are not particularly interested in learning about AI
- > AI can be defined as a form of non-human intelligence developed by humans to serve a variety of human needs
- > another definition : the ability of a machine to execute itself according to its programming, to learn from its own experience and environment and to make decisions
- > Two opposing distinctions between human and artificial intelligence.
 - Natural intelligence evolves in living organisms by itself, is spontaneous and not manufactured, so it is impossible for a machine to possess true intelligence.
 - Conversely, cognitive processes can be acquired by machines by gathering information about the environment and previous experience and making decisions on that basis.

Method

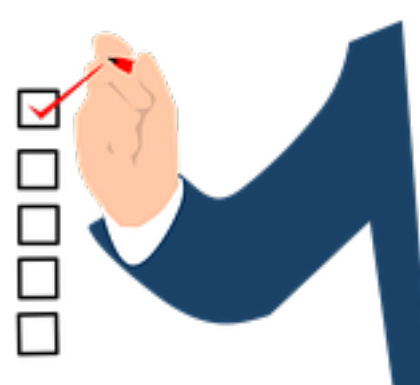
On the basis of the results of Study 1, a **questionnaire** divided into four main parts

- definitions of AI,
- general elements on AI,
- positive and negative elements,
- associations of words expressing the concept of AI) was created.

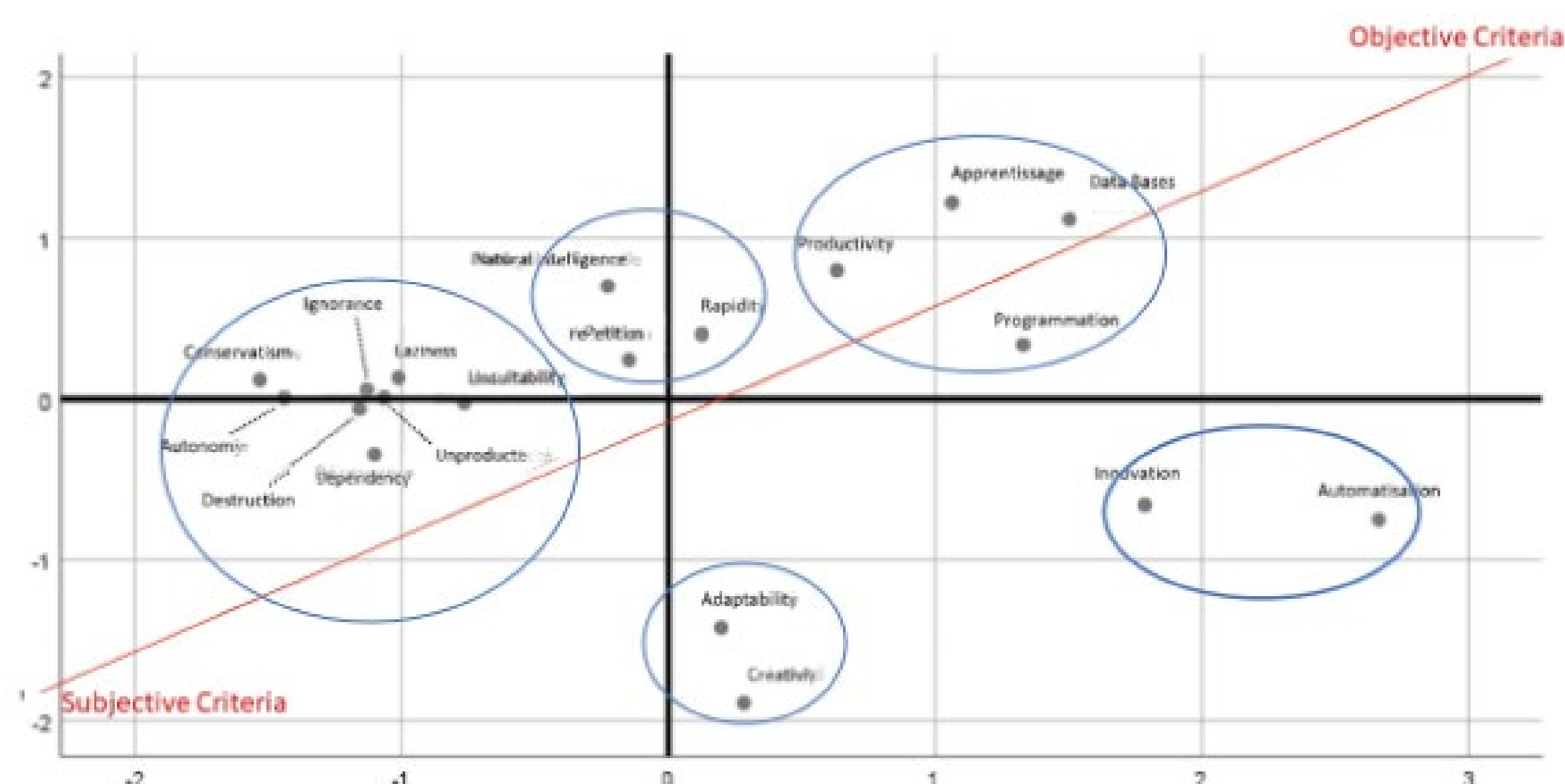
Results

-> multidimensional scaling technique => representation of the links between the items submitted to respondents for evaluation in a Euclidean space.

- The closest elements in this space are most often cited together.
- Conversely, AI elements that are far apart are considered to be discordant with each other.



Five hundred and forty-seven students responded to this questionnaire, in English and French, via the "Google Forms" platform.



Conclusion

The data collected in this study show that

- students' interest in AI is still low,
- their conception of it is partial compared to a scientific definition,
- its value in education is not mentioned.

The elements that make up this representation of AI can be grouped into several clusters highlighting several dimensions:

- its technical nature (artificial learning, programming and databases),
- its innovative qualities (creativity and adaptability to new contexts)
- its capabilities (speed and repetition), but also by a whole range of negative factors that can hinder its use (dependence, ignorance, unproductiveness, unsuitability).

These factors are organized along a continuum that oscillates between objective and subjective criteria for defining AI. In this sense, much more information is needed to raise awareness and involve teachers, pupils, parents and all those involved in the educational process in the benefits of AI in education.

References:

- Tuomi, I., Cabrera, M., Vuorikari, R & Punie, Y. (2018). *The Impact of Artificial Intelligence on Learning, Teaching, and Education. Policies for the future*. EUR 29442 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-97257-7, doi:10.2760/12297, JRC113226.
- Vuorikari, R., Punie, Y., & Cabrera Giraldez, M. (2020). *Emerging technologies and the teaching profession*. EUR 30129 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-17302-1, doi:10.2760/46933, JRC120183.