

INCLUSIVE MATHS

OBJECTIVES

FURTHER RESEARCH

Feedback, learning outcomes and mathematics anxiety in a digital game-based learning approach in mathematics education.

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To create a comprehensive taxonomy of feedback features in serious games, describing and standardising their characteristics and creating clearer nuances between different aspects of feedback. Ultimately, this taxonomy can be used in research and practice in the area of education and game science.

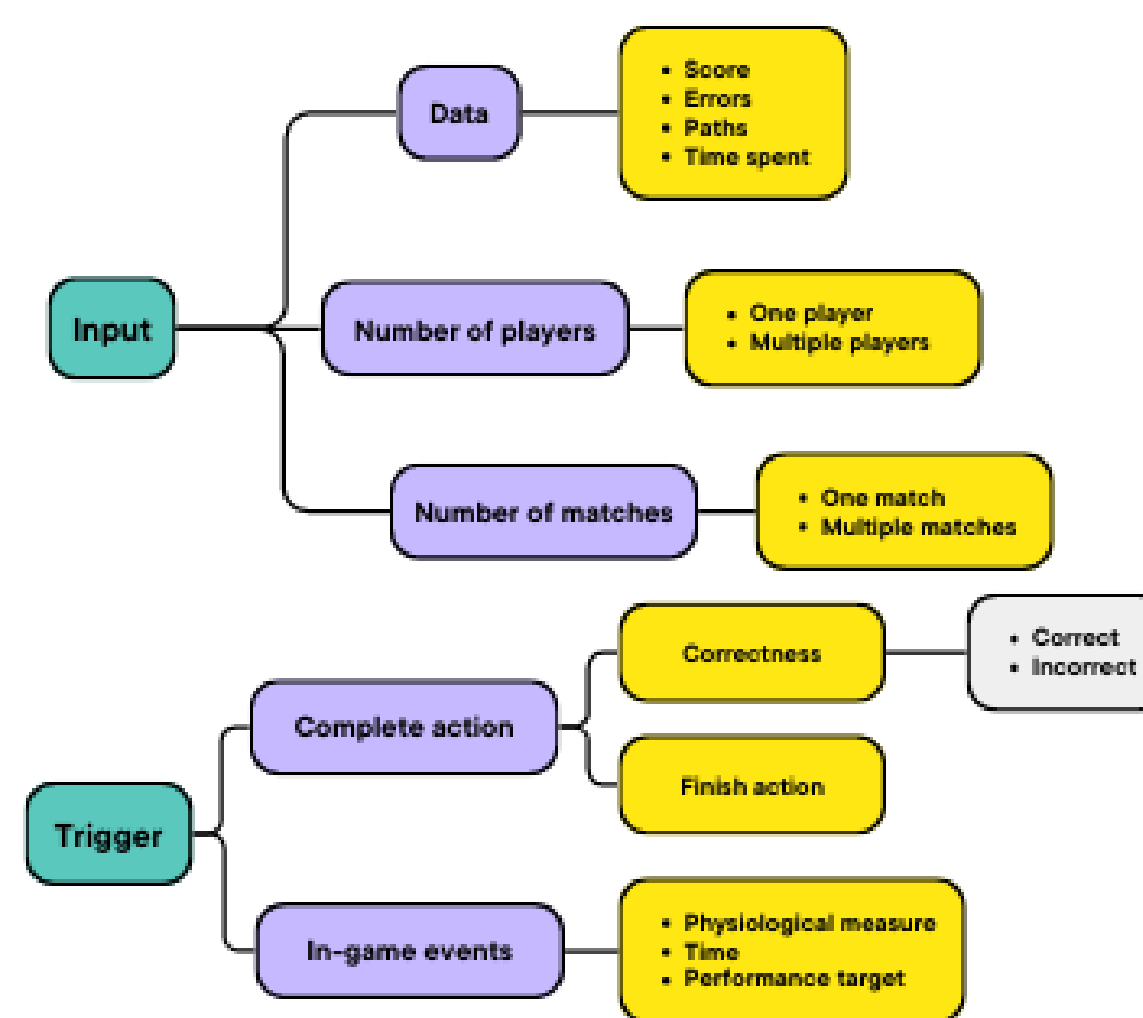
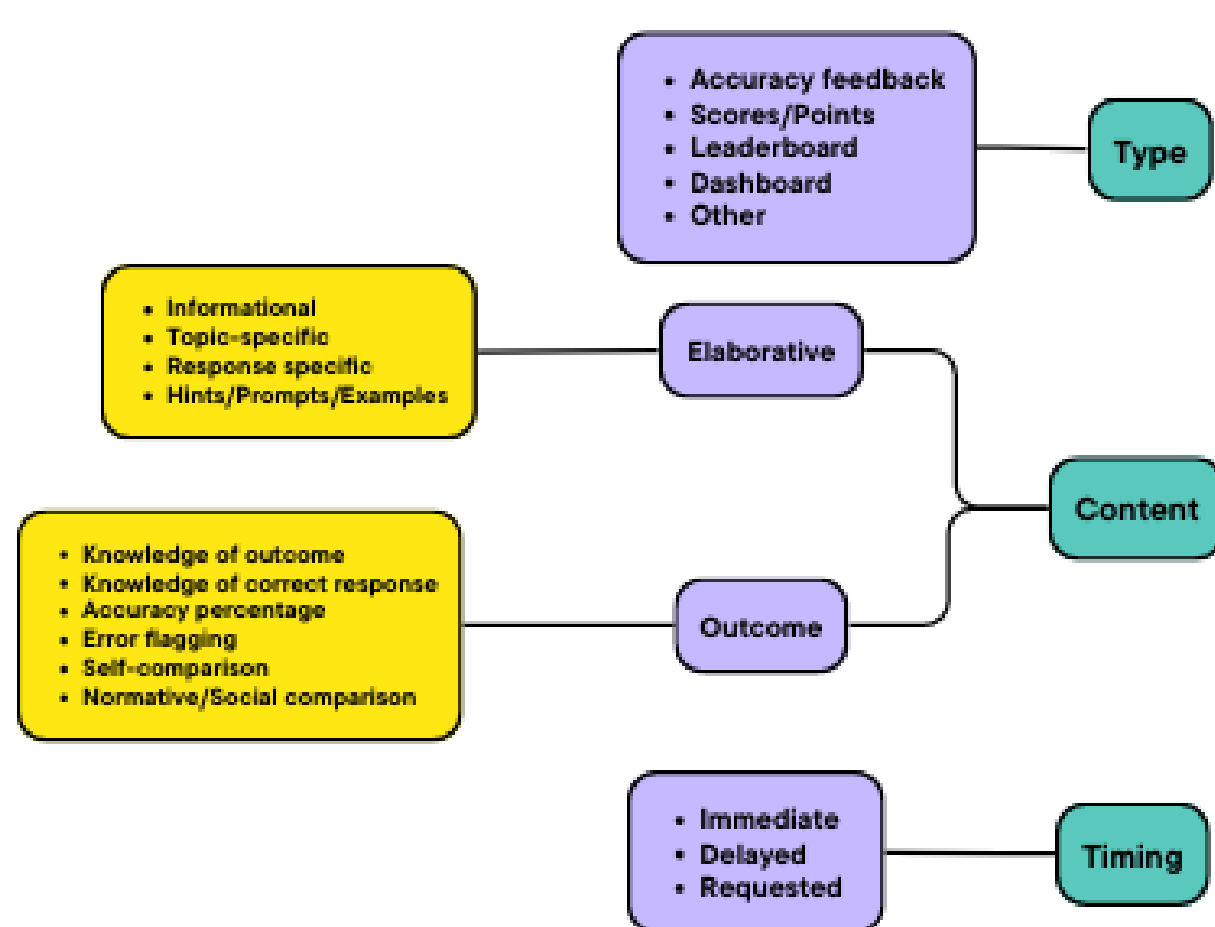
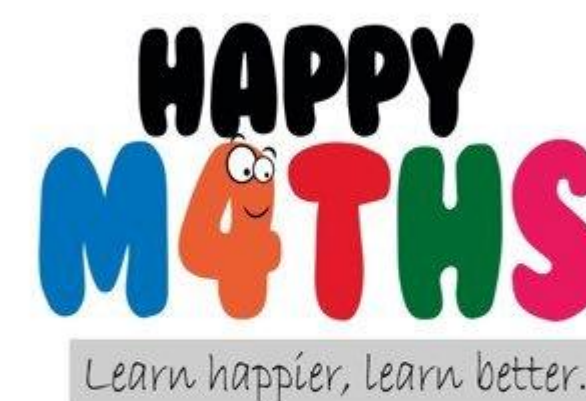
The taxonomy must be validated by independent researchers by classifying several games. The results of this classification will then be compared to analyse the consistency of the taxonomy. This taxonomy will then be used to inform feedback design decisions in a digital mathematics game, which will be applied and tested regarding its effectiveness in mathematics learning and in reducing MA in primary school students.

BACKGROUND

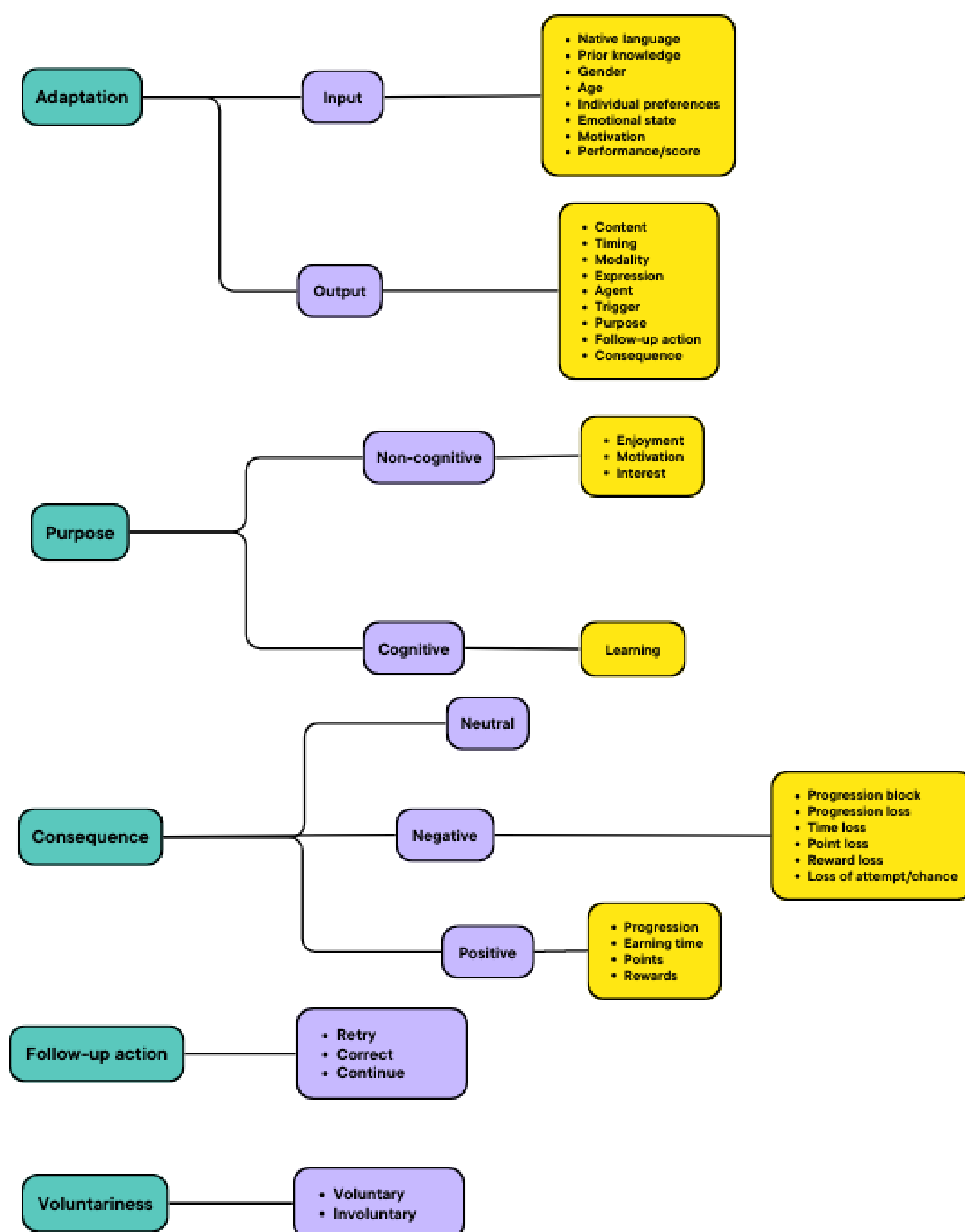
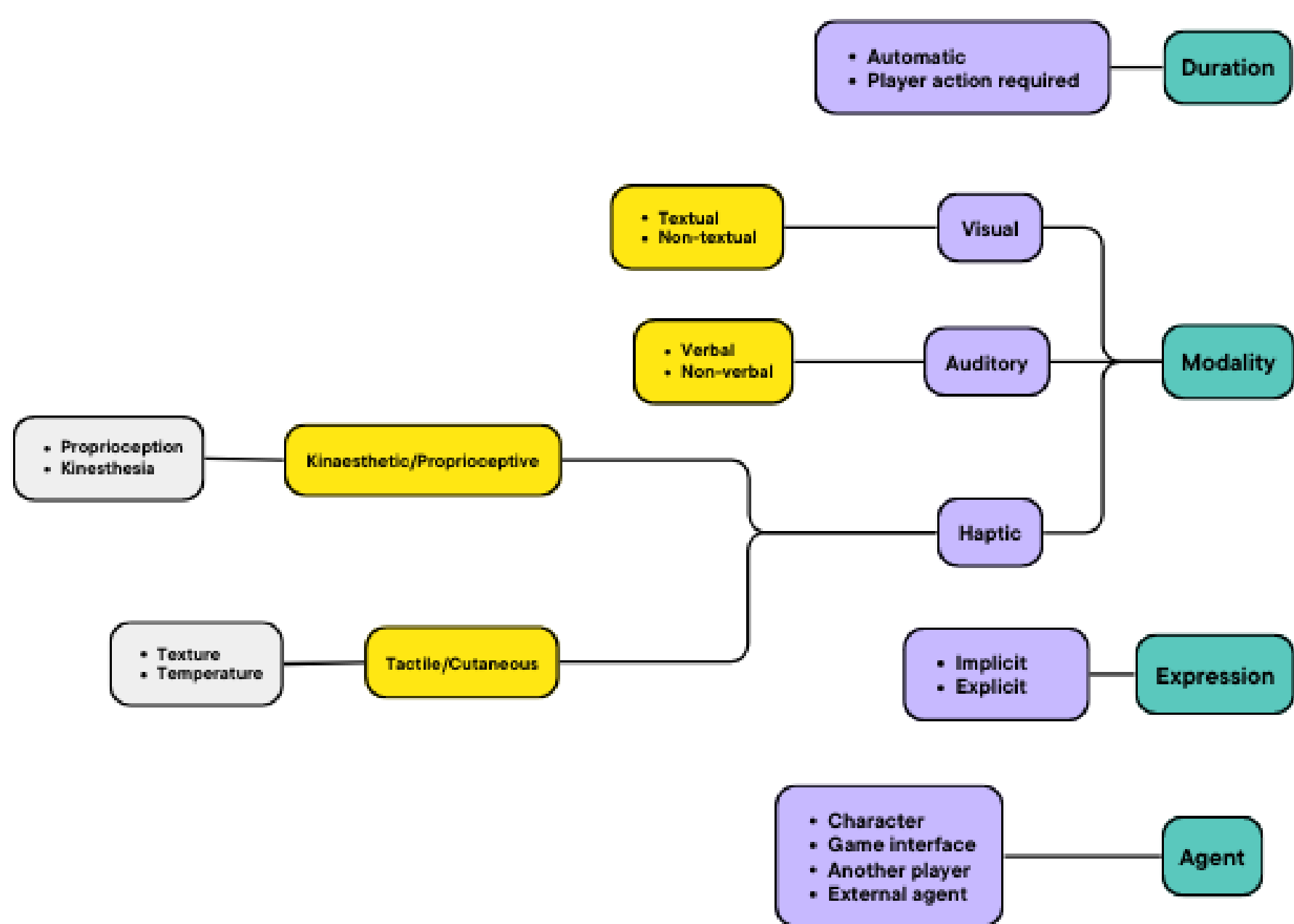
METHODS

Mathematics anxiety (MA) is a negative emotional response towards mathematics that can hinder math learning and lead to poor math skills. Digital game-based learning is one potential approach for reducing MA and benefitting learning, influencing concentration, information assimilation and retention. A game's effectiveness as a learning tool, however, depends on its game features and how these support learning. Feedback features are particularly important, and their characteristics may vary throughout different serious games.

The current taxonomy – the *Taxonomy for Feedback Design in Serious Games* – builds on previous research, including reviews and frameworks, in feedback features in serious games. This taxonomy focuses on game design rather than pedagogy, providing eight new categories when describing different characteristics of feedback. It aims to offer more explicit, descriptive and replicable features to the field of serious games. The taxonomy was applied to games in different subjects in order to test its efficacy.



FEEDBACK FEATURES



SUPERVISORY TEAM

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