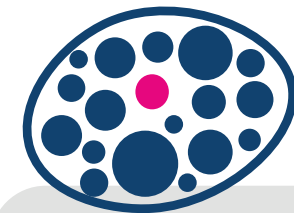




Cognitive Model

In order to successfully tackle a task, mere knowledge alone is inadequate. It necessitates specific cognitive processes to access the knowledge and effectively apply it to a given problem. It is crucial to consider the cognitive process within the framework of feedback generation. This PhD project delves into the exploration of integrating existing taxonomies into adaptive learning environments, aiming to determine the extent to which this integration can be accomplished.



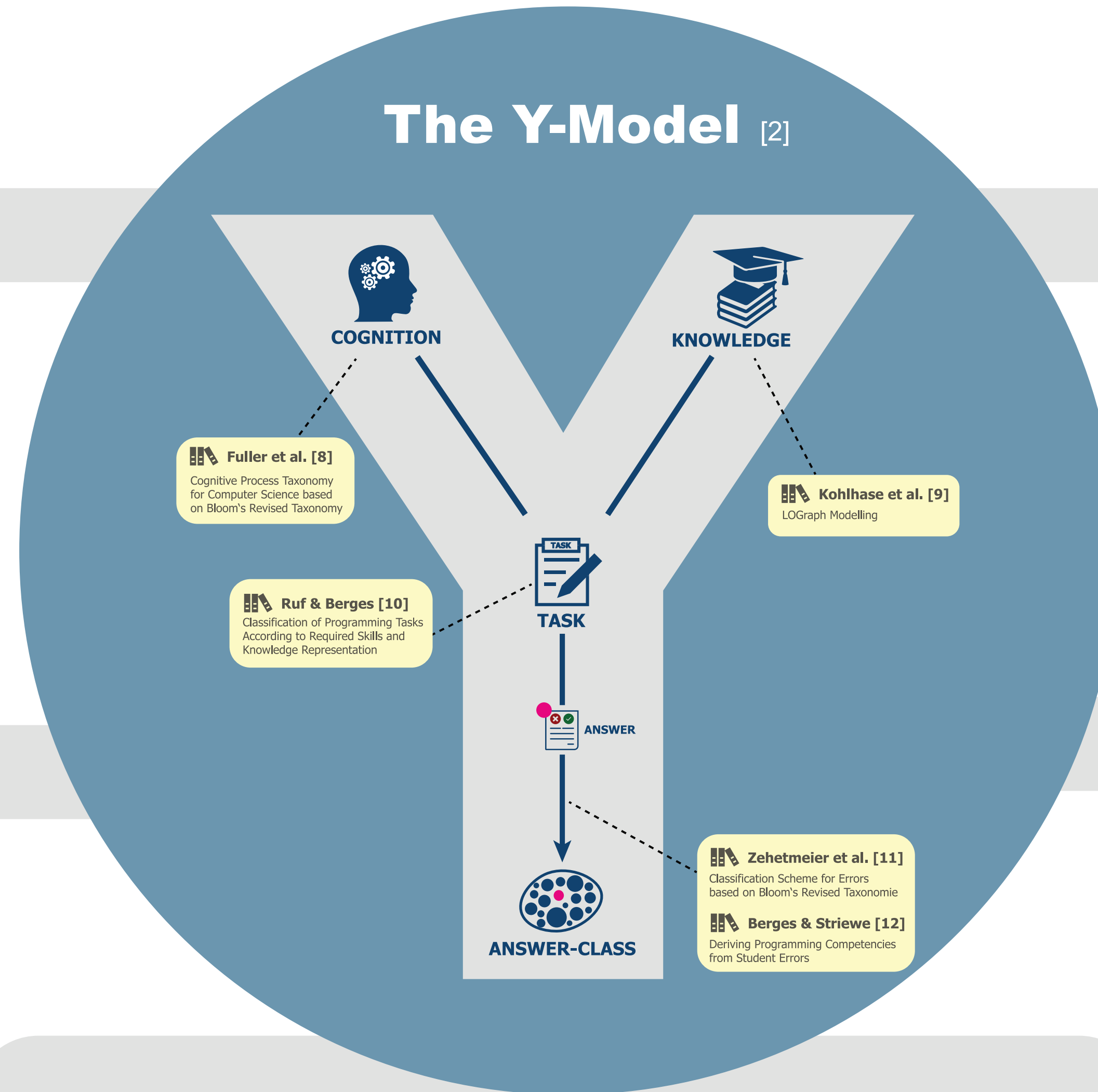
Answer Classes (AC)

The concept of Answer Classes enables a task selection process and adaptive feedback generation depending on answers given from learners. Answers are clustered into classes, which are formed on the basis of objective and observable criteria [7].

[3] Kruse & Lohr et al. 2024 Term Extraction for Domain modeling. DELFI24 Fulda.

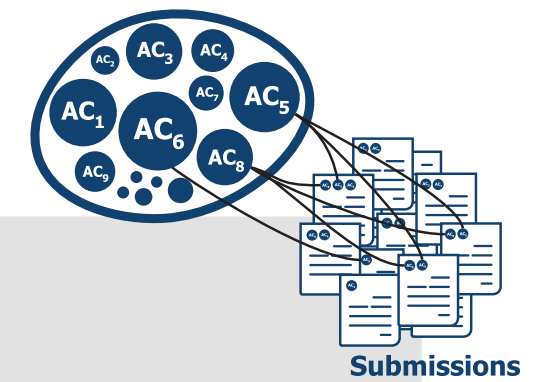
[7] Lohr et al. 2023. The Potential of Answer Classes in Large-scale Written Computer-Science Exams. HDI

The Y-Model [2]



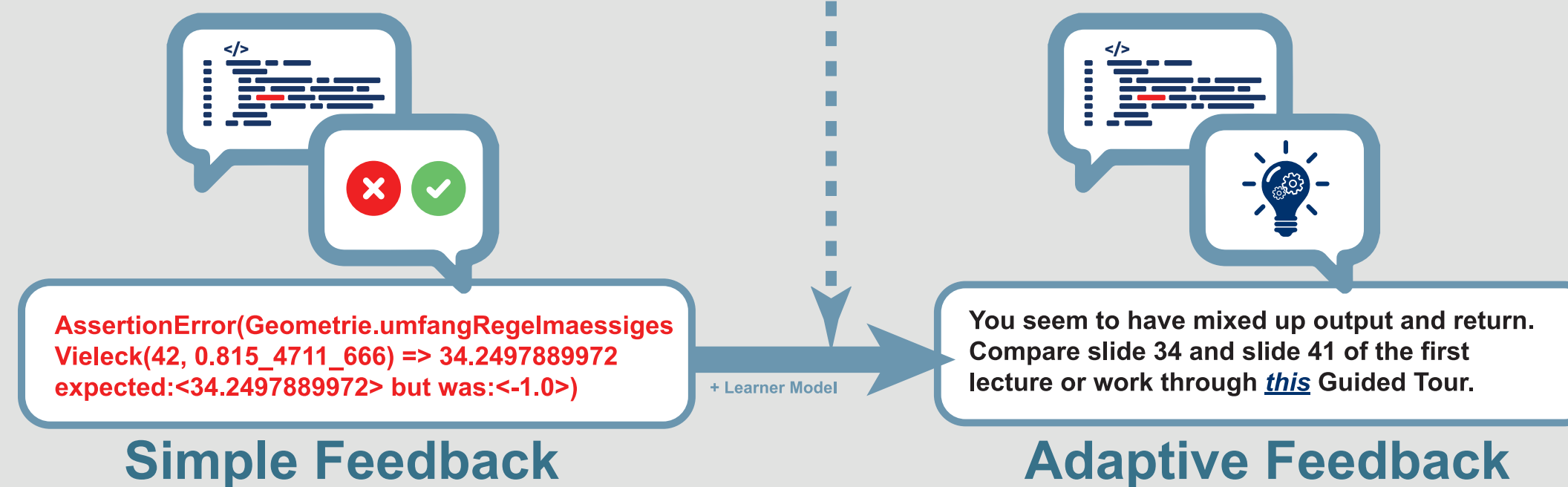
Domain Model

Domain modeling is essential for providing adaptive services to learners. Within the framework of the doctoral project, a domain model is being developed for the subject Computer Science Education (CSE), and for the Fundamentals of Programming [3].



AC Classifier

Reliable classification of answers into specific classes can be achieved using classifiers. To automate this process and eliminate manual intervention, the research project include developing classifiers that can automatically map answers to Answer Classes. The investigation will explore the effectiveness of both static and dynamic code analysis for this purpose.



Simple Feedback

Adaptive Feedback