



## Metadata

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## DECISION MAKING WITH AI

In education and in many other fields, AI is changing the way decisions are made. For example, an AI tool dedicated to foreign language teaching can help to propose the right exercise at the right time. The task likely to be most relevant to a student's next stage of learning is decided by the AI tool using a combination of Hermann Ebbinghaus' "forgetting curve" and the student's model (obtained by tracking the statistics of each word already taught). It's how *Duolingo for Schools* works, for example.

In order to better understand how AI can transform the way decisions are made, it should be remembered that there are three main degrees of involvement of AI in decision making<sup>1</sup>:

- **In Decision automation**, the **system makes the decision** using prescriptive analytics or predictive analytics. Its benefits include speed, scalability and consistency of decision making.
- **In Decision augmentation**, the **system recommends a decision**, or multiple decision alternatives, to human actors using prescriptive or predictive analytics. Its benefits lie in the synergy between human knowledge and the capability of AI to rapidly analyse high volumes of data and to deal with complexity.
- **In Decision support, Human person makes the decision**, supported by descriptive, diagnostic or predictive analytics. Its main benefit lies in the combined application of data-driven insights and human knowledge, expertise and common sense, including "gut feel" and emotions.



And each degree can cover very different realities. For example, decision automation can be used for a wide range of purposes. When an exercise or task is given to a student in regards to its profile by a learning app using AI, it's decision automation. In the case of *Duolingo for schools*, a specific student will be given a task implying words he might be on the verge of forgetting or exercises he could succeed because it is situated in his proximal zone of development. In these cases, the decision made by the AI may be the most relevant and its potential harm seems rather small.

But if an AI system were to propose a legal decision on the basis of a dataset consisting of a series of previous decisions, the implication of this delegation of decision-making to AI has another set of consequences. So, classifying decisions in degrees related to the level of AI implied is not sufficient to understand the role played by AI in changing the way decisions are made. The harm that these decisions may cause must be considered.

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1. [Would You Let Artificial Intelligence Make Your Pay Decisions?](https://www.gartner.com/) - Starita, L. Article on <https://www.gartner.com/> (consulted 06/10/2022). ↪