

Activity 1.3.1 - Humans vs machines

Estimated duration	40 minutes
Requirements	Finish topic 1
Hardware and Software tools used	In class: - Computer for the teacher - Pen and paper Online: - Online meeting platform - Digital device for all - Word processor
Type of assessment	Written contribution

Procedure

1. **Anticipatory set:** the teacher can show a short clip highlighting the interactions and differences between humans and machines, for example the trailer of the movie Her (see resources for Teachers).
2. **Guided practice:** the teacher shows a set of Youtube videos (see resources for Teachers) that illustrate different machines that have been designed to do activities that humans normally do. After each video the class can discuss shortly whether the machine does it better or if humans would do it better.
3. **Independent practice:** the students are now asked to grab pen and paper and create two columns on their piece of paper. In the first column they are asked to write down some tasks in which computers are more efficient than humans, whereas in the second column they are asked to write down tasks in which humans are better than computers. These lists are discussed in class to get an idea of what makes a human intelligent and capable vs a machine.
4. **Direct instruction:** after the categorization from the independent practice, it would be good for the teacher to give a short explanation of what machines are currently better at, how their strength can be used for good and why we still need humans for other skills.
5. **Closing:** to close the activity, a short reflection can be done on what the students have learned during the activity discussing the rationality that characterises human behaviour and problem solving compared to that of machines. Students will reflect on

the fact that humans (instead of machines) do not necessarily choose by considering the best cost-benefit ratio, but by taking into account cultural and normative variables such as interests and values.

Troubleshooting

Possible issue	Possible solution
Students might not be able to understand an English movie trailer.	A trailer could be used from a local movie or one with subtitles in the mother tongue of the students.

Resources for teachers

Anticipatory set:

- Link to the trailer of the movie Her (in English):
<https://www.youtube.com/watch?v=WzV6mXIOVI4>
- Class discussion on rational choices and their consequences: for instance, provide the example of GPS and driving directions systems (such as Google Maps or Waze). Such systems give indications to the driver on the optimal route for reaching the destination using AI algorithms that consider different variables such as traffic conditions and past information on the traffic on the route and estimate the travel time (here an [article](#) for more information). The GPS provides a rational choice for reaching the destination but is it always the best choice? What if the driver wants to reach the destination using a panoramic route? Is it always the best option to provide or use what can be called the most rational option?

Guided practice:

Below a set of videos are listed that can be used. They are mostly in English but often the audio is less relevant to get an idea of what the machine can do.

- Video of a sudoku solving machine: <https://www.youtube.com/watch?v=Mp8Y2yjV4fU>
- Video of a pancake machine: <https://www.youtube.com/watch?v=xYA2d35e-w8>
- Video of a walking robot: <https://www.youtube.com/watch?v=aR5Z6AoMh6U>
- Video of a robot arm that can catch objects:
<https://www.youtube.com/watch?v=M413ILWvrbI>
- Video of a self-driving car: <https://www.youtube.com/watch?v=TsaES--OTzM>

This website includes also some online activities (only in English) on the role of AI
<https://www.mckinsey.com/featured-insights/mckinsey-for-kids/game-on-why-your-computer-earns-faster-and-games-better-than-you-think>