**Topical Summary 2: Education**
Scenario 3

Note: This document is a resource and an aid to the facilitator's understanding of the theme. Reading it will help you to take ownership of the topic of the deliberation in order to properly frame the process.

You will find it here:

- The reasons/advantages of applying AI in the context of the scenario;
- The potential stakes involved, particularly in relation to the topic;
- Real examples of AI application relevant to the context;
- Questions about the scenario, which can help to identify issues and reopen discussion if necessary;
- UNESCO's recommendations that you have to assess, explained and contextualized, with questions to raise that may help to reopen the discussion or bring a relevant angle to it;

Some additional resources to take the discussion further.

## *1.* AI systems in the education field

Customization

Adjusting learning for each student according to his or her needs remains an ideal that is difficult to achieve. With the development of AI systems in education, the goal of customizing education becomes possible. The course content and student assessment materials can be adapted for each student.

AI can help teachers identify weaknesses or learning gaps in students who require special attention. Analyzing data on relative student performance reduces teachers' workload and makes their educational intervention more effective. Some AI systems can automatically analyze student behaviour (agitation), performance (reading speed), or facial expressions to identify potential difficulties of comprehension, prompt the student to ask a question, or give the teacher the opportunity to intervene in a targeted manner.

AI is being used to provide an additional solution in the effort to reduce dropout rates. It also allows more advanced students to progress at their own pace and avoid boredom.

Inclusion

AI thus helps to overcome apparent injustices inherent to standardized school systems. Because students are required to follow a relatively uniform learning path without being able to take account of their differences and their own aptitudes, a certain number of students experience academic failure, and are sometimes victims of double discrimination—both at school and after leaving school.

Educational AI systems could thus facilitate inclusion by making courses accessible to students who are disadvantaged, in the course of a transition (particularly when they do not yet speak the host language after emigration), or living with disabilities (visual or hearing impairments for example).

Accessibility

Because it is intangible (relatively speaking at least, because it also relies on tangible infrastructure), AI can enable students who are unable to travel easily, to access distance learning with the benefit of personalized follow-up. This is notably the case for students in rural areas without schools or teachers, provided that access to digital infrastructure is possible.

Even for students with traditional schooling, AI can assist them at home to review lessons or advance their learning path.

Lastly, these educational systems enable working adults to benefit from training, particularly language training, when convenient to them and without any travel time.

### *2. Issues and controversies related to the topic*

Inclusion and equity

Although often presented as intangible, AI is based on hardware infrastructure, from data servers to terminals (such as personal computers or smartphones) used to access applications. However, a significant part of the world's population does not have access to this infrastructure. Inequality in access to AI can reinforce other socio-economic inequalities and become a factor in the long-term exclusion of vulnerable groups.

Protection of personal data

Since educational AI systems can only function by processing students' personal data, the collection and protection of personal data is a major issue. Data on students' habits, cognitive traits, personality, skill level, etc. are sensitive information. The collection of data raises ethical issues related to privacy (the detection of personal feelings through facial analysis), the autonomy of people who consent to the use of their personal data, as well as the wellbeing of people who are scrutinized by AI systems.

The role of teachers in the learning process

The replacement of humans by machines for teaching tasks is a major social issue. This not only raises the question of job losses, but also the loss of social and socializing relationships between students and teachers that enhance the quality of learning.

### *3. Actual cases*

The intelligent Century application (https://www.century.tech) allows learning content and exams to be adjusted according to students' strengths and weaknesses. It provides an interface for teachers to track student progress and to target their educational intervention.

### *4. Questions about the scenario*

Personal fulfilment

What form of consent should be sought from users? What type of data is allowed to be collected? For what well-defined purpose,

- Should AI be used as a primary or secondary/peripheral tool in education?
- Is AI really going to solve problems related to accessibility and inclusion related to individual differences?
- Should AI be mandated in education? Should we offer a hybrid education system—with and without AI—and give students and their families a choice?
- Could AI further exacerbate inequalities between students with access to digital infrastructure and those without?
- Should human teaching methods be reviewed with the introduction of AI systems?
- Should schools continue to be physical gathering places for students as we know them today?
- Would it be easier to implement and use AI in objective, scientific fields (mathematics, biology, etc.) rather than humanities?

***5. Recommendations/governance mechanisms***

One of the objectives of the UNESCO recommendation is to strengthen individuals' human capacities (capacity building). Strategic Action 5 deals with the promotion of AI education and awareness. Within this framework, the use of AI in education is encouraged:

> R 71: "Member States should encourage research initiatives on the use of AI in teaching, teacher training and e-learning, among other topics, in a way that enhances opportunities and mitigates the challenges and risks associated with these technologies. This should always be accompanied by an adequate impact assessment of the quality of education and impact on students and teachers of the use of AI and ensure that AI empowers and enhances the experience for both groups."

- Do you agree with this recommendation? Should AI-assisted learning be encouraged?
- Under what conditions do you think the use of AI in education is desirable?
- Should it concern all disciplines?

If the purpose of using AI systems in education is to personalize student monitoring, it remains to be seen whether this could result in the homogenization of teaching methods, or the evaluation of students with quantified, measured objectives.

- In such a case, is the above paragraph R 71 consistent with R 50, which supports the ideal of skills such as "learning how to learn" when AI systems have limited educational objectives?

Another issue is the risk of over-determining students' learning pathways and career prospects in early childhood. By relying on algorithmic assessments, human teachers and guidance officers may, early in a student's journey, impose certain studies on the student over others, thereby restricting the student's opportunities for growth through study, and closing potential career paths. The issue at stake is the processing of data, but also their storage in educational institutions and their use after the end of schooling:

> R 99: "Member States should ensure that individuals can oversee the use of their private information/data, in particular that they retain the right to access their own data, and 'the right to be forgotten.'"

- What should be the limits of AI systems' memory in relation to students? Should they remember only general assessments, as in existing school systems, and forget the data collected on a daily basis? Or should they keep all the learning data in memory?
- Should students have the right to be forgotten, in particular to prevent past events and behaviours from having a negative impact on their future?

Paragraph R 71 provides for an impact assessment on the use of AI systems on the quality of education, which is in line with the more general recommendation in paragraph R 95.

- How can an impact assessment be done without sacrificing the fate of some students?
- Should mechanisms be found to facilitate reporting of discriminatory AIS use in education?
- What recourse should be available to individuals who are victims of algorithmic decision errors?

In order to verify that AI systems operate in accordance with ethical criteria (promotion of self-fulfillment and autonomy, respect for diversity, defence of equality), the preliminary text of the recommendation provides for the establishment of a certification system:

> R°57: "Member States are encouraged to consider a certification mechanism for AI systems similar to the ones used for medical devices. This can include different classes of certification according to the sensitivity of the application domain and expected impact on human lives, the environment, ethical considerations such as equality, diversity and cultural values, among others. Such a mechanism might include different levels of audit of systems, data, and ethical compliance."

- In order to ensure that certifications are in line with social expectations, who should be involved in the development of these certifications?
- Should there be multiparty and citizen oversight?
- In order to ensure that AI systems operate in accordance with their certification, should States impose audit mechanisms that provide access to codes and databases and allow for more comprehensive impact assessments?

Paragraph 94 of the recommendation, which deals with responsibility, notes that "responsibility should not be delegated to an AI system, nor should a legal personality be given to an AI system."

- In the education field more specifically, does this mean that AI systems cannot be held responsible for assessing students with the potential for error?
- Who should be responsible if assessments and decisions are challenged?
- If they cannot be held accountable, should they still be responsible for evaluating students?