Towards AI-Powered Data-Informed Education - Dr. Sihem Amer-Yahia

Dr. Amer-Yahia states that she is going to focus on the following component in regard to the meaning of education:

“The knowledge, skill, and understanding that you get from attending a school, college, or a university.” (Dr. Amer-Yahia)

Our presenter starts out by doing a quick recap of education throughout mankind’s history. I am interested to see where she is going to go with the talk. In this discussion she brings up that the U of M traces its history all the way back to 1851, which is seven years before its statehood. From this we go right into Online Education Platforms, a transition that seemed a bit abrupt. I do not agree with her as to why Online Education Platforms have gained so much traction. In my own humble opinion it has to do with cost to the student, cost to the university or education institution, and the lack of rigor in regards to student assessment. After all, there is still some stigma around a degree that was completed totally with on-line work, is there not? (Then again, maybe it is just because I am older and there really isn’t such a stigma anymore…)

Of course now that AI is here it only makes sense to integrate it into different learning platforms. After giving a brief overview of several learning platforms we are presented with the learning theory, Zone of Proximal Flow. This is the zone in between what the learner can do unaided and the zone of what the learner can do. That is, it is “something” the learner can do but only with guidance. This guidance can come in the form of guidance from teachers, peers, or even algorithms. Along with this is the notion of a Flow zone. That zone which sits in between boredom and anxiety (frustration) for students. One of the pieces that the presenter alludes to and I can see AI striving for is to guide students in learning something that they cannot already do by themselves and to keep the learning in this Flow zone.

From here, Dr. Amer-Yahia transitions to test recommendations. That is, what sequence of tests will help a learner upskill quicker? She states that if all you are doing is optimizing performance then the learner will stay in the boredom zone. However, if you optimize for the learner’s aptitude then you are going to keep the learner in the frustration (anxiety) zone. What researchers are trying to do is to get an AI model in place that takes into account the expected performance, aptitude, and the learning gap of the student in regard to the sequence of tests given to someone trying to learn a skill.

Integrating AI into the learning platform touches upon the ethics of AI in education. This is quoted directly from Dr. Amer-Yahia’s slide (I have not seen this before and am interested in knowing these so I am quoting directly.) “Ethics in AI takes into account, informed consent and privacy of data, management of data, interpretations of data, and data representativity.” Dr. Amer-Yahia also goes into the ethics of AI in education which takes the above ethics list into account and gives it an educational bent.

One interesting topic that she brings up is in terms of consent in regards to data collection. How would a person who is of average intelligence in regards to computers and computer systems ever be able to give informed consent as it applies to AI learning platforms. Would such a person truly understand what data AI is collecting and how it is being used? I think not. So, if an average person does not understand how the data is being used, and even collected, then how can he/she give any type of informed consent of collection and usage of said data? How would you even contest AI assessments and/or recommendations of an AI learning platform? Good questions.

The other piece of ethics with using AI in education is trying to measure the AI tool’s impact on “learner cognition, mental health, classroom practices, or the teacher’s role”. (presenter’s slide) These all seem to be very qualitative attributes which are very hard to measure. To be fair there is probably not an acceptable code of ethics/conduct when it comes to these attributes in the educational environment so how would we measure the impact of an AI learning platform? As the speaker continues discussing the ethics of AI in education, my thought is that the educational institutions need to come together and discuss ethics in all of its different forms such as learner-facing, teacher-facing, institution-facing, etc. Only then can we have the discussion around the ethics of AI in education.