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SMART EDUCATION: SOME OPPORTUNITIES AND THREATS

Introduction

The subject of the conference held at Kharkiv University of Humanities "People's Ukrainian Academy", 14 February 2019 is "Smart education in a smart society: possible ways of adaptation". In this paper I will address smart learning environment through noticing a.) the initial strength it has through being student supported; b.) that through enlarging our communicative sphere smart learning can be performed with higher levels of flexibility and be more adjusted to the needs of the students; c.) that it can further the division of labor in the educational system, but d.) the opportunities of smart education can be ruined if the student is not trained to be smart, i.e., to have a good critical capacity.

Smart learning environment

Smart learning is centred around the student: to "…create learning environments that respond to each learner's profile and needs and offer conditions for realizing personalized and adaptive learning "(Kiryakova, Angelova&Yordanova, 2018:558). It is not focused on the physical establishment of the university or on the teacher. The 'smartness' of the concept has been defined as "…Self-directed, Motivated, Adaptive, Resource-enriched, and Technologies-embedded" (Zhu, Yu&Riezebos, 2016:3).Smart learning environment (SLE) has a variety of definitions (Hoel& Mason, 2018), but for simplicity I define SLE as the environment in which the student is situated, that directs the students learning through stimulating, motivating and forcing student to interact with learning devices.

The devices of learning environments are the traditional ones, the teacher and the scientific literature (since I only consider academic training). But learning devices are also the information and communication technology (ICT), such as internet, smart phones and learning platforms,and the organisations dealing with the subject area and other students.

SLE tend to focus on learning devises that belong to ICT, i.e., the new technology originated from computer technology (computer, internet, smart phones). These devices have expanded the learning environment, making it more flexible in place and time. Thus, it fits well with both the demands put up by todays students, the millennials, and todays requirement of continuous learning. But SLE does not only put a dynamic pressure on pedagogy but also on the traditional institutions of learning, driving division of labour further.

Today's students: The millennials

Smart education has been made possible through the technology development of computers and their software, such as Cobol in the 50'ies, the development of Internet in the 80'ies and the smart phone in the 90'ies. Interesting enough, one of the drivers of smart education are the students, the generation that has been borned and raised in an environment of computers, internet and smart phones, termed the millennials (Weber, 2017). While teachers learn and adjust slowly, the students arrive to the university with their life time experience of the technology and expects the technology and its opportunities to be utilized. Thus, there is an element of demand driven development in smart education. That is an advantage when creating smart education environment since the users does hardly need any education in how to interact in the SLE. The teachers, on the other hand, are those that in general need education. It could be a challenge to get acceptance for the SLE by the teachers, even if they are located at universities, where one of the basic value ought to be continuous learning.

In order to develop and establish a SLE it is not necessary to involve students in order to teach them. They should, however, be involved since they can contribute with their expectations and demands, but also by them teaching and inspiring the teachers how to use the technology in order to create a SLE with engaged teachers and students.

Thus, the students, the millennials, will be the utilisers as well as the developers of the SLE.

Communication forms

Communication are the symbols, sounds and, images that the student receive, process and transforms into knowledge. Communication were in the old universities restricted to the lecture by the teacher. When the printed book arrived, more and slightly different forms of communication for learning were made possible. A book has, however, one disadvantage compared to the lecture, that it is *monological*, it cannot interact but tells a story and the student process the monologue in solitarity. On the other hand, a book is possible to return to, and to get the same message since the information is frozen on the book page. With books comes also possibility to receive information that is larger and different from the one the lecturer can provide.

The recorded video lecture, that is part of today`s SLE, offers the lively presentation that is the advantage of the lecture, and the variety of content that the book brings, since a course can be made up of lectures by the teacher of the course and/or by lectures published by others on the internet. The advantage is that the student gets the lively presentation through lectures, when it fits the student. But the video lecture has the limitation of a book since it is monological.

Dialogical communication forms have the learning advantages of putting the students understanding in questions, beyond the self-criticism, which will stimulate the student to develop the understanding through arguing and reflecting beyond the self-reflection. It can be simple dialogue through written messages, with the advantage to not presume simultaneous interaction, thus being independent in time. But dialogue performed at the same time, through presence in the same room or through internet devises offer a stronger interaction, but less immediate time for reflection.

Dialogical communication can be performed with other students and with a teacher. Dialogue between students do not offer the same learning possibility as interaction with a teacher, but it makes it possible for a student to develop their own thoughts through discussion.

In a SLEone could create learning blocks, starting with lectures on-line and books to read, which create highest flexibility of time for the student and do not involve any teacher engagement and thereby avoid teacher time and costs.The course

could continue with student interaction, where they develop their understanding through interaction with other students, at the price of no flexibility in time. At the end of this process, they can meet the teacher, when they are prepared to have a strong dialogue with the teacher. Thus, SLEcan combine different communication forms, adjusted to the needs of the student and fitted to the pedagogical needs that the knowledge demands.

Arenas of interaction and their communicative capacity

SLEopens up for more diverse arenas of interaction. In the old university there were mainly one arena of interaction, the physical university building, in which students and teachers interacted physically, where speech and body language communicated in a dialogical way. With paper and pen comes written interaction in a monological way. With the telephone, interaction could become phonetically, i.e., only through speech. With internet, interaction could be the monological but faster than paper and pen, with written interaction through chatt-functions. But more important is that internet made it possible withimagerically interaction, which resembles the interaction in the lecture room, although being reduced to two dimensions and reduced in capacity to transmit body language.

The arenas are different in many aspects and their capacity to produce knowledge effects differ.Indeed, the richest interaction is the old university arena, with dialog in three dimensions, including both speech and body language. But through the imagerically interaction by means such as Skype, Adobe connect, Appear.in the teaching can approach the strong, dialogical interaction of the university lecture room, without the price being paid through being forced to be at the same place. While this interaction is located in time, it is geographically flexible, making it possible to have good quality interaction with students and teachers situated all over the globe.

Smart division of labour between nodes of education, grading organizations and diploma organisations

The university started as a physical place where students and teachers met, where teaching, grading and diplomas were produced. The university where granted

the right to issue diplomas by the government, probably after being evaluated on their teaching and grading skills. The importance of the physical place was reduced when distant learning was introduced, through written documents mailed through the ordinary post system. Distant learning increased substantially through the development of communication technology, especially through internets capacity to create channels of communication. Today we have universities that do not have a physical place, but is but a node where teachers and students log in and conduct the education. But still the university contains teaching, grading and issue of diplomas.

It is, however, possible that these three activities become separated. It is conceivable that there could exist nodes of education, where the teaching is conducted. The nodes are arranged by a person, a group of persons or an organization that have distinct knowledge and capacity to transmit the knowledge. The educational node can arrange a course, with proper learning outcomes that mark the quality of the course. Students enrol and pay the fee for the course. The node of education could conduct the grading, which is made in relation to the learning outcome.

There could, however, exists grading organizations that are specialized in grading students relative learning outcomes. They arrange examinations, students enrol for the examination and receives a grade document.

There could then be diploma organizations that have the university status to issue university diplomas. They do not need to teach or to grade. Their activity consists in evaluating the quality of grading of the grading organizations. If acceptable, the diploma organization can convert the grades from the different grading organizations into diplomas.

The reason that these three activities still tend to be enclosed into one organisation, called university, is partly because of transaction costs reasons, that the coordination and the quality control can more easily be performed within one organization, instead of being performed a market for courses, gradings and diplomas. But the universities do also exist out of pure tradition, and because these organizations have power to repress the market, mainly through their reputation.

SLE and critical thinking: The risk of Fake knowledge

Academic education deals with a.) gaining established scientific knowledge, b.) to be able to evaluate the knowledge, and finally, c.) to be able to create new scientific knowledge. Before the ICT revolution, the university had a rather strong control of the knowledge transmitted. The teachers lectured, and they recommended the books containing the knowledge. Today, the sources of information, and thereby sources for knowledge creation are numerous and out of control for the university and the teachers. Thus, the student's capacity to be able to critically assess these sources is very important today. Therefore, the teaching has to be concerned with developing the critical capacity of the students. The paradox of SLE is that this capacity can probably best be promoted and developed through personal interaction with the teacher. It is a very costly teaching method, both in time and money, and it is rather inflexible in time, but not in location. But without this interaction, focused on developing the student's critical capacity, the SLE creates students lacking critical capacity and they will therefore be subject to irrational influence. The starting point of SLE was the Millennias, the autonomous and almost narcissistic individuals (Weber, 2017), but the result, if not their critical capacity is properly trained, can be an individual drifting in the ocean of fake knowledge.

References

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