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Digital Pedagogy - New Perspectives and Approaches

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Abstract

The digital age is different from any other age that preceded it in that it is based first and foremost on technology. Unlike previous periods in history technology played a major role in shaping, and this period is shaped by it. Technology allows us to maintain a community in the absence of a community. There is a paradox here – technology makes it possible to maintain contact between people, and creates a sense of community, but at the same time increases the actual disconnection between community members. Digital technology also appeals to another strong driving force and that is excitement. Create around the technology a sense of the same aura that was lost with the transition to mass and duplicated technology. We are promised a different experience, we are promised that our lives will be better, that we will be more independent, more connected, aware, and important.

Keywords: Digital Pedagogy, digital age, Philosophy of education, Learning Technology.

1. Philosophy of education in the digital age

The digital age is different from any other age that preceded it in that it is based first and foremost on technology. Unlike previous periods in history technology played a major role in shaping, and this period is shaped by it.

The great upheavals known to humanity usually resulted from philosophical, political, and economic thought or from wars. The digital revolution attacks us in a completely different way, although it is mostly driven by economic considerations, it appeals to emotion and not to rationality.

Digital technology conquers and takes over every area of our lives without providing reasons why our lives will be better and how. Instead of rational persuasion, we turn to two other strong forces that influence our decisions and are related to each other - community and excitement.

The desire to belong to the community is an extremely powerful force. Humans are social animals and need contact with others to live a prosperous life. In the time we live in, the community is becoming more and more virtual, fragmented, and dependent on interests.

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Digital technology also appeals to another strong driving force and that is excitement. Create around the technology a sense of the same aura that was lost with the transition to mass and duplicated technology. We are promised a different experience, we are promised that our lives will be better, that we will be more independent, more connected, aware, and important.

Not everything is negative of course, digital technology allows us to do things that were only a dream 30 years ago. It gives the individual and the community tools to create new knowledge, for learning and development. It makes it possible to maintain contact with distant people, to blur national borders, and to encourage civil democratic action.

The effects of technology on our lives are greater than we sometimes want to admit, so we must ask ourselves sharp questions about the nature of the time in which we live.

We must examine what kind of education is suitable for such a challenging period. In what way can technology be harnessed in education and how should education deal with its less desirable effects?

This is a big challenge that we are only at the beginning of. Education in the Western world has hardly changed since it was created, in the peak days of the industrial revolution. Today, we must adapt education to the changing world to truly improve our quality of life and quality of being.

2. Digital learning

2.1 *Characteristics of digital learning*

Digital learning is the latest pedagogic infrastructure in the 12th century, which includes teaching-learning methods integrated with information and communication technology in an online learning environment, and the implementation of appropriate modes of conduct in the online space for educational purposes.

This learning is based on the accessibility and use of units and digital teaching-learning materials, alongside online information sources, which are available to the teacher and the learners to build knowledge based on research, sharing, expansion, and deepening.

Its main characteristics are (Kleinberger, 1989):

- Personalization and flexibility – a central component of personal learning, which allows for personalization starting from the interface to the arrangement and management of personal information and access to it, up to the manner, duration, order, and content of the learning earning management – led and led by the teacher, with significant educational support for the learner, which enables personal autonomous learning and cooperative.
- Collaborative Ness and friendships – cooperative learning between the learners, which is founded by a common educational vision.
- Digital learning materials – use of high-quality digital learning materials, where the learning method is customized to the needs of each learner.
- Up-to-date and transparency – driven by up-to-date information by the needs of the teaching and the learner, transparency as well as sequence and continuity concerning the “big picture” of the learner’s knowledge and his world, cross-disciplinary topics, etc.’

2.2 *Digital text*

In every reference to learning in general and its application and realization through technology, the concept of text must be referred to, that we are the means of expression and transmission of ideas and information. A text is a mediator (medium) that transfers data and interpersonal messages from the authority of the many to the individual, and vice versa.

For example, verbal text, mathematical text, movement text, visual text such as a picture, video, cinema, theater, audio text such as music, recorded voice-overs, etc. The text is a means created by man, which is a series of agreed signs, through which information is transferred between one another.

A digital text is saved, displayed, and transmitted in computer systems, and creates an up-to-date meaning for the text, which is characterized by three main aspects: appears in a variety of media: written, visual, audio, and a combination of them enables access to information found in infinite layers, most of which are invisible and not in the user's possession, but accessible at any time and for any personal need at the appropriate time can be easily reproduced, changed, passed on to others, published, Process for personal needs and save it.

2.3 *"Textbook" and "Digital Teaching-Learning Units"*

Already today, the number of copies of books sold in digital format is equal to and even exceeds, the number of copies sold as a printed book, and the trend to switch to browsing, reading, and any activity with digital information is accelerating greatly.

Along with the trend of a personal computer device for everyone (laptop, tablet, phone), it seems that in a few more years, even in the education system, most of the accessibility to educational information will be through digital text and not the printed and written one.

A current approach to learning requires the implementation of digital learning, not as a luxury, but as a routine practice in which learning takes place and relies on information available in a digital text.

To adapt to today's current learning, digital learning, the definition of "textbook" in particular, and "learning materials" in general, must also be updated, for each type and format.

3. The importance of digital learning in education in the 21st century

Digital learning, which is learning through online and computerized means with digital text, first reflects the conduct of a modern teacher in a modern learning environment in a pedagogy appropriate to the 12th century.

There are more and more signs that as online learning environments take place in the classroom and among learners outside of it, the occasional learner has leveraged Learning through the integration of technology, better accessibility, improving learner involvement and motivation including achievements, and increasing learning efficiency.

Already today it is possible to see in practice, a positive central trend that is taking shape in everything related to the educational values added in digital learning, as reflected in large-scale studies of many hundreds of schools (such as the RED project detailed below).

We will see later, that the preoccupation with examining the efficiency, feasibility, and effectiveness of digital learning in general, and reading and perusal of digital text in particular, compared to traditional teaching, and the traditional book, serves us as essential feedback for

learning how to apply digital learning intelligently, and not whether to apply and to remain in learning in the traditional environment of a blackboard and a printed book (Cohen, 1983).

3.1 *Key advantages of digital learning*

(1) The effectiveness of learning

There are more and more signs, as online learning environments take a place in the classroom and among learners outside of it, that leveraging learning through the integration of technology brings better accessibility, improves learner involvement and motivation, including achievements, and increases the effectiveness of learning, such as:

- Recent studies presented by the American Department of Education, conducted on a large scale of schools and several learners, show that digital learning significantly reduces the time in which the learner achieves the learning goals. Already now there are clear indications of a better level of achievement of learners in digital learning, which includes personal and collaborative learning in online spaces outside of school class hours.

- According to the reports of the "RED" project (a national initiative in the USA among 999 schools and hundreds of thousands of learners), which investigates how technology creates a change in education (12 continuous access of each learner to a computer device connected to the Internet, causes a significant improvement in learning efficiency, including achievements studies, for economic advantages, especially in places where technology is intelligently integrated.

According to the report of the RED project – cooperative learning contributes to a significant improvement in educational achievements, including an increase in the number of graduates who successfully finished school. The significant advantage is emphasized, among other things, on the personal adaptation of the learning pace to the students, and the contribution of social learning to the degree of satisfaction, motivation, and active integration in learning. (Adar, 2007; Galily & Schwartz, 2021).

(2) The involvement of the learners

The students as "digital natives" have no difficulty integrating into digital learning, which educates them for learning while using the same technology they use for communication and spending their free time outside of school.

This figure does not state that the students should engage only in technology, but instead of a uniform reference usually to class, with them, learning modes of traditional teaching-learning, digital learning enables adjustment to the personal needs of each learner, and active learning in a much more enhanced way than in traditional learning. However, it must be remembered that the utilization of advantages and the enabling of technology.

Learning depends first all on the proper functioning of the teacher, on a significant backing of a clear vision of the educational leadership and its implementation in the field, full involvement of the director/leadership of the institution, and appropriate guidance and training of the educational staff.

(3) Increasing equal opportunities

Digital learning increases the equality of learning opportunities for all learners, by providing access to a wide variety of tools, resources, and educational content in any subject, regardless of the place of residence, and the socio-economic status, if the student has access to the Internet.

(4) Educational content

Digital content includes a rich variety of topics and information and enables interaction with materials, information sources, teachers, learning colleagues, and experts outside the classroom. Digital content can be easily updated by its owner, as well as edited and adapted to the context by a learner or teacher, and in a practical way almost infinite in quantity and variety, as a means of study in all areas of information and subjects studied.

(5) Cost

Replacing the textbooks, as well as tests, reports, sessions, etc., with digital content and means, includes long-term also real cost savings.

Such savings are not immediate, since the conversion and connection of digital learning materials require a large initial investment in planning, broadband communication infrastructures in educational institutions, the purchase of equipment and ongoing maintenance, software and tools, and teacher training.

Long-term thinking in the implementation of digital learning, aiming at the educational benefits for learners inherent in the use of digital materials, is incomparably more important than calculating cost versus benefit in the immediate term.

It seems that in the long term, the investment in learning materials for each learner will be significantly lower than what exists today, with significant advantages in aspects such as a significant increase in the time the teacher is present among the learners, reducing the cost of photographs and paper, online assessment at the appropriate time during learning, "hand on the pulse" on the pace of progress of every learner at any time, and as a result – reducing dropouts, especially in the higher age groups (Adar, 2007).

In addition to the above advantages (listed in the report Guide for Kindergarten-High School Educational Leadership to Gain Experience in Digital Learning, it is also possible to note:

- Strengthening the opportunities for professional development over time for teachers.
- Completing, diversifying, and deepening the learning activities (teaching-learning-evaluation) in response to the needs of the learner who is in the spirit of current digital learning.
- Refining and increasing the efficiency of learning management and control processes.
- A large variety of options for externalizing and publicizing the learner's knowledge, in media rich in visualization and audio.

3.2 *Digital reading*

The reference to a digital text still focuses to this day on the educational discourse, the efficiency, and the reading experience. This is a central but not the only aspect of the learner's learning experience in an interactive environment that is customized for the learner.

Reading and using a digital text, rather than the traditional printed text, is first reading. There is no difference between readable A page of a printed book, and the same page in a digital reader.

The fonts, the clarity, and the configuration are the same in both cases, and any attempt to look for differences and advantages/disadvantages in the understanding and effectiveness of reading between these two means of access is inappropriate and unnecessary.

According to the Israeli Ministry of Education's curriculum in reading, there are 3 levels of understanding of reading: understanding the overt audio that is interpreted in the text; revealing the implicit and hidden in the text; and A critical and appreciative personal attitude towards the text.

In addition, reading must be taught according to several central approaches:

(1) Merging the reader's prior knowledge with what is found in the text for personal knowledge and insight that is unique to him.

(2) A structured and gradual interpretation of what is found in the text, which will become the property of all readers.

(3) Encouraging the mutual influence of the reader, on his world, his feelings, his understanding, and his emotions in the text - not only what do you learn from the text, but "what does it do to you?"

The emphasis on the characteristics of reading is an understanding of effective reading, which is not at all related to technology and formation, and not to dealing with the issue of whether there are advantages that affect the effectiveness of a personal computer device.

In any case, the importance of this issue is already marginal, since the use of digital learning materials, establishes reading and writing habits not with paper.

Hence, the intensive activity to convert learning to digital learning, which also includes turning existing texts into digital texts, does not stem from the starting point of realizing good reading and is much more efficient than existing education systems, but as a current, correct, and appropriate means for the technological era in the social and human aspect, appropriate for social learning.

Its distinct advantages listed above, include efficient accessibility and storage options that are much better than the book, the library, and the shelf. (The Israeli Ministry of Education, 2015).

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