

Evolution of Education: Towards Sensory Emotive Web

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Abstract:- Achieving a balance between the development of Information and Communication Technologies (ICT) and teaching competences has become essential. The rapid evolution of the Web has presented universities with the challenge of preparing today's academic staff for the ICT of the future. This article compares the developments of the Internet and the Web with those of education. The web influences people's way of thinking, doing and being, and people influence the development and content of the web. The evolution of the web from Web 1.0 to Web 2.0, web 3.0, web 4.0 and now to Web 5.0 can be used as a metaphor of how education should also be evolving, as a movement from Education 1.0 towards that of Education 5.0. The Web, Internet, Social Media, and the evolving, emerging technologies have created a perfect storm or convergence of resources, tools, open and free information access. The result is not only a change in what individuals learn but how, why, and where they learn. Taking this one step further, or from another angle, moving from Education 1.0 to Education 5.0 can be likened to moving from Pedagogy/ Essentialism/ Instructivism through Andragogy/ Constructivism towards Heutagogy/ Connectivism tends to Peeragogy and Cybergogy. Education 1.0 is like the first generation of the Web, a largely one-way process. Education 2.0 includes more interaction between the teacher and student; student to student; and student to content/expert. Education 3.0 is a connectivist, heutagogical approach to teaching and learning. Education 4.0 establishes a blueprint for the future of learning – lifelong learning – from childhood schooling, to continuous learning in the workplace, to learning to play a better role in society. Education 5.0 could be understood as a critical examination of the use of technology and networked systems. It is time to consider a change of perspectives towards a stronger emphasis on personality development, basic values, empowerment, democracy and collective responsibility.

Keywords:- Pedagogy, Andragogy, Heutagogy, Peeragogy, Cybergogy, Essentialism, constructivism, connectivism, Sensory Emotive Web

OVERVIEW

“We do not learn from experience... We learn from reflecting on experience”- John Dewey

Education plays a crucial role in meeting the many socio-economic, cultural, demographic, environmental, ethical and technological challenges. These challenges present themselves globally with their scope and urgency yet to increase as time goes on to reflect on what a ‘new’ education could look like in order to meet the requirements of a local and global society. The Internet has become an integral thread of the tapestries of most societies throughout the globe. The web influences people's way of thinking, doing and being; and people influence the development and content of the web. The Internet of today has become a huge picture window and portal into human perceptions, thinking, and behavior. Logically, then, it would seem that schools would follow suit in mimicking what is happening via the Internet to assist children and youth to function, learn, work, and play in a healthy, interactive, and pro-social manner in their societies-at-large.

EDUCATION 1.0

Education 1.0 is essentialist, behaviourist and instructivist education based on the three Rs – receiving by listening to the teacher; responding by taking notes, studying text, and doing worksheets; and regurgitating by taking the same assessments as all other students in the cohort. Learners are seen as receptacles of that knowledge and as receptacles, they have no unique characteristics. All are viewed as the same. It is a standardized/one-size-fits-all education.

Our educational system from around 50 years ago is founded on the assumption that teaching is necessary for learning to occur and critical to students' creative development is the teachers' pedagogic stance which Erica McWilliam categorises into one of three types - 'sage on the stage' (knowledge transmitter / instructivist theory), 'guide on the side' (facilitator / constructivist theory), and 'meddler-in-the-middle' (an involved co-learner/co-producer in the learning process / constructivist and connectivist theories). In the 1.0 version of education the teacher acts as 'sage on the stage' and education is operationalised as a process for transferring information from the teacher to the student who receives and tries to make sense of it.

In the instructivist approach, knowledge exists independently of the learner, and is transferred to the student by the teacher. The teacher-centered model requires the student to passively accept information and knowledge as presented by the instructor. This pedagogical approach is the dominant teaching-learning model in universities around the world.

EDUCATION 2.0

Education 2.0 takes on the characteristics of an andragogical, more constructivist teaching orientation where the principles of active, experiential, authentic, relevant, and socially-networked learning experiences are built into the class or course structure.

Many teachers become dissatisfied with the instructivist approach and start to think of better ways of engaging students more actively in learning through processes. They know that they learn best when they themselves are motivated to formulate and solve their own problems, when they ask questions and their curiosity drives them to search for and gather information from different sources, and when they devote time to making sense of it and change their own understandings in the process. This realisation or perspective change might cause a teacher to imagine and then bring into existence new strategies for teaching inside and outside the classroom that encourage learners to adopt this more constructivist approach to learning. At this point teachers may blend or even replace the sage on the stage pedagogic stance with that of guide on the side, or even meddler in the middle becoming more of a facilitator or disrupter to encourage learners to find things out for themselves and learn with and from each other.

Education 2.0, like Web 2.0 around 2005, permits interactivity between the content and users, and between users themselves. With Web 2.0, users move from just accessing information and content to being able to directly interact with the content through commenting, remixing, and sharing it via learning activities inside and outside the classroom and using technologies like social media platforms that support the sharing and reshaping of content. Technologies that permit users to communicate directly with one another synchronously and asynchronously and that enable people to communicate and create content in many different ways - text, audio, video, music, pictures, animations to name just a few.

EDUCATION 3.0

We are entering a new age of communicating and learning which some commentators have termed the Social Age .

Enhanced connectivity is at the heart of changing our behaviours and habits in how we find, use, develop and distribute information and knowledge and create new meaning and understanding. The Social Age might be defined in terms of 'the creation of value (knowledge, understanding or learning and relationships) by connecting individuals who want to share their interests, knowledge, passions who form a relationship to co-create new understandings.

The Social Age began with Web 2.0 technologies but we are now morphing into Web 3.0 as a result of ever faster and increasingly pervasive 7 broadband, wifi, 3G + 4G technology that enable connectivity almost anywhere at any time with infinite information resources and personal knowledge residing within personal learning networks.

Education 3.0 is a more heutagogical, connectivist approach to teaching and learning. The teachers, learners, networks, connections, media, resources, tools create a unique entity that has the potential to meet individual learners', educators', and even societal needs. Education 3.0 recognizes that each educator's and student's journey is unique, personalized, and self-determined.

Gerstein (1) provides a useful summary of the Education 3.0, heutagogical, connectivist learning environment.

Learners:

- Determine what they want to learn and develop their own learning objectives for their learning, based on a broad range of desired course outcomes.
 - Use their learning preferences and technologies to decide how they will learn.
 - Form their own learning communities possibly using social networking tools suggested and/or set up by the educator. Possible networks, many with corresponding apps, include: Facebook, Twitter, Edmodo, Instagram, Blogging sites, Youtube, and other social networks.
 - Utilize the expertise of educators and other members of their learning communities to introduce content-related resources and suggest Web 2.0 and other online tools for that the students could use to demonstrate and produce learning artifacts.
 - Demonstrate their learning through methods and means that work best for them. It could include using their mobile devices to blog, create photo essays, do screencasts, make videos or podcasts, draw, sing, dance, etc.
 - Take the initiative to seek feedback from educators and their peers. It is their choice to utilize that feedback or not.
- Education 3.0 subsumes the four Cs of Education 2.0 communicating, contributing, collaborating and co-creating and also includes the additional C's of connecting,

collectives and curating (the products of collective learning). It subsumes the constructivist principles of Education 2.0 and adds in the emerging principles of connectivism. Learners are pro-active in authoring their own learning lives and in helping their peers author theirs.

EDUCATION 4.0: The Dawn of “Digital Monarchy”

Education 4.0 is a more Cybergogy approach as Creating learner-centred, autonomous and collaborative virtual learning environment. Education 4.0 is a phenomenon which responds to the needs of the fourth industrial revolution or IR 4 where humans and machines are aligned to eke out solutions, troubleshoot and of course discover new possibilities of innovation. The technology-fueled world is in constant need for leveraging the immense potential that the digital technologies have in the offing for us. Besides, the entire spectrum of open sourced content, digital technologies, personal data and new humanity is there to be explored.

The help of Education 4.0, students will be groomed to take the digital challenges head-on. At the heart of this phenomenon is creativity which of course will enable students to steer their way out of these challenges Education is not restricted to classrooms. Education 4.0 expands on the basic premise. Online classrooms have been facilitating learning in more ways than we could have ever imagined. Talk about those juggling between jobs and online courses (to further professional advancement), or for that matter those enrolling for special courses offered by foreign universities, the advent of e-learning has been as heartening and as fruitful an experience that one would have liked it to be.

EDUCATION 5.0: The Future of Emotional Competences

The education of students via the Web has become a key factor that requires higher education teachers to have new emotional competences. Although affections, feelings and emotions have been gaining relevance in society and scientific thought for more than a decade now, in the future, we will be dealing with a sensory emotive Web (Web 5.0) and, more than ever before, there will be a deep need for teachers to use and promote intra- and interpersonal emotional competences. Various futuristic terms are currently being used in relation to technology use. Web 5.0, the sensory and emotive Web, is designed to develop computers that interact with human beings. This relationship will become a daily habit for many people. Although at the moment the Web is “emotionally” neutral, that is, it does not perceive what users feel and although emotions are still difficult to map, there are already technologies that can measure their effects. “Emotional competences include the

set of knowledge, abilities, skills and attitudes required to understand, express and appropriately regulate emotional phenomena and are structured in five dimensions: emotional awareness, emotional regulation, emotional autonomy (self-management), social competence, life skills and well-being which in turn can be subdivided into more specific components. Personal emotional competences refer on the one hand to self-improvement skills such as self-knowledge, self-esteem, self-control and motivation, creativity, the ability to change or take decisions; and on the other, relationship skills such as empathy, the ability to establish appropriate communication, to work in a team, to solve conflict, to analyse the needs of society or markets, to be a leader in different social situations

FINAL THOUGHTS

In the era of smartphone classrooms, robotic home help and online examinations, it is not really difficult to envisage what Education 4.0 holds for us. Tipped as the future of education – poised to change consumption of information in a dramatic way, Education 4.0 in a way completes the phenomenon of digital penetration in our every day lives. Education has now come to be viewed more as a life-long process rather than a classroom-oriented ritual or for that matter just a mere stepping stone to the professional world. Learners and educators will now be looking to redefine ways in which learning has always impacted their lives. Unlike interactions which take place in an immediate physical and social context or in real space, communicating and relating on the Web requires interactions in a virtual environment or cyberspace. Therefore, if in the future we are to be faced with a sensory and emotive Web (Web 5.0) that is designed to personalise interactions between computers and humans and to create experiences that excite users, teachers must consider this context as the one where they must make their training project operational. Here is where the fundamental difference between learning to use ICT and using them as tools for learning must be highlighted, this is where emotional competences become important as, more than ever before, there will be a deep need to exercise and promote intra- and interpersonal emotional competences in teachers.

Consequently, competence training, rather than just the exercise of knowledge and training in order to be able to act in complex contexts, will also require the mobilisation of emotional resources and strategies. To achieve teaching success through the Web, it will no longer be sufficient to have a high intellectual coefficient or broad technical knowledge; teachers must be able to develop abilities such as self-knowledge, self-mastery, zeal and persistence, the

ability to motivate themselves and to achieve results together with others.

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