Importance of Lifelong Learning in the Educational Ecosystem

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Abstract

'The 21st century can be rightly regarded as a century of transformation, economic and cultural globalization and rapid technological development. In this context, it is vital to form a society which can adapt to the changes occurring in the environment, by always acquiring and updating knowledge and skills, necessary for everyday life and beyond' (Lazăr & Lazăr, 2012: p. 2533). Laal (2011) also averred that globalization and the growth of the fast-changing knowledge economy mean that people need upgrading their skills throughout their adulthood to cope with modern life, both in their work and in their private lives According to Schwab (2017) from the World Economic Forum, the convergence of digital, physical and biological technologies has an immense potential to be a source of world economic growth. Furthermore, many professionals said that new knowledge is rapidly being developed and disseminated, demanding that students/engineers acquire a wider range of skills and knowledge in these areas (Sopdek, Bernard & Oliva, 2007). These concepts are very important for the engineers and the methods of teaching. Formal learning is not enough for them, they also need to learn for life and not for the school report, and need new competencies, innovation and creativity in learning. Thus, there is a must not only for the students but also for the teachers to self-manage, self-monitor and self-reflect on what they did. Edwards et al. (2002) believe these self-directed learning (self-managing & self-monitoring), and reflective practices (self-reflecting) are the key tools for the lifelong learning process. This paper aims to help engineers to acquire new technologies, new competencies and innovation for their lives. Therefore, the lifelong learning process and its importance for 21st century youths as well as self-directed learning and reflective practices which are beneficial for engineers are systematically described in this paper.

Keywords: lifelong learning, self-directed learning, educational ecosystem

1   Educational ecosystem

Lifelong learning and it's educational ecosystem is one of the newly emerging conceptual organisms in the world of educational discourse. The notion grows with self-organization and elaborates itself in degrees of complexity. The learning society also accompanies a specific mode of social learning handling and management system, which we call "lifelong learning educational ecosystem

Odum defines an ecosystem as a biological system consisting of communities - living organisms, their habitats, and systems of bonds that ensure the exchange of substances and energy between them (Odum, 1986). Interaction in the ecosystem of living organisms is built with each other and with the environment. Providing an analogy with the learning ecosystem in the education system, where all

objects are integrated: students and parents, teachers and administrators, the library - interact with each other and with the elements of the learning ecosystem.

There are many methods, innovations and technologies around the participants in the educational process. There is an exchange of information, components of the natural ecosystem. The concept of ecosystem came to pedagogy from ecology, where it is understood as a single natural complex. Ecosystem (Tansley, 1935) - is located on a certain territory, is a stable system of living and non-living components, having a flow of energy, cycles of substances, with the ability to regulate all these processes. Psychological science considers the environment as conditions that a person as a subject is able to experience, perceiving objective reality. In fact, the environment exists only when there is a perceiving subject. In this regard, mentoring and tutoring by the teacher, the psychological comfort of communication in the process of transferring and assimilating knowledge acquires meaningful meaning (Dewey, 1922).

As Schuetze nicely puts it, lifelong learning has changed its focus from a somewhat idealist reform model to a human capital based model, and "this shift from welfare state to market rule is a main plank of the dominant neo-liberal agenda" (Schuetze, 2006). Under the symbolism of the learning market,

The change makes academic schooling and work capabilities directly linked and have brought about a mass change in the traditional school system. In this situation, with the endorsement of government, the learning market is permitted to create a relatively well structured "market version" of learning recognition systems corresponding to that of "official" ones (Soonghee, 2008).

1.1 Education and Sustainability".

The most significant issue for existence in our eras is how to sustain the natural environment and the world's resources along with developing prosperity and happiness for the coming generations. This massive duty has been well-defined in the notion/idea of sustainable development. For the last few decades, the world countries had consensus to address the issue of sustainable development jointly. After that, Education for Sustainable Development has been begun as one of the major responses to addressing sustainability. The fundamental approach of Education for Sustainable Development is to equip students with sustainable competences via an all-inclusive interdisciplinary viewpoint of content and varied learner-centered democratic teaching strategies. More importantly, Education for Sustainable Development has been adopted internationally as a result of the United Nations Decade for Education for Sustainable Development (DESD; 2005–2014), which has redesigned curricula on international level (De Pauw, et al., 2015).

Sustainability is a term that means perpetuity, continuity and eternity. It is concerned with having resources to be eternal and last for a long time for the new generations. It is worthy to mention the definition of sustainability according to Bruntland (1989, p. 8) who stated "sustainable development is the fulfillment of the needs that maintain the resources of the new generation without affecting the way the new generation deal with these resources. Surely, this definition needs the cooperation of the world's countries, and to promote a better understanding of the concept of sustainability. Al-Hiti (2009) referred to this understanding as 'the green conduct' which tells not to consume a lot within the limits of environment.

The concept of Sustainable Development is originally invented to bring environmental concerns with social and economic development together. Sustainable Development became to be publicly known in 1980s with the report Our Common Future, also known as the 1987 Brundtland report. Following that, serving environment had been the main issue. This was derived from striking ecological problems such as pollution. With the concept of Sustainable Development, it was emphasized that environmental

problems should be dealt in relation to social and economic issues. It is considered a predominant aim to balance between the happiness and better lives of people internationally in space and time, and, at the same time, protecting natural resources and environments (Atkinson, et al., 2007).

1.1.1 Self-directed learning as major part of the lifelong learning concept.

Lifelong learning is also a self-directed learning situation. Learners' self-directed learning has been defined and described in various ways such as autonomous learning, independent learning, student-initiated learning, student-centered learning and all these terms carry the meaning of becoming less and less reliant on the teacher or tutor; while the students take on more responsibility for their own learning. Thus, to become lifelong learner, the students can achieve self-directed learning by monitoring and reflecting themselves whether they had prior higher-order understanding or not.

Then, from the point of lifelong learning, the acquisition of self-directed learning skill (SDL) equips students to be lifelong learners and referred to a process in which individuals take the initiative in diagnosing their learning needs, formulating learning goals, identifying human and material resources, choosing the appropriate learning strategies, and evaluating learning outcomes. To diagnose, formulate and identify the learning needs, the reflective practices are therefore of great importance for the students. (Oo, Tun Zaw ; Kálmán, Anikó,2019)

 In self-directed-learning, the control is gradually transferred from the teacher to the learner and learners in the learning goals and how to carry out a task have greater independence. Self-directed learning emphasizes the role of motivation and determination of learners at the beginning and continuation of efforts to achieve the goals. In their studies, they described that self-directed learning is controlling and directing the process consciously and constantly to understand any situation-concept, solve problems, having or strengthening any skill.

Actually, the self-directed learning is a teaching method that can be defined based on the learner's responsibility. Then, to dawn upon the lack of teacher's direct participation on student's self-directed learning, self-directed learning can include various types of individual and group activity of students that they have undertaken in the classroom and extracurricular activities at home without the direct participation of the teacher. In student's self-directed learning, there is no need of teacher' participation; however, the student cannot lead his lifelong process without reflective practice.

Richards and Lockhart (2005) 9 described some reflective questions for the students' self-directed learning. These questions can be self-reflected by the students. They are as follows.

What am I learning?

Why am I learning it?

How am I learning it?

How am I using what I am learning?

What are my strengths and weaknesses in learning?

What must be my learning priorities?

How can I improve and build upon my learning process?

How well can I work towards my short-, medium- and long-term goals.

Although teachers cannot directly participate in student's self-directed learning, in the schools, they can teach students by emphasizing self-directed learning skills, processes, and systems rather than content coverage and tests. For the individuals, self-directed learning involves initiating personal challenge and developing the personal qualities to pursue them successfully.

Kalman (2016) highlighted the teachers' roles for helping the students to become self-directed learners. In these roles, the teacher should:

Serve as a resource for the individuals or small groups, with certain parts of the learning content,

Help learners assess their needs and competences so that everyone can plan their individual study schedule,

Provide feedback about each learner's subsequent draft plans or ideas,

Specify the resources available and provide new information in the topics specified in the survey of needs,

Compile a collection of resources about the information, media and models related to the specific fields or topics of study,

Organize how to establish contact with people who function as resources in specific topics,

Work with the learners as mock audience or in order to provide stimulus outside regular classes and group activities,

Help students develop an approach to learning which promotes independence,

Encourage debates, asking questions and small group activities in order to arouse interest in the learning experience,

Help learners develop a positive approach to learning and self-directed interest,

Control the learning process including such activities as the continuous recognition of needs, the obtainment of continuous feedback and promoting learner participation, and

Provide confirmation or assessment of student performance both during the process of obtaining the learning experience and at the end of it.

To conclude the above statements on self-directed learning, we can often find terms which are similar in meaning; individuals take the initiative in diagnosing their learning needs, individual has to decide the learning goals and strategies, the control is gradually transferred from the teacher to the learner, based on the learner's responsibility, and activities without the direct participation of the teacher. These terms dawn upon the students' self-directed learning. Thus, we can conclude that lifelong learning is also self-directed learning process. The reflective practices can increase the individuals' self-directed learning process. These reflective processes are interrelated with individuals' self-directed learning. By following the above suggestions of students and teachers' roles for self-directed learning, not only the teachers can encourage their students for their continuous learning process, but become the students empowered to develop their lifelong learning themselves. (Oo, Tun Zaw ; Kálmán, Anikó ,2019)

CONCLUSION

Actually, lifelong learning is self-directed learning. To make self-direction, the learners need to do self-monitoring first, based on self-assessment, and self-reflecting on present and past actions to find out which are their strengths and weaknesses. After completing these basic learning situations systematically: self-monitoring and self-reflection, can they self-direct own successful lifelong learning.

This paper intends to be a concept paper of lifelong learning which is a (self) complex; monitor, reflective, directed learning situation. In the literature cited, the three parts are systematically described such as how to do self-monitoring, self-reflecting, and self-directing; and how the teacher can help their students to improve these three scenarios. If these steps are carefully followed, today's learners can lead their successful lifelong learning process and may become productive citizens for future. (Oo, Tun Zaw ; Kálmán, Anikó,2019.)

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