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Developing a Philosophy of Science Education "PSE" Towards Distance education

Youssra Qassim Ali
Instructor of English
The General Directorate of Education
Al-Najaf Al-Ashraf-Iraq

ABSTRACT:
Cognitive theories of learning have gained dominance over behaviorism among psychologists. Some of the cognitive psychologists` views began to influence a system education to get along with the era and technological advancements. Accordingly, this understanding put traditional teaching method is no longer commensurate with the challenges of the 21st century. Psychologists believe that the way a student prefers learning is likely to be the most important factor in his academic performance. Therefore, the essence of this article is to expose and follow up on the effectiveness of the learning styles in teaching process.

The second key goal is to understand the reasons behind the failure of a certain system in order to enable understanding of how to explore the facts, grappling together with the implications for organize their instruction in accordance with their needs. Most important of all, be more willing to put what they have detected into effect. The essence of the article above all include a discussion and identification of important factors based on information and communication technologies, if comparative readings work for promoting the idea of focusing on the essentials of pedagogy, learning goals and vise- versa..

KEYWORDS: traditional teaching , blended teaching, teacher- centered strategies, learner-centered strategies, technologies, asynchronous classroom, multiple Modalities.

I. INTRODUCTION

Teaching and learning are two core components in the framework of the pedagogical system, which is being formally implemented in the sectors of education. A successful education system depends mainly on whether the classroom environment is effective; otherwise, no one could ever count on it anymore. Teaching / learning situation directly or indirectly dependent on learning styles. Rita Dunn first developed the idea of learning style in 1960. This exceptional idea has recently arisen in the field of education, with some researchers and educators suggesting that learning styles are cognitive, affective and physiological features that serve as relatively stable indicators of how students interpret, communicate with, and react adequately to the learning environment. (Keefe, J. W., 1987). For the learner, learning styles as a term is defined differently as "personal qualities that influence a student`s ability to acquire information to interact with peers and the teacher, and otherwise to participate in learning experiences" (Grasha. F. A., 1996). Although the later quote is represented the urgent need to include technology into the general curricula at all levels of the educational system, most educators, and parent think of "online learning" as a subset of distance learning system (Where each of the teachers and students is geographically separated), The delivery and interaction of content is accomplished mainly through the use of computers connecting to the Internet. What happens is that distance learning or hybrid learning is used for online learning. (In some schools, this approach to teaching is referred to by others as "blended," the so-called "hybrid"). Both are assisted by a modern, robust educational approach that takes benefit from best of both aspects of the settings. The emergence of the new learning system, which incorporates online and face-to-face implementation, is not just a theory; schools around the world have already developed and applied it.

Kolb`s learning styles

The cognitive- perceptual component particularly is one of the basics to various physiological stimuli. Some students may prefer visual equipment as pictures or maps, music and debates as auditory activities are preferred by other students. A tactical or kinesthetically activity is preferred for the rest of the student as they learn information.

In view of the evolution of the theory of Kolb`s learning style , which in turn was based on the research carried out by various others (i.e. Piaget, Jung, and Rogers). Four different learning styles that underpin this invaluable theory which, in turn depends on effectiveness learning cycle. The learning cycle stages are:

• Reflective Observation (RO) - watching

• Concrete Experience (CE) - feeling
• Abstract Conceptualization (AC) - thinking
• Active Experimentation (AE) - doing

The concrete experiences of effectively learning, experiencing, acting, and thinking leading into highlight main observations and reflections, are concentered precisely by Kolb. To compile and translate all of these reflections into an abstract concept that has immediate implications for action, which can be actually tested and experimented by an individual. This, in turn, allows new experiences to be created and a new cycle to be started .

Learning styles set out below are representations of a combination of preferred styles.
• Converging (AC/AE)
• Assimilating (AC/RO)
• Accommodating (CE/AE)
• Diverging (CE/RO)

Curriculum

The etymology of the literal word "curriculum" is "to run a course." in its early Latin origins, such this initial definition is a perfect metaphor for what the curriculum has become in the education.

Oliva (1997, p. 4) has adopted multiple definitions for curriculum as follow :

"Curriculum is:

- That which is taught in schools
- Content
- A program of studies.
- A set of materials
- Is everything that goes on within the school, including extra-class activities, guidance, and interpersonal relationships.
- That which an individual learner experiences as a result of schooling."

In accordance with the known psychological classifications for the four families of learning theory "Social, Information, Processing, Behavioral and Personalist". Curriculum could be broadly categorized into the following major branches: child-centered, knowledge-centered, society-centered, or eclectic. As a result of this diversity in the ways in which curriculum is being provided, Wilson (1990) identifies it as "Anything and everything that teaches a lesson, planned or otherwise.

Humans are born learning, thus the learned curriculum actually encompasses a combination of all of the following — the hidden, null, written, political and societal etc..."

Following represent the most two recent prominent types of curricula currently used.

• Written or explicit curriculums are simply put as part of formal instructions for educational experiences, such as: Text, curriculum documents, films in order to contribute to supporting the scholastic agenda for school.
• Electronic curriculums are those lessons have been learned through an Internet- based search for information, or through an increased use of e-form communication.

Whatever the type of curriculum, formal or informal, and for what is the inherent lesson, be it correct or incorrect, good or bad, overt or covert, ones' views would be essential to effectiveness in this area.

Traditional teaching

Each generation gives a new form to the aspirations that shape education in his/ her era. One of the places, which must be specially renewed attention itself, is in curriculum planning for education. With due regard not only for coverage but also structure, although the main objective of this system has been to present subject matter effectively so that they can to make the greatest contribution to how the substantive to reorganize the curricula for education, they have not participated in any development . As a result, school projects and programs have inadequately dealt with current scientific knowledge. Because the teaching- learning processes are known with its continuous activity of asking and solving questions. Bruner (2009) reportedly points out that: "Sequence of a Curriculum", "The Apparatus of Teaching ", "The Motivation of Learning" "The Role of Intuition in Learning and Thinking," "Cognitive Processes in Learning." The members of a varied action groups are devoted entirely to the activities of the teaching mechanisms.

The traditional teaching is the most direct and effective method, in which the primary role of traditional teacher is centered on:

- Supervise and monitor of the entire teaching activity, impart of systemic knowledge and academic views with speculative philosophy and a totally unique ability to affect those student, where, through which they are received high value-added education that it is necessary in an improving their IQ and EQ.

- Teachers /students communication is a simulative factor for students' comprehensive quality, organize the foundations of flexible teaching content based on instructor knowledge in conjunction with their capacity to explain better, where whose outlook towards right and wrong, value orientation and academic level have a significant effect on students.

Conventional teacher-centered method system rather than modern student- centered applications and techniques. They have been criticized because they encouraged further passive learning while ignoring individual differences among students, and lack of interest with regard to critical thinking. As a result, the student is in a negative position of curbing personality, creativity, ignoring the initiatives and potential of his / her in class.

Because the rational knowledge of the language and rules are particularly concentrated at the conventional methods, what necessary to solve this matter is the so-called new- technology-based on Internet. As these technology and media evolve, it emerges various applications in the teaching of different fields.

- Online learning is one of those applications that rely upon the World Wide Web as a significant mean for communication and presentation services. Results of distance learning studies emphasize the interactive role of student in determining the quality of this technology. In online courses, students do better because of the versatility and responsiveness of online learning (Roblyer and Ekhaml, 2001).

At all times and at all levels and stages of learning, student`s satisfaction is positively affected when:

- Online resources are accessible through the Web, where online learners can find a rich source of resources.
- List all grades so that his or her score can be compared by the student.
- The role of a teacher is that of a qualified facilitator.

Therefore, if the role of a teacher is to teach, the role of a student must to be to learn.

- While one of the characteristics of the knowledge-based society by which we can estimate the degree of its growth is the presence of online distance education, it is not free from the criticisms of the convention print-based faculty.
- Communicative misunderstandings are normal for all members in a text-only format with little interpersonal input, and this may be compounded for members with limited language skills (Manner, 2004). The rapid speed and numerous dialogues will frustrate non-traditional students with an expressive or receptive learning impairment or with language disabilities (i.e. English as second language acquisition) As a consequence of a lack of specifically communicating feelings and thoughts clearly to others based on cultural expectations.
- Differences in the time zone are a source of specific concern for asynchronous classrooms. Another dilemma is elaborated by Taylor (2002), which "technical problems are potentially troublesome in the case of video conferencing and virtual meetings". Issues such as quality of sound and video may be impacted by inappropriate setup. To avert such an eventuality during preparing for online lessons, teacher must not necessarily be a "Webguru", but he/she must be familiar with the effective instructional pedagogies to contribute to the creation an online learning experience.
- The asynchronous classroom is where students log into the Web at the same time and can use chat facilities or audio/video connections to connect with the instructor. In immediate conversation, however, there are two dilemmas where a learner promptly needs to respond to their questions or submissions. Secondly, at the same time, students might not be able to log in. It can ruin the whole lesson. Taylor (2002) further stressed: "Time is money students can pay on an hourly rate for their access time. Overtime running can be costly."
- Tyler-Smith (2006) reviewed the most significant factors contributing to high online dropout rates, saying "Online education can sound like an impersonal exercise that causes students to feel "e-Solated" from educational staff and classmates". This will decrease the likelihood of student contact with each other, on the other hand, their interactions with their teachers.
- Student preparation poses considerable effect on the effectiveness of an online learning program. Although the students must have access to the internet and the necessary technology. This will impose an extra pressure on students to contend with technological delays and the obstacles that could emerge. As a corollary to the above, Flye, Gibson, Seeman, and Wilkinson (2002) argues that "If students live in smaller centers or remote parts of the countries, they may not have access to or be able to afford the computer equipment". Compared to those who approach modern technologies, this lack of connectivity makes students in a comparative disadvantage.

Using more than one media is the best compared to only using one medium; using the multiple media and approaches properly will not just boost the needs of the students but also enrich topics (Xuan Weibo, Yu Yelu, 1985).This is why the blended technology is being used as an assistant method based on scientific

applications and the predetermined operations of language. In this way, we will get an education in a contemporary style that blends the strengths of conventional approaches and modern methods. Watson (2008) has identified blended learning as a mixture of conventional face-to-face learning and the use of simulated online settings of technology-enhanced learning tools and techniques. In this study, technology-enhanced learning is seen as information and communication technology (ICT) used in educational contexts to improve learning and interaction among students. In simulated learning environments, mixed learning is primarily applied (VLE).

Since blended learning's fundamental design still depends on: "Learning context", "the specific subject", and "its actual learning objectives".

The basic objective to implement blended learning

• As Picciano (2009) says Environments must be ideal to create a richer learning process for engaged students by integrating face-to-face sessions with multimedia experiences with a multimodal overload that may fulfill the demands of diverse learning strategies and learning styles.

Despite the emergence of global standards describing the positive aspects of distance learning, the negative side of it, such as the isolation of students and their lack of direct communication, led to the emergence of blended learning that integrates between traditional and electronic learning, their importance and their features. To verify effectiveness of blended learning in the educational process, Bonner (1999) elaborates the optimal criterion for the selection active and cooperative learning method "the teacher who designates learning goals should have resources to evaluate the theoretical knowledge and abilities of the students to be able to choose the method that promotes the process of learning."

Several techniques to support and promote learning have been suggested by (Bonwell & Eison, 1991):

The use of visual media in lectures (video, multimedia, slides).

- Students' encouragement to take notes at lectures .
- The use of PCs while teaching .
- The use of simulations, role playing and different graphics .
- The application of learning in partnership.

The perceived obstacles for teachers to the effective introduction of blended learning:

- Documentation and Support, or rather the lack of capacity, best practice documentation. If the documentation for certain the virtual learning module is insufficient, it gives an insecure feeling with the possibilities of implantation technologies, in combination with extension modules.

Their concept of a support model is a mix of contacts and documentation that describes both the implementation process and the benefits of using software and modules for expansion.

- Introduction and training, tools and techniques is as being as a problematic, special training for the introduction of new technology must be supplied. As the lack of training and introduction to things that they are expected to use. Blended learning environments have been described as the opportunity to combine the best from traditional classroom curriculum with technology-enhanced learning, but without adequate introduction and training the implementation risks to be poor. But the probability of implementation is low without appropriate introduction and training.
- Time aspect, teachers suffer from the lack of time to include blended learning thoroughly in their courses. The introduction of blended learning tools and techniques was delayed by a perceived time constraint.
- Didactics and instructional design, In terms of pedagogy, curriculum and teaching style for mixed learning settings, teachers did not feel comfortable and well-informed or skills necessary to adapt the required teaching design to blended learning environments.

Picciano's multimodal conceptual

In newly heterogeneous student classes, the concept of a modeltimodal is distinguished by a high degree of media allocated to meet different needs and learning types.

- The most important component of the model is how to synthesize, evaluate and assess learning (i.e. Essays and term projects pass back and forth without ever being printed on paper between teacher and pupil.).
- Dialectic is an essential activity that helps faculty to probe what students know and refine their expertise by answering the "right" questions to make students think critically about a topic or issue and encourage debate.

In this respect, CMSs and other online tools have a range of frameworks for assistance.

- Oral lectures in the classroom are giving way to YouTube, videos and podcasts.

• The portfolio evolves into multimedia electronic presentation of video, images, and audio.

II. RECOMMENDATION:

As learning is as a vision for holistic sustainable frame of lifelong process whereby each stage is mutually supported and adequate replenishment in the next. So, there are two other trends that have been recently promoted:

-Massive Open Online Courses (MOOCs).
- Flipped Classroom approach.

III. CONCLUSION:

In process of informationalized development for the scientific process, "Foresee" is important to be aware to determine how to successfully integrate the Internet with teaching in advance.

In general, all the learning applications mentioned are helping to draw attention to their potential in the areas of education to heighten the educators and researchers awareness of how these have been used. Introducing such new teaching methods that keeping up with the evolution of the era are for continued learning and promoting, improving the value and access to new technologies are crucial where it has become inescapable reality to assist in the scaling- up of successful approaches. In the context of supporting an educational environment, student and future regulatory readiness for knowledge -sharing and information and communication technologies, faculty learning curve, asynchronous classroom contexts are several potential limitations to online learning by the students. One cannot conclude, however, that maintaining a student-centered design, being concerned with and responding of his/her basic needs such discussions, collaboration and emotional support. Along with all of this, a continued emphasis on the value of up- to- date content is always be necessary for an ultimately improve learning outcomes.

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