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Research Based Theory of Overhauling Science Education Management

Behrangi Mohammadreza^{a,*}, Hosseinian Simin^b

^a Kharazmi University, School of Education, 49- Mofateh Avenue, 31979-31551, Tehran, Iran

^b Alzahra University, School of Education, Tehran, Iran

Abstract

This article represents a sum up of a serial of researches on the use of the Overhauling Science Education Management (OSEM) theory in teaching academic lessons in different fields of science. Retroactive to the contemporary impediments in moving to the edge of science education with proper ICT the theory involves 10 steps. Its process starts from students' active involvement and gradually attaining the concepts. Learners involve their own background, experiences, ideas and cognitive level through the adjustment approach with the lesson titles, subtitles and the key concepts. The teaching ends up with formative evaluation to document the assurance of learner's achievement to mastery level in each step. Learners produce definitions of scientific concepts at the level of high level cognitive understanding and sustainability. Reliable and valid researcher made tests and questionnaires used for data gathering. Research methods such as t-test, effect size, and covariance compare its effect with the contemporary teaching. OSEM also provides learners to articulate their learning with the community of learners who are also engaged in the same experience and journey. Based on the author empirical research evidences, its implementation could be assured to overhaul teaching different academic science subjects in school grades and higher education.

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* Corresponding author. Tel.: +98 9121304599; fax: +982188321311.

E-mail address: behrangi@khu.ac.ir

1. Introduction

Theory of Overhauling Science Education Management (OSEM) has been conceived as a remedy to the failures of contemporary world education to be modified concerning ICT availability and use for improving education. It is based on strong secured river-bed experimental evidence for its implication. New and experienced teachers could use it for taking charge of their professional lives and increase their effectiveness toward well-developed individuals. Wiles and Bondi statement is the indication of its necessity and an importance for today use and implementation. “Can you believe the ignorance teachers and administrators display on the issue of human development? In everywhere: in special education placement, in grouping students by ability, in awarding grades for achievement, and in establishing discipline programs for classroom management these ignorance can be observed?” (Wiles & Bondy 2004, p.115). Their complaint also refers to a school in which “too many students in special education classes” with a less competence teacher of whom only a few could express the meaning of an I.Q. (intelligence quotient) score. The failures still are carrying on the scene of education enhanced with ICT influence mostly because the river bed for the process of handling and delivering the positive features of the contemporary theories and ICT on human understanding has not been fully modified, so far. Education with the fixed content, teacher center unilateral method of teaching and unrelated to the innate motivation and natural abilities of students still run on the old rail. Wiles and Bondi state that: “As the result curriculum and curriculum development today are being driven by laws and testing more than by the needs of children” (p.157). As is stated by Learning Sciences Marzano Center nearly 2 million data points analyzed, reflects that the existing strategies teachers are currently using in their classrooms do not adequately make the large instructional shifts necessary for academic success and career readiness. The OSEM theory accepts the whole notion of the effectiveness of key attributes of theories in improving human resources development and make students ready to learn them. It is really concerned with the structural complexities in the technical core (classrooms) and peripheral environments, rules and regulations, being placed on education today for the purpose of improving students learning but futile in being effective significantly. It makes sense to attempt to standardize student performance while at the same time acknowledge the vast difference among them. Saying so, it is useful to have a look at what implementation of Overhauling Science Education Model (OSEM) present to the contemporary world of education and how it causes significant increase in the learners’ academic standards achievement and learners’ citizenship skills sorted out as social, information processing, personal, and behavioral skills. The key factor in the use of the theory to be sure of is that there is no harm at all in using it in the process of academic achievement on learners’ whole development and attitude, but only the significant positive effects and benevolence. Its potential absorbance of the important features of ICT and key notes of new theories in teaching and instructing make the use of OSEM as a river-bed for improving education and students learning. Attracting the critical factors of many new theories and rational ideas in the process of teaching, learning and instruction is its underlying importance that has already been affirmed through many empirical researches. Table 1 enlists some of them as examples with their more specifications to be found in the resource section. The commonalities of all of these serial researches are their semi-experimental and empirical findings that indicate the significant effects of OSEM theory on students learning, academic achievement, and attitudes. A few of these researches were done using attitude standard test to measure the nurturing effects of the theory on students’ different dimensions, as well. More specifically OSEM has been used on teaching the range of subjects, titles, and subtitles. Having the hybrid and eclectic character to absorb the rational findings of the key points of different theories the importance of its use has been documented based on the researches on the following subjects:

Students’ achievement, organizational health, attitude of the 2nd –year Girl High-School Geography (Behrangi; Zoghipour 2014); Drawing Shah Abbasi Flower & floral motifs (Behrangi, Javaripour 2014); Transformational leadership style of biology teachers on the responsibility and achievement of students (Behrangi, Mesbah 2014); Social skills in high school students (Behrangi, Zebarjadi et., al); English language encompassing distributive leadership style in the 3rd girl graders in Guidance school (Behrangi; Afkar, 2014); In service training on psychological empowerment of teachers of schools education organization (Behrangi; Akbari 2014); Picture word inductive model and mathematics self-efficacy teaching algebraic identity (Behrangi; Tajabadi, 2014); Reengineering education (Behrangi; Sotooneh, 2014); Cultural capital components and transformational leadership in the academic subject on processing addition in math algebra (Behrangi; Solimani, Moradi 2014); Instructional and nurturing effects of the critical features of the important component of cultural intelligence and transformational

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