

Developing Information Literacy Skills Lesson Plans Integrated into the 6th Iranian Primary Science Curriculum based On the Big6 Model

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2016**

First phase: Developing Information Literacy Skills Lesson Plans

Objectives

In Iran, studies on Information Literacy (IL) skills in first appeared in the late 1990s. Despite almost two decades of research, there is no mention of IL in the national documents of education and the school curriculum in Iran. Since there is a lack of IL skills instruction in the education system of Iran, especially in primary schools, this research aims to develop and evaluate IL skills lesson plans based on the Big6 model - for the 6th grade Iranian primary science curriculum. This paper describes the first stage of the research in which the expertise of twelve 6th grade teachers were used in the Delphi iterative feed-back process to achieve consensus on the validity of lesson plans which integrate IL skills and science inquiry skills in the Iranian 6th grade science curriculum.

Methodology

In search of the appropriate curriculum for integration with the Big6 skills model, initial investigation in Iranian primary school text-books showed that the science curriculum is more research-based than other curricula and thus more closely aligned with the IL skills of the Big6 model. Draft lesson plans were developed for the 11th and 12th units of the Iranian science curriculum by integrating the processes of the Big6 model with the science content and processes. This study was conducted using a Delphi method included in the instructional design and a sample of 12 the 6th grade teachers were selected using a snowball sampling method as the panel of the experts. The draft of the lesson plans were distributed among the panellists and in the Delphi stage interactive process, feedback from panellists was used to modify the lesson plans.

Outcomes

A comprehensive unit design and five daily lesson plans in contexts for the 6th grade Iranian primary science curriculum achieved. In this regard, the thing that facilitated the Big6 skills model integration into the 6th grade Iranian primary science curriculum was the conformity of this model with the revised Bloom's Taxonomy especially in the Lesson in context lesson plans.

Second Phase: Using the Big6 Model Integrated into the Iranian 6th Grade Science Curriculum to help the 6th Grade Students Develop Information Literacy Skills: a Mixed-method Approach

IL field research in Iran began in the late 1990s and one of the first articles in IL area argued for the necessity of IL instruction in schools (Khosravi, 1996). Until 2004 the number of IL studies was less than 5 per a year with most of the IL research in Iran being done during the 2000's decade. A closer investigation of IL research undertaken since this decade, shows that Also, other research in Iran show that IL skills, school libraries and librarians have not an important place in the primary curricula, documents, and textbooks (Haidari-hematabadi, 2006; Lotfimaher & Dortaj, 2011).

In recent years the Ministry of Education in Iran recognised a need for education system reformation and as part of its agenda, began developing national programs and documents in order to make fundamental changes in the educational system. The National Document of Educational Development in the Twenty Years Perspective (Ministry of Education, 2005), the Document of Fundamental Revolution in Education ((Ministry of Education, 2011) - and the Document of National Curriculum ((Ministry of Education, 2012) are some of these documents. But, despite the emphasis of the national education documents on the need for transformation in teaching methods and approaches and using the active and research based teaching methods, traditional teaching methods are still common in Iranian schools.

Consequently, the school library does not have an important role in the school curriculum, and the school library and classroom are two distinct worlds (Parirokh & Mirhosseini, 2008). This problem is more evident in Iranian primary schools than secondary schools. In Iran, the system of education is text-based and school teaching for most of the curricula involves lecturing, repeating and practice. This means that students and teachers don't feel a serious need to use the school library. This has led to weakening and even removing primary school libraries from the educational process.

Since there is a lack of IL skills instruction in the education system of Iran, especially in primary schools, integrating IL skills instruction into school curriculum could be the way of achieving an active education system and transforming teaching and learning methods. So, this research aims to instruct the Big6 model skills integrated into the Iranian 6th grade science curriculum to the 6th grade students to evaluate the efficacy of this instruction in developing their IL skills level.

Because the Big6 model is the most widely used model of IL education in schools worldwide (Eisenberg, 2008), it was chosen in this research as the tool to integrate IL with the Iranian primary science curriculum. In other words, this model is used as a framework to examine the effectiveness of an inquiry-based approach in developing IL skills lesson plans and integrating them into the Iranian primary science curriculum. The Big6 model is a systematic approach which has 6 components: Task Definition, Information Seeking Strategies, Location & Access, Use of Information, Synthesis and Evaluation. Each main component is then subdivided into two sub-skills, the "Little12", which are questions the learner needs to answer to become better engaged in the process of gathering appropriate, necessary and relevant information (Eisenberg & Berkowitz, 1999).

Methodology

This research done using a mixed-method explanatory design, employing both quantitative and qualitative methods

Quantitative

The quantitative experimental process had four phases:

- 1- A pre-test was conducted on control and experimental students at the beginning of the research project
- 2- After the pre-test, students in the experimental group instructed in science curriculum integrated with the Big6 model skills and the control group only received the traditional teaching.
- 3- Next, post-test was conducted on all students of the two groups.
- 4- After two months, a follow-up test was conducted on all students of the two groups.

Qualitative

5- In the qualitative phase of this research experiences and perceptions of the experimental group were studied in order to interpret the intervention results by conducting semi-structured interviews with students who participated in the research intervention.

Findings

The data analysis of this study showed that the experimental group performed significantly better than the control group. This results support previous research, such as Chen & Ma (2012), Chen, Yang & Huang (2014), Chu, Chow & Tse (2011), Argelagos & Piffare (2012), Newell (2010), Detlor, et al. (2012), Chen, (2011), Julien & Barker (2009), Moreire (2010). Chen (2011) believes that integrating IL skills instruction in the school curriculum have a positive impact on students learning and improves their ability of critical thinking. This will lead them to life-long learning skills in future. Similarly, current study showed that using the Big6 model integrated into the Iranian 6th grade science curriculum helps the students to improve their IL skills as well as gain a deep understanding of the research process.

Working with the Big6 research process was good. This was a first for anyone in the experimental group; therefore, findings found some things work and others not. Students' perceived level of familiarity with defining a research problem, using the proper search strategies, note-taking, extracting needed information from the resources, citing the resources and legal use of the information improved significantly for almost all

dimensions of the Big6 skills. However, some skills like evaluating the internet web pages and synthesis did not worked very well due to lack of time. It is essential to make the Big6 process clear to the students. Teacher and librarian would have had more time to explain the steps and give the students more opportunity to ask questions and do some brainstorming.

Author



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Her research interests lie in the area of Information Literacy, information behavior, and Scientometrics.

She recently joined the University of Southern Queensland as a visiting academic and adjunct research fellow. She is collaborating in a research project on science education there with a focus on Super 3 model. Fatima really enjoys working with young children and is proud to share her research experience on the www.big6.com

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