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Innovation The Research Concept

Use of Relevant Pedagogy for Qualitative Teaching

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Abstract

Reforming teacher education is dire need of our education system in 21st century. In view of recent transformation in teacher education curriculum and increase in time span it is urgently required to intervene in teaching pedagogies. As we are approaching towards holistic development of teachers, innovative pedagogies will be proving as boon. The quality of educational process largely depends upon the quality of teachers. The goal of teacher education is to encourage the spirit of enquiry and creativity in teachers and providing them with the intellectual and professional back ground that will be adequate for their assignments and also make them adaptable to changing situations. In 21st century it is the teacher with appropriate teaching methodologies will help the students connect with the world and understand the issues that our world faces. So in order to meet the demands of 21st century, innovative pedagogies needs to be introduced in teacher education. This conceptual paper is designed to discuss modern curriculum in teacher education. The curriculum of teacher education is broadly dealt with under foundations of education, pedagogy and school internship. The present paper is attempt to focus on innovative pedagogies like-cooperative learning, problem based learning, inquiry based learning, project based learning, collaborative learning etc.

Keywords: Relevant Pedagogy, Qualitative Teacher Education

Introduction

Education is the back born of the society and the progress of the nation highly depends on the quality of its educational process. The quality of educational process largely depends upon the quality of teachers (Manisha Das, 2015). The aim of 21stcentury education is not only educate children in the class room but also provide new knowledge and skills to ensure their survival and success as individuals, as members of the community, and as citizens of our nation.Thus, we visualize the aim of 21st century teaching as the development of knowledge, higher-order skills (such as the 4Cs of creativity, critical thinking, communication, collaboration), and character, as well as the establishment of lifelong learning habits and an ability to learn how-to-learn with technology as the central roles in the new picture of teacher effectiveness (James H. Stronge, Leslie W. Grant, and XianxuanXu, 2015).

Students live in a digital era and uses internet, text messaging, social networking, and multimedia in their lives outside of school and they expect a parallel level of technology opportunity in their academic lives. All 21st century skills focused on both teacher and student not only mastery over core subject but also they become be a critical thinkers, problem solvers, good communicators, good collaborators, information and technology literate, flexible and adaptable, innovative and creative, globally competent, and Financially literate(The National Board for Professional Teaching Standards). So the teacher education institutions bear the responsibility to produce teachers with skills like critical thinking, effective communication, and problem solving, collaboration and technology literacy. And this is possible when the teacher educational institutes adopt the innovative pedagogies in practices in teacher education.

Globalisation has enabled rapid advancements in technology; we have entered the knowledge age where social networking technologies are changing business, media and political structures. The skills that are essential for achieving these outcomes include collaborative teamwork, problem-solving, communicating, making connections, creating, and expressing oneself in a variety of ways (ACEL, 2007).Traditional approaches emphasizing memorization or the application of simple

procedures will not advance learners' critical thinking skills or autonomy. To develop the higher-order skills they now need, individuals must engage in meaningful enquiry-based learning that has genuine value and relevance for them personally and their communities (Cynthia, L. Scott, 2015)

Research question

What are the relevant pedagogies for qualitative teaching in 21st century?

The main goal of 21st century schooling is to build students, "learning capacity", to help them develop into life-long, active and independent learners (Peter Leggat, 2015). To achieve these goal the teacher must acquainted with 21st century knowledge and skills and also have knowledge about how to implement these knowledge into real class room teaching for successfully meeting the challenges of the century. To meet the demands of the global economy by exemplifying , and embedding in instruction, the mastery of 21st century skills such as critical thinking , problem solving, communication, collaboration and creativity and innovation. This includes the application of technology to support more robust instructional methods and understanding the relationship between content, pedagogy and technology through dissemination of Technological Pedagogical Content Knowledge (TPCK) theory and research (Association of colleges of teacher education 2008, US Department of Education 2010).

According to UNESCO, the skills required in the learner of 21st century are as follows:

1. Critical thinking
2. Ability to communicate effectively
3. Problem solving
4. Collaboration
5. Technology (literacy Education research and foresight working papers, the future of learning, equipping Every Learner for the 21st century).

Not just UNESCO but several reports (Education research and foresight working papers, the future of learning, Equipping Every Learner for the 21st century, A teacher Education Model for the 21st century, a report by the national institute of education, Singapur) also emphasis on these skills.

This present paper gives importance on inquiry based learning as relevant pedagogy which is used for qualitative teaching in 21st century.

1. Inquiry based learning

Inquiry based learning is a pedagogical approach which involved students to explore academic content by investigating and answering question.Inquiry-based learning is an approach that begins with a question. Students construct their own knowledge as they engage in a variety of experiences that provide them an opportunity to investigate solutions (Thomas Berger). It is a learner-centred approach that emphasises higher order thinking skills. It may take several forms, including analysis, problem solving, discovery and creative activities, both in the classroom and the community. Most importantly, in enquiry learning students are responsible for processing the data they are working with in order to reach their own conclusions. Inquiry based learning can motivate students to learn and advance their problem solving and critical thinking skills (CEA-ACE, FOE-FEE and SFU, 2014). Inquiry based teaching technique is a effective pedagogy for teaching math and science subjects. A research found that IBL has often focused on its application in science and math education, but this approach also used in humanities (Parker, Diane.2007). Inquiry-based teaching is a teaching method that combines the curiosity of students and the scientific method to enhance the development of critical thinking skills while learning science (Anna J. Warner and Brian E. Myers).

Inquiry learning is based on constructivist theory, where learning is seen as a social process involving a mutual exploration of ideas through experiences and language (Cross, 1996). During Inquiry Learning the teacher becomes a co-learner, working together with students to investigate a topic and guiding students through their inquiry with the use of appropriate scaffolding. In the classroom Inquiry Learning means student-centred hands-on activities, which relate to real life situations and events. Inquiry Learning not only encourages students to actively construct their own knowledge and bring personal ideas and concepts to the learning experience, but encourages them to make changes in their attitudes and behaviours (Kuhlthau, Maniotes, &Caspari, 2007).

In inquiry based learning, learners are in the centre of the entire process and teacher works as a facilitator for resources and technology which are adequately organized to support them. In an instructional setting, inquiry-based learning can give instructors the opportunity to allow students to fully explore problems and scenarios, so that they can learn from not only the results, but also the process itself. They are encouraged to ask questions, explore their environments, and obtain evidence that support claims and results, and design a convincing argument regarding the way they reached to the end result.

According to Christopher Pappas there are four forms of inquiry that are commonly used in inquiry-based instruction:

Confirmation Inquiry

Learners are given a question, as well as a method, to which the end result is already known. The goal is to confirm the results. This enables learners to reinforce already established ideas, and to practice their investigative skills.

Structured Inquiry

Learners are given the question and the method of achieving the result, but the goal is to provide an explanation that is already supported by the evidence gathered during and through the investigative process.

Guided Inquiry

Learners are only given a question. The main goal is to design the method of investigation and then test the question itself. This type of inquiry is not typically as structured as the previously mentioned forms.

Open Inquiry

Learners must form their own questions, design investigative methods, and then carry out the

inquiry itself. They must present their results at the end of the process.

How inquiry based learning implemented in teaching?

Teacher plays an important role for implement this pedagogical knowledge in real class room according to the knowledge and ability of their students. According Anna J. Warner and Brian E. Myers when using IBL process teacher must responsible for the following:

1. Starting the inquiry process;
2. Promoting student dialog;
3. Transitioning between small groups and class room discussions;
4. Intervening to clear misconceptions or develop students' understanding of content material;
5. Modelling scientific procedures and attitudes; and,
6. Utilizing student experiences to create new content knowledge.

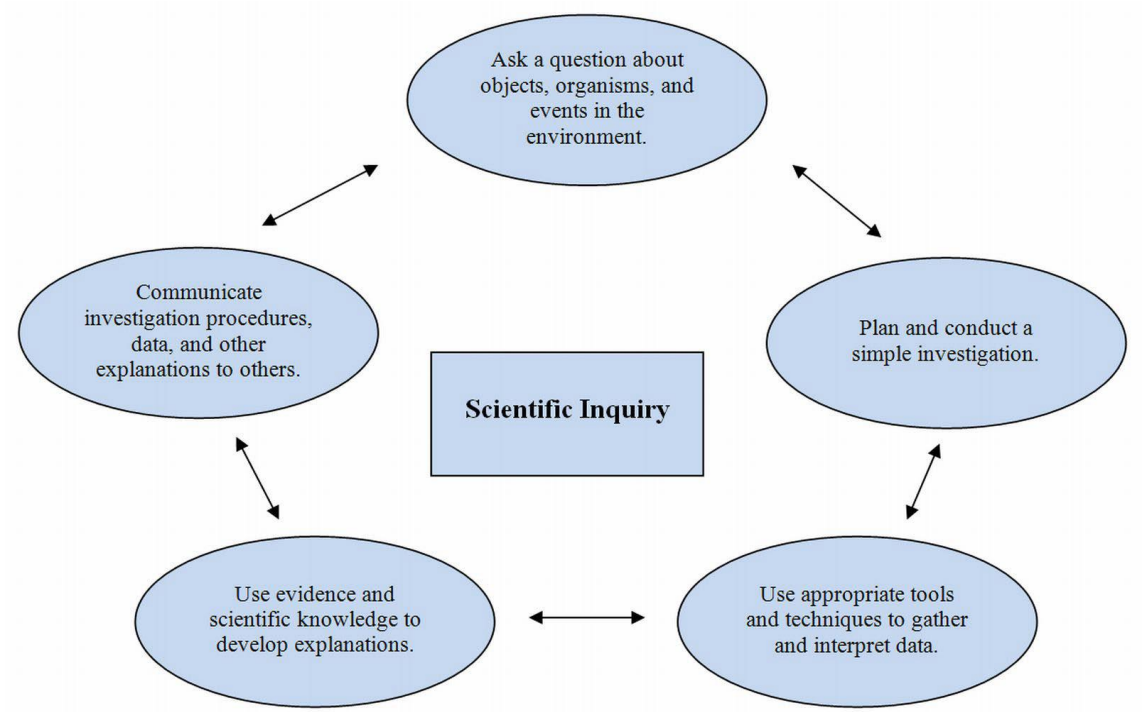
Students engage in five activities when they engage

in inquiry learning and use the scientific method, as noted in the National Science Education Standards published by the National Academy of Sciences. Although these tasks occur in a logical progression, inquiry is a fluid process, and one task may lead back to a previous task.

According to the National Academy of Sciences (1995), when students learn through inquiry, they:

1. Question
2. Investigate
3. Use evidence to describe, explain, and predict
4. Connect evidence to knowledge
5. Share findings

These five steps of inquiry based learning is better understood from the following Model given by Carin, Bass and Contant.



Tasks of Inquiry

Credits: Carin, Bass, &Contant, 2005, p. 21

E5 Instructional Model

The e5 instructional Model given by Rodger W. Bybee, and Joseph A. Taylor, it is a reference point for school teacher to develop a deeper understanding of what constitutes high quality teaching practice in classroom. That model consists of the following phases: engagement, exploration, explanation, elaboration, and evaluation. Table 1 summarizes the instructional emphasis for the different phases.

Summary of the BSCS 5E Instructional Model

Phase	Summary
Engagement	The teacher or a curriculum task accesses the learners' prior knowledge and helps them become engaged in a new concept through the use of short activities that promote curiosity and elicit prior knowledge. The activity should make connections between past and present learning experiences, expose prior conceptions, and organize students' thinking toward the learning outcomes of current activities.
Exploration	Exploration experiences provide students with a common base of activities within which current concepts (i.e., misconceptions), processes, and skills are identified and conceptual change is facilitated. Learners may complete lab activities that help them use prior knowledge to generate new ideas, explore questions and possibilities, and design and conduct a preliminary investigation

Explanation	The explanation phase focuses students' attention on a particular aspect of their engagement and exploration experiences and provides opportunities to demonstrate their conceptual understanding, process skills, or behaviors. This phase also provides opportunities for teachers to directly introduce a concept, process, or skill. Learners explain their understanding of the concept. An explanation from the teacher or the curriculum may guide them toward a deeper understanding, which is a critical part of this phase
Elaboration	Teachers challenge and extend students' conceptual understanding and skills. Through new experiences, the students develop deeper and broader understanding, more information, and adequate skills. Students apply their understanding of the concept by conducting additional activities
Evaluation	The evaluation phase encourages students to assess their understanding and abilities and provides opportunities for teachers to evaluate student progress toward achieving the educational objectives.

Conclusion

21st century demands that student not only mastery over core subject but also they become be a critical thinkers, problem solvers, good communicators, good collaborators, information and technology literate, flexible and adaptable, innovative and creative, globally competent, and Financially literate. In order to achieve this goal we used advanced technology and relevant pedagogy for qualitative teaching. This paper give emphasis on inquiry based learning as a relevant pedagogy for qualitative teaching. It give emphasises on higher order thinking skills. It may take several forms, including analysis, problem solving, discovery and creative activities, both in the classroom and the community which are the need of 21st century learner. According to e5 model inquiry based learning developing competence in an area of inquiry requires create a foundation of factual knowledge, understanding facts and ideas in the context of a conceptual framework organizing knowledge for retrieval and application. It also helps students learn to take control of their own learning by defining goals and monitoring their progress in achieving them. So it is a relevant pedagogy for teaching.

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