Contextual Learning Approach: A Tool for Enhancing Critical Thinking Skills amongst Learners'

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Abstract:

One of the high-level skills needed to take on the challenges of the 21st century is the ability to think critically. One must choose the right pedagogical strategy in order to foster analytical thinking and help students grow. Students must therefore learn to construct their own bodies of knowledge, conduct their own research, foster an insatiable curiosity, engage in learning communities, present models, cultivate reflective thinking skills, and have meaningful discussions about topics relating not only to knowledge but also to practical abilities. The Contextual Learning approach is an instructional strategy that incorporates a learning component and a way to introduce material by employing a number of study strategies, which in turn encourages students to draw links among both their foreknowledge and the material they are being asked to learn, as well as to synthesize and analyze this material to form their own original understanding. The theoretical underpinnings of Contextual Learning (CL) are sketched out; the theories of Active Learning, Constructivism, and Making Connections are highlighted.

Introduction

More and more research shows that most students' learning vastly improve when they are contributed to making comparisons between different thoughts and information they have had, or with other experience and understanding they already perfected (Shea & Morgan, 1971) asserts that students' motivation "increases significantly whenever they are informed why they are studying the principles and how those ideas could be used in meaningful contexts" (Berns & Erickson, 2011). Making students ready to compete and solve difficulties in the modern world is a key objective of education. The 21st century presents a number of obstacles. One that stands out in the 21st century is the ability to think critically. Additionally, the government established 4 competences that must be mastered in order to meet the challenge, and they are: religious attitude competence, social attitude competence, cognitive competence, and skill competence. Because of this, it's clear that students' knowledge and abilities are also crucial. Using one's reasoning and self-reflection to evaluate the validity of one's assumptions, and conclusions is critical thinking.

As part of their education, pupils should be encouraged to think critically. Teachers need to plan lessons so that students have opportunities to use their critical thinking and practical skills in context. It's important to design lessons in a way that gets students involved and engaged. In addition, for students to find value in their education, lessons need to incorporate content that is relevant to their everyday lives. The approach taken to learning is a crucial factor in shaping the learning process. Besides being a response to the "social learning theory ideas" that have governed instruction for so long, "context - specific knowledge" is also a well-established theory that "encompasses the most recent results in cognitive research" (Thomas, 2010). "an intricate and complex procedure that transcends far further than drill-oriented, antecedent strategies," as the functional approach puts it, is what learning is all about (Byars-Winston & Fouad, 2018).

Concept of Contextual Learning

Contextual Learning (CL) associates mental processes with the production of semantic patterns. The method used to achieve this is known as contextual learning (CL), and it works by putting theoretical material in a practical setting. This is crucial because it aids in the storage of both short-term memory, which students tend to forget quickly, and long-term memory, which will help them apply these lessons to their future professional responsibilities (Murphy, 2012).

According to Hutson (2011), Contextual Learning (CL) is "a means of introducing content through relevant learning by presenting a highlighted theory of learning consisting a number of interactive learning approaches designed to help students connect what they fully understand to what they've been supposed to learn. Teachers facilitate learning when they provide material in a way that encourages students to draw on foreknowledge and personal experiences to build their own interpretations. Internships, service learning, and educational trips abroad are all examples of contextual learning opportunities. According to Smith (2010), the concept of Contextual Learning in education aids instructors in making connections between classroom material and real-world scenarios. CL, on the other hand, characterized the ideas as a novel method of teaching that facilitates students' transfer of knowledge from the classroom to real-world situations. The term "Contextual Learning" refers to education that takes place in the real world, outside of the classroom, and within a particular context that encourages students to apply their disciplinary knowledge and provides a stage for the cultivation of their own personal values, faith, and professional growth.

Contextual learning seeks, among other things, to create a real-world performance evaluation scenario. Contextualizing assessments can help teachers simulate authentic situations and make thoughtful, equitable modifications in the classroom. Teachers can get a clearer picture of how well the curriculum aligns with the intended learning goals, standards, and benchmarks when they employ contextual learning as a kind of formative assessment. To ensure that everyone involved in the contextual work has the same expectations for success, it is crucial to define those goals up front. This method of contextualizing education facilitates a more natural progression from college to the working world. Conducting and creating experiments using the scientific method and enquiry, for instance, encourages students to question widely held assumptions about knowledge. Education is the training of individuals, equipping them with the right kind of knowledge, skills and competencies to make them useful to themselves and to the society (Victor-Ishikaku, 2017).

Contextual learning, as described by Wishler (2013), is an active learning design that offers students a means of being introduced to course material through a number of different forms of active learning in order to facilitate a more meaningful and lasting connection between course material and their real-world contexts. When applied to the field of education, contextual learning ensures that the student has access to content that has been well researched and analyzed. Learning will be fundamentally improved by using a contextual approach. The student here is expected to take an active role in his or her education.

People in the community have a deeper appreciation for this shared characteristic of the group (Clark, 1996). As they begin to recognize and adapt patterns of interaction and interpretation made possible by the community's practices, they establish identities as contributing members of the group. Based on findings from studies of knowledge communities, it is now believed that the representational architecture inherent to the practice of certain disciplines is crucial to the development of knowledge and understanding within those communities.

People learn through engaging in activities made possible by representational architecture, but this infrastructure is often hidden from view in everyday use. However, learning processes don't necessarily benefit from a stable representational infrastructure. When the infrastructure for social or cultural activities fails, when new forms of technology are introduced (or necessary), or when people set out to better how they work together, there are learning processes that alter both the participants and the infrastructure for those practices. The majority of classroom activities are geared on helping students acquire the knowledge, abilities, and dispositions characteristic of well-established academic subfields. Participation in discourse activities, including as tests, projects, analyses, presentations, and written reports, in which the concepts, facts, and processes of the subject are used and discussed, are all ways in which students demonstrate their mastery of the domain.

Instead of focusing on studying discrete topics, as is done in the conventional approach, students that partake in conceptual understanding have meaningful learning programs that are based on a focus on fundamental thoughts and ideas. Learners are encouraged to reflect on and investigate on personal abilities and interests through the application of context-based technique. They will be able to articulate their ideas clearly and confidently, giving them a leg up in the classroom.

Student achievement in the classroom can be facilitated by Contextual Learning via:

➢ Facilitating comprehension rather than memorization

➢ Promoting adaptive learning environments

➢ Paying attention to the outcome of the learning process

➢ Connecting new information with prior understanding

➢ It will take more time to complete.

➢ Needs to be adapted to accommodate different types of students.

Features of Contextual Learning

The following are characteristics of contextual learning:

i.   stresses the importance of finding solutions

ii. acknowledging the need for learning and instruction to take place in a variety of settings

iii. help students develop the skills necessary to take charge of their education and become

iv. independent, self-directed students.

v.   embedding learning in students' unique experiences

vi. fostering an environment where students learn from one another

vii. the use of legitimate evaluation.

These are some of the ways in which contextualization is now understood to affect learning:

a) the concept of situated cognition, according to which all learning is practical knowledge

b) Social cognition and the development of intrapersonal conceptions

c) Distributed cognition refers to mental constructions that are continually molded by factors that are external to the individual.

According to the constructivist learning theory, learning can be understood as the process of deriving meaning from one's experiences. If learning experiences are presented to children in a setting in which they are interested and motivated, contextual learning has the potential to be beneficial for the development of children. Understanding of contextual learning has been helped along by contributions from a variety of experiential learning theories. It is possible for constructivist activities and direct instruction to work together in a way that is both effective and compatible in the pursuit of educational objectives. Putting in extra work will lead to improved performance on your part. The concept that an individual's aptitude is fixed throughout their lifetime is challenged by this hypothesis. An individual can find the motivation to be involved in actions including dedication to studying when they are striving towards learning goals. Experiential learning, multiple intelligence, constructed and social constructivism, constructivism, behaviorist theories, cognitive psychology, constructivism, social constructivism, and both the contextual observational learning and the collaborative effort are among the most influential educational principles.

Principles of Contextual Learning

Students might derive greater meaning from their educational experiences if they are taught within the context of their everyday lives, which is the subject of the "contextual learning" principle. Students are better prepared for life outside of the classroom when they participate in contextualized learning experiences because these experiences involve the process of analyzing knowledge in a variety of

situations and discovering how it is relevant. Students develop the ability to understand how the knowledge they have received throughout their studies is applicable to the career they desire to pursue, the workplace, other parts of life, and the world in general. Learning that is put into this kind of contextual setting paves the way for a more seamless transfer from academic institutions to the working world. Students of science can improve their critical thinking skills by, for instance, conducting and developing experiments using the scientific method and inquiry. This encourages students to question the widespread assumptions of knowledge that exist in society.

The first guiding principle is "learning as becoming," or what kinds of people do students develop into as a result of their time in higher education?

Second guiding principle: The impact of feelings on learning.

Third Principle: Teamwork isn't enough to make learning interactive

Fourth Principle: Students are more likely to retain information and be intrinsically motivated when it is embedded in a relevant context.

This, in turn, can facilitate a stronger link between classroom learning and real-world circumstances, making lessons more memorable and applicable. It is common practice to situate education in a professional setting through methods such as real learning and evaluation. In these methods, real-world activities, challenges, and events inform the instructional structure. By doing so, teaching and grading can more accurately represent the real world of work and illustrate to students how they could be asked to apply their classroom learning in a professional setting.

Students can gain a better understanding of what it takes to be a practitioner in their chosen field through contextual professional learning. It can aid students in forming a sense of professional purpose and competence as they prepare for careers in specific fields. Students benefit from contextualization because they are exposed to the viewpoints of their peers and academics from different fields and how those viewpoints relate to their own and their specific circumstances.

Critical Thinking

Students that are able to think critically are able to do more than simply memorize information. Ability to analyze, understand, evaluate, summarize, synthesize, and apply synthesis results to pressing problems—these are the hallmarks of critical thinking. This is a skill typically associated with people who are highly intelligent. This demonstrates how challenging it will be to acquire this skill alone. Critical thinking is an important skill that should be fostered in middle school. Problem-solving, decision-making, and the ability to distinguish between expert opinion and hard scientific data are all components of critical thinking. Students' enhanced ability to think critically as a result of contextual learning is not hard to fathom, as they will be required to seek out and evaluate a wide range of informational sources. Through exploration, collaboration, and collaborative group projects, students will develop their social skills. Students are more likely to actively participate in learning when a variety of multi-method approaches are used. This is consistent with the findings of Hall and Kidman (2014), who found that contextual learning reorients classroom culture to prioritize student education and allows teachers to hone their craft. By using contextual learning, students are prepared to apply their critical thinking skills across disciplines. This agrees with the view of Fisher (2019), who argues that critical thinking is an active process in which metacognition plays a key role. The imaginative capacity of the students grows.

Right thinking in the pursuit of useful and trustworthy information about the world is what we mean when we talk about critical thinking. True critical thinking requires complex reasoning, such as when students weigh the pros and drawbacks of nuclear power facilities in light of societal demands. "Critical thinking is reasonable, and reflective thinking focuses on choosing what to believe or do," as stated by Halpern (2011). The ability to generate and process new information and ideas is an integral part of critical thinking. Element of thinking, capacity, emotive domain, and intellectual standard are the four pillars of critical thinking. All four components work together as a complicated set of know-how, habits, traits, ideals, and principles. Learning to think critically is an ongoing practice. Putting up mental effort, or cognition, is crucial for intellectual growth, especially in the areas of critical thinking and advanced study.

In order to solve problems and make the best possible choice, critical thinking is the "engine" that propels one to take action or form an opinion in a given situation. In addition to habits of mind (such as inquisitiveness and open-mindedness), the ability to think critically also requires the capacity to analyze, draw conclusions, and evaluate. The question this research seeks to address is how much students' critical thinking skills increase when they use contextual learning in a course on how to teach biology.

Students are able to collaborate on projects and discuss their findings in a natural setting by using contextual applications. According to Suryawati (2010), students benefit more from group work than from solitary work while participating in community learning activities or a learning community. The learning exercise will also help pupils develop their soft skills. The settings of a learning community make it possible for a single learner to learn with many others. Smith (2010) cites the following as examples of the kinds of soft skills that can be fostered by engaging in this sort of learning activity: (1) a commitment and cooperation between participants to exchange; (2) an openness to accepting the viewpoints of others; (3) an openness to respecting the personal views of others; and (4) a feeling of duty of the collective, in which all participants share the same obligation.

Increased student engagement is a result of contextual learning. The student then assumes the role of lecturer and delivers the day's content to the rest of the class. Numerous pupils were seen to raise their hands during the question-and-answer period. More energy is brought into the classroom. It may be the middle of the day, but the pupils don't seem to mind. It is nevertheless enjoyable for students to engage in a Q & A session through discourse, which leads to longer class periods. In addition, it seemed that pupils had developed the practice of social inquiry. This fits with Zumdani's (2014) argument that students can cooperate and ultimately succeed more in the classroom when engaging in social inquiry.

When it comes time for a debriefing, students have already posed insightful questions. In the second cycle, students asked more questions and did a better job of fostering question activities. This exemplified their enthusiasm towards education. Learning, problem-solving, and higher-order thinking skills (Suryawati, 2010) can all be fostered through the use of effective questioning strategies. Balaney (2013) argues that a student-centered strategy can considerably increase students' critical thinking skills, which is consistent with the findings that students were more likely to be able to develop scientific ability.

Activities during lectures that encourage students to ask questions are a good way to steer their thinking and see how well they're doing (Suryawati, 2010). According to Smith (2010), the eight most effective ways to teach students include: (1) digging relevant data (both administrative and technical);

(2) checking for reading comprehension; (3) producing a response to the student; (4) recognizing the extent to which the student is curious about the topic; (5) recognizing the things which have already been taught to the students; (6) concentrating on an improvement in student lecture; (7) to stimulate more questions from students; and (8) refreshing students' knowledge. According to Hemming (2010), it is crucial to foster an educational setting where students may display and practice critical thinking abilities, while Haynes (2013) and Bailey (2013) both underlined the necessity of asking the proper questions to students in order to do so.

The ability to think critically and creatively is crucial at all societal levels. Any field, setting, or situation that generates thought material necessitates the use of critical thinking skills. In today's increasingly complicated world, experts across all fields believe that critical thinking skills are crucial for success. The ability to think critically is seen as a fundamental talent. There are two broad categories of the abilities that one acquires via experience rather than birth. It is possible to automate the training of facilities, or skills, which can be simplified to routines. Conversely, critical abilities necessitate focus and reflection to accomplish, and can be executed at varying degrees of excellence.

The Relationship between Contextual Learning and Critical Thinking

Learning is more effective when it makes connections between concepts and real-world situations. Learning that isn't limited to the pages of a textbook or the words of a lecturer is emphasized in the Contextual Learning approach. Active participation on the part of students is expected in all phases of their educational experience, while the instructor plays the role of guidance. It is challenging for educators to construct learning with a CL lens. The teacher will need to use their imagination to include all of CL into the lessons. There is a tight connection between each element and the requisite skills and knowledge. The article focuses on teaching students to think critically and practically.

Students that are able to think critically are able to do more than simply memorize information. Ability to analyze, understand, evaluate, summarize, synthesize, and apply synthesis results to pressing problems—these are the hallmarks of critical thinking. This is a skill typically associated with people who are highly intelligent. This demonstrates how challenging it will be to acquire this skill alone. Critical thinking is an important skill that should be fostered in middle school.

Theoretical Framework

Constructivist Theory

Dewey, cited in Jia (2010), asserts that constructivism is a crucial learning theory used to aid students' development. According to constructivist theory, knowledge is something that people create for themselves, and one's own learning experiences shape one's perception of the world. Learners essentially make use of what they already know and add to it with new information. As a result, the lessons that each person takes away from their experiences are also completely unique. You, as a teacher, must grasp this concept because it affects your students' learning in general. Teachers and professors who are familiar with the constructivist learning theory know that each student comes to class having experienced the world in their own special way. How well someone learns depends on a number of factors, including their history and level of experience. Teachers can aid their students in making sense of their prior knowledge by applying constructivist learning theory. Whether you're already in the teaching profession or hoping to start a career in it, it's crucial that you have the proper training and certifications. You and your pupils might benefit from knowing about learning theories.

Learn more about the constructivist learning theory and how it might benefit your classroom with this helpful resource.

Incorporating contextual teaching principles helps to promote authentic learning and promotes students' achievement by helping them to create connections as they construct knowledge. Because "knowledge acquisition is a process of continual self-construction," famous Swiss biologist, philosopher, and child psychologist Jean Piaget writes that the genesis of knowledge is genetic epistemology, which he also calls constructivism.

Learning as response strengthening, based on the study of animals learning in laboratory settings; and learning as knowledge acquisition, where the learner passively absorbs information presented by the expert, are two earlier popular views of learning that Mayer (2009) argues are distinct from the concept of constructing knowledge. He defines constructivism as "active learning" in which the student has access to and makes use of a wide range of mental tools. Focusing on what's important, forming meaningful mental models of that information, and then using those models to make sense of new information and integrate it with what you already know are the three main cognitive processes.

Principles of Constructivist Theory

The way constructivist theory functions and is applied to students is shaped by a number of distinct features and principles.

➢ Knowledge is built up over time. This fundamental concept states that new information must be based on previously acquired data. Each learner can create an own work of art by assembling the parts in his or her own special way. The student's background information, including their prior learning, experiences, beliefs, and insights, is crucial to their future growth as a learner.

➢ To put it simply: when people learn, they learn how to learn. To learn is to engage in the process of developing meaning and meaning systems. A learner can learn both the definition of chronology and the chronology of dates for a sequence of historical events. Writing a paper about history is a great way to practice language and composition skills. Every new piece of information increases our capacity to comprehend the world around us.

➢ Activity is essential to learning. In order to learn, the brain has to take in information from the senses. Learning is not a passive process; it requires action on the part of the learner. Students require real-world experiences to become invested in their own growth and development. You need to actively participate in talks, reading, activities, etc., rather than merely sit and wait to be taught stuff.

➢ The best way to learn is in a group setting. The quality of our social connections is inversely proportional to how much we learn. Learning is influenced by those who teach us, raise us, or associate us socially. Teachers who recognize the need of collaboration among students increase their chances of success. The best method to help students learn and develop as a community is not through individual study. Conversation, interaction, and group applications are all used in progressive education because of their proven effectiveness at helping pupils retain information.

➢ The context in which one is learning is crucial. Students do not learn facts and theories in a vacuum, but rather in ways that build upon their prior knowledge, their worldview, and other factors. There is a correlation between the items we observe and the information we retain.

➢ In other words: knowledge is individual. When knowledge is based on one's own experiences and assumptions, as in constructivism, it is highly subjective. Everyone will contribute their own unique set of skills and experiences to the table. As a result, individuals will acquire significantly varied skills and knowledge through their educational experiences.

➢ The mind is the seat of learning. Learning requires both theoretical background and practical application, but the former is never sufficient. Learning is more effective when the mind is actively involved. The mind and the hands must work together in order to learn. Acquiring knowledge requires accumulating mental experiences.

➢ Having a reason to learn is essential. An uninterested student cannot study. Teachers need strategies for getting students involved and enthused about learning. Students have a hard time drawing on their prior knowledge and making relevant connections to new material if they aren't inspired to do so.

Types of Constructivism

Educators can find success with this learning theory by utilizing one of several different varieties of constructivism:

➢ Cognitive: The central tenet of cognitive constructivism is that instruction should take into account the student's current level of cognitive development. These strategies aid students in acquiring new knowledge by establishing meaningful associations between the material being studied and prior experience. The research of French psychologist Jean Piaget on children's intellectual growth is the basis for the theory of cognitive constructivism.

➢ To emphasize the importance of social interaction in the educational process, social constructivism emphasizes the value of group work. Knowledge grows as a result of people's interactions within their communities, cultures, and the larger society. In order to construct their own knowledge and reality, students rely on the experiences and insights of others and learn from the teachings of others. Lev Vygotsky is credited with developing the social constructivist approach to learning, which builds on cognitive constructivism by considering the impact of the learner's social environment and peers.

➢ When compared to cognitive and social constructivism, radical constructivism stands out for its radical differences. Learners and the information they produce tell us nothing fundamental; they merely enable us to get by in the world. The central thesis is that new information is created, rather than found. Unfortunately, due to our preconceived notions and biases, we can never get at the truth, just our own interpretations of the information we have gathered.

Constructivism in Education

It is crucial to understand how teachers might utilize constructivism inside their classroom to create a unique learning environment for pupils. The teacher in a constructivist classroom works to foster an atmosphere of cooperation and individual responsibility for learning. Facilitators of learning rather than educators best describe teachers. Teachers need to figure out what their students already know and don't know, and then work to fill in the gaps. It is the responsibility of the educator to modify their methods of instruction accordingly. The foundation of any successful constructivist classroom is built on four pillars:

➢ Collaboration between educators and their mentees.

- ➢ A structure in which both teachers and students hold equidistant levels of power.
- ➢ For students, teachers serve as a kind of facilitator.
- ➢ Students work together in intimate study groups.

Constructivist classrooms are typically extremely different from normal classrooms in many ways. Students in constructivist classrooms are encouraged to ask and explore their own questions as they work in collaborative groups to solve authentic problems and construct their own knowledge through teacher and student discourse, reflection, and feedback. Teachers in constructivist classrooms generally have students work in small groups, engage in activities that require them to work together, and have frank discussions about their individual learning styles and the resources they have access to.

Challenges with Constructivist Approaches

A major critique of the constructivist approach to education is that it lacks a clear framework within which students might learn. Some kids do best when lessons are extremely ordered and structured.

Contextual Learning and Active Learning Theory

As far as educators are concerned, any method that is not a straight-up lecture in which the teacher explains something to the students counts as active learning. Students need to be doing more than just listening, according to Chickering and Gamson (1999). Encourage curiosity and stimulate higher-order thinking through the use of methodologies including cooperative and collaborative learning, integrated learning, problem-based learning, and work-based learning.

Student problem-solving and the application of problem-solving abilities throughout a student's formal education experience have been found to improve when students are given the opportunity to actively participate in their own learning through the use of such tactics. Active learning, or "learning by doing," is broken down by Lankard into three subcategories: (1) action learning, which is based on the idea that learning requires action and action requires learning; (2) situation learning, which involves teaching knowledge and skills in contexts that reflect how they will be used in real-world situations; and (3) incidental learning, which is defined as a spontaneous action or transaction whose intention is task accomplishment, but which results in learning. Berge uses a quote from Lave in his research on active, interactive, and reflective learning to highlight the significance of students' ability to construct meaning through contextual learning: "In an ideal situation, independent learners would take what they have learned and apply it, making it meaningful in the context of actions and interactions within their own lives as they seek personal satisfaction, credentials, and advancement along their chosen career path." Students are better able to make sense of what they are learning within the context of their own community of practice when they are given the chance to collaborate with their peers and teachers.

Conclusion

This paper has shown how students' contextual learning and critical thinking skills can be improved. Understanding broader norms or ideas that can be applied to different explicit models is at the heart of contextual learning. Using context, students can get a deeper comprehension of unfamiliar topics and environments. Students need to be able to apply what they learn to real-world situations. So, this is why it's important to place emphasis on context when teaching and learning. To put it another way, when students use contextual learning, their ability to think critically is enhanced.

Suggestions

The paper suggests as follows:

1. Contextual learning approach should be encouraged in the school system by education providers by creating an enabling environment.

2. Teachers should be trained through seminars and workshops on how to carry out contextual teaching approach

3. The teacher education curriculum should be revised to enshrine the tenets of contextual learning to prepare to be able to carry out such approach in the classroom.

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