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Review Article

Fostering Creativity and Critical Thinking in 21st Century Classroom

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Abstract

This paper sought to examine the prospect of fostering creativity and critical thinking in 21st century classrooms. In achieving this, 4 concepts and 1 theory were reviewed to seek how relevant creativity and critical thinking are to students in our modern 21stcentury world that we live in. This paper showed that creativity and critical thinking are essential ingredients that define credibility in individuals in society. It was then concluded that creative and critical thinking are pivotal to student's success in the 21st century society and otherwise. It was recommended that teachers should endeavor to engage students to initiate their creative and critical thinking ability at almost all endeavors of instructional activity also that curriculum planners should endeavor to devise an instructional pattern that favours the utilization of creative and critical thinking prospects.

Keywords: creativity, critical thinking, 21st century classroom

Introduction

Teaching is a prospective concept that has undergone several changes in terms of its meaning and connotation. The way and manner in which teaching was viewed in the pre-globalized era differ from the way and manner in which it is viewed in this globalized era. This departure from its original meaning and connotation can be attributed to the essence that was entangled in it. In accordance with previous views of education as a whole, teaching can be viewed as the process by which the human mind is refurbished and refined into acceptable requirements laid out by society at large in relation to growth and development. It was primarily regarded as the entire essence of acquiring the necessary amount of knowledge. This prospective definition of what teaching entails may still be acceptable in the globalized era, but it must be refined. This refinement brought about the notion of the paradigm shift in the entire teaching and learning process.

Gabdrakhmanova et al. (2016) brought about the assertion that change of an educational paradigm includes the transition from the education aligned on teaching to the education aligned on training; which can be constrained to the potency of imbibing the right and necessary skills in individuals for the present era of the 21st century. As opposed to the traditional teaching pattern where the main emphasis was placed on acquisition and transfer of knowledge; the prospect of a paradigm shift from traditional to a more beneficial teaching and learning process can be said to be more aligned on the student; change of teacher's role; the further definition of the main goal; transition from potential to result; change of the training process. This process of refining can be linked to the essence of teaching. As the world transitions from a non-digital to a digital era, the essence of teaching shifts from just the transmission of knowledge to students to the application of that knowledge in the pursuit of solutions to problems. The agenda of acquiring solutions to mediating societal problems has thus engendered the need for there to be an iota of instilling the notion of creativity and critical thinking ability in these students.

Creativity and critical thinking are two concepts that go hand in hand and are extremely important in the world we live in today. This is due to the fact that the ability to be creative as a result of critical thinking is an important feature that is expected of possession in every aspect of life today. It can be deduced that the concept of creativity is what has served as the foundational basis for the prospect of numerous innovations that have been adopted by various countries around the world. Even the entire concept of rebranding the world today through the presence of technology is creatively complex. As a result, it has a significant impact. According to Nakano and Wechsler (2018), the notion of creativity and critical thinking towards innovation are very much essential in our society as of today as it helps in promoting individual well-being, in both personal and professional achievements. With this, it can therefore be accrued that a teaching paradigm that is poised with the notion of imbibing individuals with the necessary skills of being creative and thinking critically towards proffering solutions to problems is thereby intertwined with the concept of teaching realism that prepares individuals ahead for the task that the real world is likely to throw their way.

With so much emphasis placed on creativity and critical thinking, there is a need for sufficient restructuring of the teaching concept to align with this new agenda. That is thus seen as an attainable term in the 21st century classroom because it poses important characteristics that 21st century students must exhibit. To advance the importance of critical thinking and creativity as the

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primary agenda of education, in the twenty-first century, there is a need for a proper understanding of some necessary concepts that can help further ascertain the essence of this topic under study. The observed distinctions were made via the careful review of related reports that have been conducted by other researchers that are present in both online journal publications, dissertations, bulletins and the likes of it, which were specifically held a range of 10 years from the current year (2021). This search was guided with prompt criticism that will prompt further assertions to further support the major basis for the study.

Theoretical Framework

Classical theory of education by Jean Piaget (1964). According to classical education theory, development comes before learning, and learning is the result of experience and both mental and physical maturation (Piaget, 1964). The Classical Theory of Education Crisis is both a theory of the constitution of education crisis – its nature – and a theory, or explanation, of it. It is critical to critique The Classical Theory of Education Crisis as the default theory of education crisis in order to advance understanding of the concept and phenomenon of an education crisis.

Classical education is analogous to a large museum with many beautiful, awe-inspiring rooms that could be studied for a lifetime. It is a long educational tradition that has emphasized the pursuit of truth, goodness, and beauty. Grammar, logic, rhetoric (the trivium's verbal arts), arithmetic, geometry, music, and astronomy are among them (the mathematical arts of the quadrivium). Latin is also studied as part of this educational approach. The traditional method teaches students how to learn and think.

What is it about classical education that makes it so effective? Its approach to how and when students are taught is largely responsible for this. Regardless of their learning style, children learn in three phases or stages known as the trivium (grammar, logic or dialectic, and rhetoric). Students in the grammar stage (K–6) are naturally good at memorizing through songs, chants, and rhymes. If you can get children this age to sing or chant something, they will remember it for the rest of their lives.

Students in the dialectic or logic stage (grades 7–9) are naturally more argumentative and begin to question authority and facts.

They want to understand the "why" of something—the reasoning behind it. Students learn reasoning, informal and formal logic, and how to argue with wisdom and eloquence during this stage. The rhetoric stage (grades 10–12) is when students naturally develop as independent thinkers and communicators. They study and practice rhetoric, which is the art of persuading others and writing in a way that pleases and delights the reader. This approach to teaching students based on their developmental stage, once again, is what makes this approach so effective.

Conceptual Framework

Concept of teaching creativity. In a society that strives for innovation and progress, the word "creativity" is a positive one. Creativity is an active process that is required for innovation. It is a learning habit that necessitates skill as well as a thorough understanding of the contexts in which creativity is employed. The creative process is central to innovation, and the terms are frequently used interchangeably. When the word "creativity" is mentioned, the first thing that comes to mind is the ability to come up with solutions when there appear to be none.

Creative thinking is defined as the thinking that enables students to apply their imagination to generating ideas, questions, and hypotheses, experimenting with alternatives, and evaluating their ideas, write Kampylis and Berki (2014, p. 6). Kaufman and Beghetto (2009, p. 6) developed four categories of creativity that aid in revealing the nuances between various levels and types of creativity, as follows:

1. Big-C creativity (also known as "high" creativity): Big-C creativity is reserved for the work of a select few who have transformed their discipline through their inventions. Their work has been widely recognized as innovative and ground-breaking, despite being controversial when it was first created. Scientific works like Einstein's theory of relativity and Darwin's theory of evolution are examples, as are works of art like Picasso's Guernica, Jane Austen's novel Emma, or Ludwig van Beethoven's Symphony No. 9 in D Minor. Big-C creativity is out of reach for the vast majority of us, and big-C.
2. Pro-C creativity: Developing this type of creativity takes time (usually at least ten years) and effort. A pro-c musician is one who showed promise as a child, trained to a degree level, and now makes a living teaching and playing classical music. A physicist who teaches and conducts academic research at a university could also be classified as pro-c.
3. Little-Cingenuity: Little-c creativity was defined by Craft (2005, p. 43) as "acting with flexibility, intelligence, and novelty in everyday situations." Accordingly, Richards (2007, p. 5) connoted further that as a result of this, something new with 'originality and meaningfulness' is created. This type of everyday creativity can be found in someone who can solve a complex problem at work or who is an avid gardener. School-age students who engage in purposeful practice in their discipline can work at the little-c level. Little-c creativity requires practice and can take a long time to develop. The internet has created the infrastructure for small-c creativity to flourish. Websites like YouTube, Instagram, and Etsy allow creative people to share their knowledge and work.
4. Mini-C creativity was defined by Beghetto & Kaufman (2007, p. 73) as "new and personally meaningful interpretations of experiences, actions, and events." Craft (2005, p. 19) further noted that this is the type of creativity that teachers and parents can foster. 'Mini-c occurs when a person's thinking demonstrates "flexibility, intelligence, and novelty." It is typically applied to, but not always limited to, children's creativity.

One feature of the creative process that makes it particularly potent is that it necessitates not only knowledge and understanding of the domain under investigation but also a willingness to question and be unconstrained by existing knowledge. Learners should understand how to question or challenge established knowledge in order to formulate their own understanding, and imagination can play a role: 'You can't think creatively unless you have the knowledge to think creatively.'

According to Johnson-Laird (1988, p. 207), as cited by Sternberg (2012, p. 4), "creativity represents a balance between knowledge and liberation from that knowledge." Creative thinking must be grounded in the understanding of the content being investigated in order to deepen and extend learning rather than being an enjoyable but superficial activity. It is critical that students understand the material with which they are being asked to be creative. Creative practice should supplement, not replace, diligent and deliberate practice in the development of foundational skills.

Scholars like Butler et al. (2012) have reported on the importance of creativity in student success. Castillo-vergara et al. (2018) further asserted that creativity has an impact on a person's future success. To further support this assertion, Kuo et al. (2017) pointed out that creativity gives someone the ability to create innovations in a variety of fields. Jackson (2016) concluded by saying that creativity is more than just a cognitive function because it occurs in a system with many parties involved, such as students' interactions with educators, peers, and other people, as well as with other things or ideas.

Concept of teaching critical thinking. Critical thinking is now a standard course in college and university settings. The art of critical thinking, which is frequently taught as a way to "improve" thinking, entails a way of thinking—and, more importantly, learning—that embraces changing how one thinks about thinking. Critical thinking encompasses how students develop and apply thought in order to comprehend how thinking can be improved. A person is typically considered a critical thinker if he or she intentionally improves their thinking on a regular basis. On this note, Murawki (2014) asserted that the basic idea underlying the study of critical thinking is straightforward: identify one's thinking's strengths and weaknesses in order to maintain the strengths and improve by focusing on the weaknesses.

Ennis (2011) classified critical thinking into two types: dispositions and abilities. In his writings, the ideal critical thinker

is inclined to make the "right" decision, present that decision honestly and clearly, consider other's points of view, seek to be well informed, and avoid intimidating or confusing others. Furthermore, critical thinkers can focus on a question, analyze and argue, judge the credibility of a source, make and value judgments, clarify and refine their viewpoint, appropriately support their viewpoints, and imaginatively imagine and integrate the logic of a viewpoint with sensitivity to others.

Kim (2009) defined critical thinking as a skill that can be learned on one's own. The development of student's critical thinking skills can be accommodated by an appropriate curriculum and teaching method. In the same vein, Ornstein et al. (2011) claimed that critical thinking is necessary for everyday life because it promotes right and directed decision making, the formation of opinions based on logical reasons, and the confidence in maintaining conclusions about what to do and receive correctly (Bassham et al., 2011). The significance of critical thinking is also linked to the actions taken. As promptly asserted by Spuzic et al. (2016), critical thinking necessitates the recognition of assumptions that serve as the foundation for our beliefs and actions. In other words, we can provide justification for the ideas and actions we take.

According to Ruggiero (2012), critical thinkers are people who can move beyond "typical" thinking models and into advanced thinking. Critical thinkers generate more and better ideas than poor thinkers. They improve their thinking skills by employing a variety of probing techniques that allow them to discover new and often improved ideas. Critical thinkers, in particular, tend to look at a problem from a variety of angles, consider a variety of investigative approaches, and generate a variety of ideas before deciding on a course of action. Furthermore, Murawki (2014) connoted that critical thinkers are more willing to take intellectual risks, be adventurous, consider novel ideas, and use their imaginations when analyzing problems and issues.

What is the significance of critical thinking in the workplace? When people are asked to make a decision or solve a problem, they must use critical thinking. People who work make decisions. Some are sound decisions that propel the company forward and increase profits. Others are bad decisions that harm the company and reduce profits. This is a common occurrence at any level of the workplace. Through the decision-making process, critical thinking in the workplace has the potential to impact people in either a positive or negative way. Decisions are frequently made and passed along to people within organizations without much thought because there is a need to take some action. In this case, the consequences of "normal" actions may be insignificant based on daily routine.

However, Murawki (2014) stated that when it comes to critical issues/problems, "bad" decisions can have a negative impact or result in a serious blow to the business. The Connection between Critical Thinking and Creativity; Problem identification and definition have an impact on creativity (Mumford, 2003). Kaufman et al. (2016) asserted that people who are creative are aware of the presence of problems. They believe that without problems, people have few opportunities to demonstrate their creative abilities. According to Runco and Jaeger (2012), creativity is extremely beneficial in problem-solving. Lemons (2011) added that the characteristics of creativity include recognizing, discovering, and being aware of problems in order to find solutions.

Duff et al. (2013) and Crilly (2015) pin-pointed that creativity can also be associated with the discovery of a novel and original solution to an existing problem or the generation of novel problem-solving ideas. Thus, creativity can assist someone in dealing with unexpectedly difficult circumstances. To achieve the desired results, Almeida and Franco (2011) added that critical thinking is a complex process that necessitates high-level reasoning. Critical thinking requires a variety of skills. On this note, Hong and Choi (2015) posited that critical thinkers constantly question the source of knowledge information, test the validity of the information, and analyze the reliability of the information, allowing them to provide precise explanations on specific tasks or situations. Philley (2005) further asserted that critical thinking could be viewed as a multidimensional cognitive construct that entails the interaction of inductive and deductive reasoning as well as creative processes in various stages of problem-solving. Critical thinking, in this sense, in the view of Miele and Wigfield (2014), consists of cognitive, dispositional, motivational, behavioral, and metacognitive functions.

Instead of being bound by rules or looking for something ordinary and unauthentic, creativity and critical thinking include new perspectives. They are inseparable and cannot be considered as two distinct entities. Spuzi et al. (2016) asserted that creativity and critical thinking sometimes complement each other because the creative process is likely to involve a variety of critical thinking skills (Villalba, 2017).

Vernon and Hocking (2014) further claimed that critical thinking necessitates analysis, judgment, logical decision-making, and problem-solving, whereas creativity generates original ideas and finds new solutions. The way a person approaches a problem from various angles can influence his or her creativity.

The creative tendency is to generate original ideas, views, and perspectives to solve problems, whereas critical thinking focuses on generating logical ideas, views, and perspectives to solve problems. Chang et al. (2015) distinguished that critical thinking entails both logical and creative aspects. In fact, both creative and critical thinking develop concurrently. Spuzic et al. (2016), on the other hand, argued that creativity and critical thinking are not always mutually exclusive. Creativity is associated with divergent modes of thought, whereas critical thinking is associated with convergent modes of thought.

For university students, critical thinking and creativity are essential. Critical thinking can help students make decisions (Butler et al., 2017), adapt to changes (Alper, 2010), and benefit the community (Dwyer & Eigenauer, 2017). Creativity is critical in developing imaginative thinkers capable of creating innovations in a variety of fields (Kuo et al., 2017). We solve our problems by ourselves, we come up with new ideas, and critical thinking allows us to analyze these ideas and adjust them accordingly. Critical thinking is still a skill that can be used to foster innovation; research has shown that critical thinking and creativity are linked.

The importance of critical thinking and creativity in the classroom for 21st century students. The twenty-first century has seen significant changes in all areas of life, including education. Students in the twenty-first century should develop skills that differ from those developed by students in the previous century. Schools and universities in the twenty-first century must also prepare students for a different social life, a different economic world, and a more demanding and skill-oriented workplace. It is the century of digital literacy, technological advancements, multicultural societies, human mobility, global communication, social networking, innovations, creativity, and inclusion. In other words, students in the twenty-first century must acquire the necessary 21st century skills (Saleh, 2019).

Critical thinking is at the forefront of learning because it allows students to reflect on and comprehend their points of view. Based on personal observation and understanding, this skill assists students in determining how to make sense of the world.

Critical thinking can be embedded in a variety of academic disciplines, and faculty can design their course focus to be more thinking-skills-based. With this in mind, some argue that educators should assist students in becoming successful for future job performance. Education must focus on developing students' critical thinking skills in order to prepare them for success in life. Students will be better prepared to collaborate successfully, think critically and analytically, communicate effectively, and solve problems in the workplace if they have these skills. As a result, Kalonji (2005) stated that "students will develop strong leadership, communication, and teamwork skills, as well as cross-cultural and cross-national awareness and, most importantly, confidence in their ability to contribute to the science and engineering community."

Critical and creative thinking improves communication skills by improving one's ability to present ideas in well-constructed, systematic arguments. Critical thinking is useful in life because it allows you to think creatively 'outside the box.'

Critical and creative thinking requires students to think broadly and deeply in all learning areas at school and in their lives outside of school, employing skills, behaviors, and dispositions such as logic, resourcefulness, imagination, reason, and innovation.

Conclusion

Given everything that has been said thus far, it is reasonable to conclude that creative and critical thinking are critical to students' success in 21st-century society and elsewhere. From the reviewed works thus far, it can be seen that the authors cited in work brought about a much digressive intent on the connotations of the major concepts in this work, i.e. (creativity and critical thinking), thereby making the notion of stressing its importance in the 21st century education and its outcome to be well laid out.

Recommendations

Based on the preceding discussion, it was therefore recommended that:

1. Teachers should strive to engage students in initiating their creative and critical thinking abilities in almost all endeavors of instructional activity.
2. Teachers should also be flexible in their instructional process so that students can explore more in order to develop high levels of creativity and critical thinking abilities.
3. Curriculum designers should strive to create an instructional pattern that encourages the use of creative and critical thinking skills.

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