Creativity and Innovation: Current Practices through Teaching Methods in Secondary Schools

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ABSTRACT

Creativity involves creating something new, such as a new problem solution, method, or artistic object or form. Creativity in the curriculum is a student-centred, thematic approach to teaching that supports natural curiosity and stimulates creativity, enhancing learning through imaginative methods. Effective teaching necessitates flexibility, creativity, and responsibility to create an educational environment that caters to the individual needs of the learner. Despite the implementation of various teaching and learning approaches, 21st-century education still faces numerous challenges in Sri Lanka. However, the younger generations and teachers are advancing by incorporating creativity and innovation into their teaching and learning activities. The major goal of this study was to identify the current practices of creativity and innovation through teaching methods in secondary schools. The mixed method was used as a research method. The sample was comprised of 10 teachers and 115 students in secondary schools in Colombo District. Data were collected through questionnaires and interviews. Qualitative material was thematically analysed by hand and quantitatively through SPSS. The research found that most of the teachers used interactive lessons, problem-solving methods, peer teaching, project-based learning, blended learning, and peer feedback for the development of their creativity in the classroom. Furthermore, creativity can be fostered through direct instruction in a supportive classroom environment, focusing on powerful questions and problems rather than group work with a teacher as a facilitator. This study suggests that teachers should make an effort to educate students using student-centred learning rather than traditional teaching methods in order to ensure that students' creativity and innovation skills improve.

Keywords: Creativity, innovations, methods, practices, secondary schools

INTRODUCTION

They are new teaching strategies that are more student-centered. These innovative ones encourage students to actively participate in lessons and interact with their classmates and the teacher. Students will have to work harder, but in a way that better meets their needs and allows them to grow faster. Unlike traditional teaching, which focuses on how much knowledge teachers can pass on to students, innovative teaching focuses on what students truly take away from the lesson. Many schools, teachers, and trainers have been experimenting with new teaching strategies to keep students interested in and engaged in the new normal. A common understanding of what creativity is for education and what it entails is therefore the first envisaged step for a creative and innovative education. Moreover, research recognises several factors that could create a nourishing and creative environment. Teachers, for instance, are key figures in constructing a creative climate, but they need support from both policymakers and institutions. In particular, curricula and assessment are key areas to be addressed in order to allow creativity in the classroom (Cachia et al, 2010). Current educational changes in various countries have linked pedagogical innovations with cross-curricular competencies like social and communicative skills, meta-cognitive skills, reasoning, and creative thinking (Kohler, Boissonnade, & Giglio, 2015). Creative and innovative teaching methods enhance students' understanding, interest, and long-lasting memory, positively influencing their academic performance. The researcher proposes ways for education institutions to adopt student-centred learning for improved academic

performance (Narayanan, 2017).

There are additional advantages to using innovative teaching methods, such as encouraging research, improving problem-solving and critical thinking skills, incorporating more soft skills, and improving self-evaluation. Education is the force that propels any community or nation forward. Despite the deployment of numerous teaching and learning methodologies, 21st-century education faces numerous obstacles. Pedagogical improvements have been linked to cross-curricular competences such as social and communicative skills, meta-cognitive skills, reasoning, and creativity in recent educational developments in many nations (Kohler, Boissonnade, & Giglio, 2015). To meet today's demands, educators must abandon yesterday's concepts and pedagogies and become outspoken advocates for the development of the kind of learning dispositions required for our students and their future careers (Kwek, 2011). The new problems of social development in today's world necessitate the manifestation of human qualities and talents capable of adapting to the dynamically changing conditions of life and work. Modern school curricula must demonstrate academic and creative abilities (Narayanan, 2017).

Many education institutions are pushing forward these days by incorporating creativity and innovation into their teaching and learning practices. Creativity is defined as the ability to create or bring something new into life, whether it's a new problem solution, a new method or device, or a new artistic object or shape (Olatoye, Akintunde, and Ogunsanya, 2010). Design thinking is a type of learning that focuses on building students' creative confidence through hands-on projects that emphasise empathy, promote an action bias, encourage indention, and nurture active problem-solving skills and competencies. Educators can assist students in acquiring a skill set that includes ideas not often nurtured in traditional settings while also improving their academic performance by incorporating creativity and innovation into the teaching and learning curriculum.

As a result, the purpose of this study is to determine which current teaching approaches in secondary schools promote creativity and innovation.

LITERATURE REVIEW

Creativity is defined as the ability to create or bring something new into life, whether it's a new problem solution, a new method or device, or a new artistic object or shape (Olatoye, Akintunde, & Ogunsanya, 2010). According to Pennick (1992), creativity is the process of becoming sensitive to issues and disharmonies, identifying them, searching for answers, making educated guesses or hypotheses, maybe revising and restating them, experimenting to find results, and eventually conveying the results. According to Runco (2007), creativity is a uniquely human attribute that shows our ability to adapt to changing situations as well as our effective cognitive capacities to integrate and improve upon ideas.

It is critical that teacher education prepare new teachers to be reflective practitioners capable of identifying how a teaching method or activity can stifle or stimulate creativity in their students. The final Report on the EU Member States' Creativity and Innovation in Education (2010) mentioned that teachers with the greatest interest in innovation and changing pedagogical methods were those who had already gained some years of teaching practice after their initial training. Teacher education programmes must be reviewed and revised to promote diverse and innovative teaching methods, digital competence, and teaching cross-curricular competencies with ample hands-on classroom practice and efficient guidance. Furthermore, it is critical to facilitate the professional development of confidence and capabilities in order to enable teachers to take creative risks within traditional and cautious systems. The internet's potential as a space for peer learning and interaction with outside experts should be explored further, and existing European networking activities such as eTwinning should be promoted more effectively among all schools and teachers.

Student inventiveness appears to differ by country in education. According to the Final Report on the EU

Member States' Creativity and Innovation in Education (2010), the term "creativity" is mentioned in school curricula in many European countries. In comparison, the term "innovation" is rarely used in school curricula. As shown in Table 1, eleven countries and regions have a high relative occurrence of the search terms in compulsory education school curricula (general curriculum documents and subject curricula), seventeen have a medium relative occurrence, and only eight have a low relative occurrence.

Table 1: Relative occurrences of the search terms and synonyms in primary and secondary school curricula in EU27: country groupings

High (Relative occurrence >1.0)	Medium (Relative occurrence > 0.5 -<1.0)	Low (Relative occurrence < 0.5)
Austria Belgium (German speaking community) Czech Republic Estonia Hungary Lithuania Latvia Portugal Slovenia United Kingdom – Northern Ireland United Kingdom – Scotland)	Belgium – Flanders Bulgaria Germany – Bavaria Germany – Saxony Greece Spain – Andalucia Spain – Extremadura Spain – Extremadura Spain – Madrid Spain – national level Finland France Ireland Luxembourg Slovakia Sweden United Kingdom – England United Kingdom – Wales	Belgium – Wallonia Germany – Lower Saxony Denmark Italy Malta The Netherlands Poland Romania

Adapted from the Final Report on the EU Member States' Creativity and Innovation in Education (2010)

Creativity is commonly regarded as a skill, as in 'creative thinking' or 'creative problem solving'. It is

regarded as an essential component of the learning process for assisting children and adolescents in becoming successful learners, confident individuals, responsible citizens, and effective contributors. Thus, creativity is regarded as a necessary skill that should be encouraged and developed in most subjects.

There are some innovative teaching methods that are used in classrooms. For example: Interactive lessons, using virtual reality technology, using artificial intelligence in education, Blended learning, Use the design-thinking process, project-based learning, inquiry-based learning, Jigsaw, cloud computing teaching, Flipped classroom, Peer teaching, peer feedback, cross-over teaching, and personalised learning (https://ahaslides.com/blog/15-innovative-teaching-methods/?limit=all, 25-04-2023).

According to Fazelian and Azimi (2013), with rapid changes in science, technology, and communications, humans must be more innovative and creative. As a result, both the family and the school must encourage students' creative thinking. The question is, how will we achieve this gold? Preparation in the educational system may be the best solution.

- Being able to go through proses for inventing something new.
- Thinking of useful ideas in order to be able to heighten perception of our surroundings for a unique fruitful end.
- Make children sensitive to the surrounding
- Respecting children vies. Paid attention to Creative environments in organizations such as schools.
- Respecting the value of creative thinking of children.
- Considering adequate rest period times in school programs.
- Encouraging creative children for constructive criticism.
- Preparing variety of knowledge in different areas for teachers. Preparing live and active teaching methods.
- Making teachers and students familiar with problem solving methods. Preparing learning environments away from fear and shyness.
- Education will play a major axis.   Fazelian and Azimi (2013, p.722)

Trilling and Faded (2009) contend that effective teaching in this new paradigm requires a shift from teacher-centered to student-centered learning, from direct teacher instruction to interactive exchange with and among students, from teaching context knowledge to equipping students with relevant skills, and from teaching basic content to problem-solving processes.

Bruce (1989) and Wu (2002) emphasize the importance of teaching innovation in enhancing students' learning ability. Leaning occurs when appropriate strategies and skills are applied to technology use, while teaching innovation stimulates students' interest and proactive learning.

METHOD FOR THE CURRENT STUDY

The main question of this study was to identify the teaching methods that teachers use in the classroom to encourage creativity and innovation. The mixed method was used as a research method. The research questions were investigated through questionnaires and interview schedules. Due attention was paid to ethical considerations as required by the British Educational Research Association (2011). The sample was comprised of 10 teachers and 115 students in secondary schools in Colombo District. Qualitative material was thematically analysed by hand and quantitatively through SPSS.

FINDINGS

To promote creativity and innovation, the majority of the teachers used problem-solving and inquiry-based

learning techniques in the classroom. One of the teachers adds that the students should use their prior knowledge to connect with the current issue and come up with answers. Further, she added, "Good teachers ask questions at just the right time to stretch students' thinking while also providing just the right amount of support." However, selecting a teaching method to promote creativity and innovation is dependent on a number of factors. For example, student age, classroom environment, studied discipline, and so on. The interview with the teachers revealed that they used a variety of approaches, including the lecture method as well as individual and group work.

Table 1 shows that the Students' responses focused on the teaching methods that teachers employ in the classroom to foster student creativity.

Teaching Method	Yes		No		Total	
	No.	%	No.	%	No.	%
Interactive lessons	76	66.0	39	34.0	115	100
Problem Solving	75	65.2	40	34.8	115	100
Using virtual reality technology	13	11.3	102	88.7	115	100
Blended learning	52	45.21	63	54.79	115	100
3D printing	18	15.66	97	84.34	115	100
Use the design-thinking process	12	10.43	103	89.57	115	100
Project-based learning	60	52.18	55	47.82	115	100
Inquiry-based learning	42	36.53	73	63.47	115	100
Jigsaw	16	13.91	99	86.09	115	100
Flipped Classroom	02	1.73	113	98.27	115	100
Peer teaching	63	54.79	52	45.21	115	100
Peer feedback	51	44.35	64	55.65	115	100
Crossover teaching	19	16.53	96	83.47	115	100
Personalised teaching	21	18.27	94	81.73	115	100

Most of the teachers used interactive lessons and problem-solving methods to foster student creativity in the classroom. Teacher interviews revealed that creativity can be fostered through direct instruction in a supportive classroom environment, focusing on powerful questions and problems rather than group work with a teacher as a facilitator. Further direct instruction should involve a highly skilled, active process in which the teacher engages and challenges student thinking, responding quickly to student thinking as it emerges. Discussions are focused on important concepts and ideas, with questions from students. The teacher stimulates thought and encourages new ideas and new ways of thinking.

More than 60% of students said that their teachers used peer teaching and project-based learning. Project-based learning involves learners collaborating on complex problems within one or multiple subjects. It involves reflective, creative, and critical thinking skills. To succeed, clear learning objectives, a supportive curriculum, and active teacher involvement are crucial. Teachers should stand back for exploration and experimentation but also challenge student thinking and bring learning to a productive conclusion.

Over 50% of students responded that blended learning and peer feedback were used for the development of their creativity in the classroom. Self- and peer-assessment is a valuable feedback tool for students, fostering meta-cognition and enabling self-evaluation. However, it is often mistrusted for its validity and reliability. Despite this, self-assessment offers insights into group processes, which are often invisible or difficult to discover. It can be used to detect collaboration characteristics and build learner profiles, supporting group formation in future assignments. Griesbaum and Gortz (2010). Further teaches suggests that teaching

methods enhance social skills like teamwork and communication, leading to better marks and grades and boosting self-confidence among students.

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