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## **Role of Digital Process in the Development of Creativity for Sustainable National Development**

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### **Abstract**

This paper examined the importance of digital process in the development of creativity for sustainable national development by providing a brief explanation on sustainable development, creativity and digital creativity. The paper through the review of several related literatures identified the three basic needs of creativity in educational system, as teaching for basic creative thinking, relevant innovative skills and design of societal values. Some basic characteristics of creative persons such as smartness, playful, discipline were identified. Digital creativity was as the use of digital processes to generate, express, and communicate new and original ideas, products or solutions. The need for creativity to be included in Nigeria educational system was also stressed. The roles of digital processes in the development of creativity for national development were discussed and certain basic tips that can trigger creativity are recommended.

**Keywords:** sustainable development, creativity, digital processes

### **Introduction**

Development refers to the process of growth, progress, and improvement in various aspects of human life, society and the economy, which implies a change in an economic, social, environmental, cultural growth and advancement. As a phenomenon, it suggests that people are able to control their future and improve their conditions, such as living conditions capacity to feed, educational level, life expectancy etc, through process towards something better. According to Gabora (2022), the purpose of development is to move a society from an existing state, along the most efficient path, to a more desirable state of sustainability at a specified time and this make development a transition from the existing state towards the desired state. Development depends on the interplay of the matrix of interacting social, economic, political, technological and other variables characterizing the existing state and the human response to these conditions. This human response hinges on three main factors: namely, the possibilities existing in the domestic material environment, the past and/or continuous achievements in other societies;

and, the constraints and opportunities desired from the global socio-economic environment (Lee, 2016). Sustainable development encompasses social well-being, which largely depends on education and introduction of information technology can serve as a driving force behind educational reforms.

The integration of innovative technologies, including mobile devices such as interactive whiteboards, and virtual labs has transformed the education landscape in schools and institutions as it opens up the learning of new things that are enjoyable and this trigger the development of creative process which is vital in providing a wide range of talents needed to create intellectual property and wealth in any nation. Creativity encompasses the capacity to reimage, reinterpret, and recombine existing concepts, resulting in novel ideas, effective problem-solving and enhanced adaptability in the face of change. It may also be viewed as a dynamic cognitive process that enables individuals to generate new ideas, products, or solutions by making connections between seemingly unrelated concepts, and adapting to evolving circumstances. Akinboye, (2003) observed that creativity has different effect on individuals, teams and organization and he gave three kinds of creativity as:

1. Individual Creativity, which is individuals using creative minds to solve problems and also seen as a function of the personal characteristics which include the personal expression of feelings and thoughts, innovation of new ideas and products and finding novel solutions to complex problems.
2. Team Creativity refers to merging a number of individual creativity levels together for appropriate leadership, cultural ideas and inventions not possible by just individual this include collaborative problem-solving, brainstorming through sharing ideas and building on each other's thoughts and co-creation of new products, services, or experiences.
3. Organizational Creativity refers to creativity that measures how multiple agents can effectively solve a problem through individuals or teams by fostering a culture that encourages experimentation, risk-taking or applying a human-centered approach to innovation and problem-solving. Aligning creativity and innovation with business strategy and goals make creativity one of the major critical management resources needed to remain competitive and is found in the creative person, the creative process, and the creative product. This plays a crucial role in our education, and workforce.

Digital creativity involves all forms of creativity enabled by digital process that allow one to create imageries that are not possible with any other medium. (Briton, 2015). Important aspects of digital creativity include digital tools

software and hardware, creative expression, innovation and interactivity. The internet and related digital tools have made a profound influence on creativity at the personal, group, and organizational levels which have changed all aspects of creativity. For example, by using digital technologies, companies are more creative in locating loyal customers and improve corporate performance and use digital technologies tools such as online learning environment and digital libraries to support creativity in various areas of human activities such as brainstorming, creativity, problem solving, gaming, arts and design, among others.

Educators have expressed their concern about a lack of creativity in the school curriculum because it is an essential life skill needed in the educational process, so that both learners and teachers can use it to support imaginative expression and creative thinking so as to produce things that has originality and value to individuals, peers and society. Creativity unlock learners' interests and have a positive effect on students with behavioral and social difficulties, including those deemed hard to teach.

Creativity as crucial as it may be to individual as well as corporate success, applying it in the environment results in the creation of new valuable products, services, ideas, procedures, or processes. Many organizations now regarded creativity as the basic building block for innovation in a global competitive environment.

### **The need for creative thinking**

Creative thinking and creativity are some major expected outcomes of education. Education according to Gabora, (2022) need to generate the innovative ideas that can keep us afloat because of change in time. Gabora (2022) further noted that creativity isn't just great to have but it is an essential human skill that is imperative in our technology- driven world and for education to play its basic role in national development, it needs to teach at least three things; Basic creative thinking, relevant creative thinking and innovative skills and design societal values through creativity and innovation. The three became necessary as every society has the responsibility to use all its resources to improve the living conditions of its people. Shulman (2022) noted that for education to be functional it should make teaching creativity a priority and gave the following reasons to encourage teachers to bring more creativity in to the classroom.

(a). Creativity motivates learners to learn. Research had linked creativity with the intrinsic motivation to learn such as student working on a passion project and teacher designing engaging lessons, which make students focused on a creative goal, they become more absorbed in their learning and more driven to acquire the skills they need to accomplish. Students can tie their learning to their personal

interests, have sense of autonomy and control over their task, and thereby feel competent in the work they are doing.

(b). Creativity can light up the brain. This is by helping students to connect new information to their prior knowledge, when teacher frequently assign class work involving creativity. For example, students are more likely to observe higher-order cognitive skills such as problem solving, critical thinking and making connections between ideas.

(c). Creativity spurs emotional development. Terral, (2020) also noted that creativity give students the freedom to explore and learn new things from each other, overcome challenges and bring their creative ideas into practice. Also students begin to see that they have limitless boundaries which create confidence, promote self-esteem and emotional development.

(d). Creativity can show those students that are not good in paper work but are super creative. Some students may not do well on paper work, because of the structure of the school but can be innovative and good at using their hand to create new things.

(e). As an essential job skill of the future, because as automation continues to swallow routine skills, and those who rely on such soft skills like creativity will continue to grow. Imbriale, (2019) observed that human beings cannot exist without creative thinkers. Again it's one thing to be able to sit in front of computer screen and program something and another to have the conversations and engage in learning about what someone wants out of a program to be written in order to be able to deliver on that.

Wands, (2015) identified the following as some of the characteristics of creative persons to include: possess a great deal of energy, also are often quiet and at rest; tend to be smart, yet also naive at the same time; have a combination of playfulness and discipline; alternate between imagination and fantasy at one end, and rooted sense of reality at the other; harbor opposite tendencies on the continuum between extroversion and introversion; remarkably humble and proud at the same time; extent escape rigid gender role stereotyping and have a tendency toward androgyny; generally, are thought to be rebellious and independent; passionate about their work, yet they can be extremely objective about it as well; and openness and sensitivity which often exposes them to suffering pain yet also a great deal of enjoyment.

Contrary to popular belief though, all human persons have a creative streak. Maybe it's not in the areas typically associated with being creative, but all

possess the ability to create; to make something new and valuable. Being creative is more than just producing something new.

### **Digital Processes and Creativity**

According to Lee (2016), digital process refers to a series of automated steps that can be executed electronically to achieve a specific goal. This often involves the use of digital technologies, such as software applications, algorithms, and data analytics, to streamline and optimize workflows. Gobara (2022), outline some characteristics of digital processes as:

1. Automation; Digital processes often automate tasks that needed to be repeated and thereby freeing up human effort for more strategic or creative work.
2. Electronic data exchange; Digital processes rely on electronic data exchange, such as APIs, EDI, or messaging protocols, to facilitate communication between different systems or stakeholders.
3. Algorithmic decision-making; Digital processes often employ algorithms to make decisions or take actions based on the predefined rules or criteria.
4. Data driven insights; Digital processes typically involve the collection, analysis, and visualization of data to inform decision-making or optimize outcomes.
5. Scalability and flexibility; digital processes can be easily scaled up or down to accommodate changing business needs, and can be adapted to accommodate new technologies or workflows.

Examples of digital processes include; Digital on-boarding, E-commerce order fulfillment, digital payment processing, customers service chat bots and supply chain management. He also highlighted some benefits of digital processes as; increase efficiency by reducing manual errors and increase productivity; improve customer experience through faster, personalized services; enhance data insights that inform decision-making and optimize outcomes, reduce cost of labour, minimize errors and optimize resource allocation and increase agility by enabling organizational change to market conditions, needs and technological advancements.

Digital processes can lead to creativity in several ways among which include; facilitating idea generation, enhancing collaboration, enabling experimentation, and fostering innovation. Examples of digital processes that can

foster creativity include; Design thinking software, AI-powered art tools, Virtual reality and augmented tools and digital work stations

## **Digital Creativity and Education**

Creativity according to Terral, (2020) refers to that capacity of the mind that enables human beings to solve problems and producing innovation. This implies a transformation generated by the introduction of novelty. Generally, a person is creative when the person uses an original approach to solve a problem, breaking out of established and traditional patterns to arrive at an entirely unexpected and more effective solution. Akinboye (2007), asserted that creativity allow people to see problem from different angles and makes it possible to find new solution that nobody had thought of before. In the present day realities, reinventing one and stay up to date is the basis of all work and learning activities. This makes creativity to assume a fundamental role in the school and work place. Creative skill is considered among the most important characteristics that a good leader should possess, in order to be able to fearlessly face constant novelty, abandoning obsolete approaches to embrace innovation.

Making use of digital processes to enhance creativity means breaking out of the classical patterns, to connect very different elements together, so as to examine a given situation from a completely new point of view through making use of digital tools such as online brainstorming tools to generate ideas and collaborate with others, use of 3D modeling software and digital workstations to bring ideas to life and the use of virtual reality and online courses to gain new skills and explore new subjects. The aim is to arrive at innovative solutions.

New technologies have also transformed the traditional concept of creativity, allowing this new fundamental skill in the world of work to further break down the barriers it faced. In fact, digital process has opened up a new world made up of more and more inputs where the user finds information that makes it easier to break down architectural, physical and mental barriers, making various work and training activities accessible to all. Digital tools give the user the freedom to create new content from scratch, or to modify, combine and enrich existing content that allow the users to play with knowledge and tools, giving free control of their ideas. Lee, (2023) listed the following five key actions as fundamental skills for success in the world of work.

- Synthesizing already known information to transform ideas into new forms;
- Connecting ideas through the use of organizational techniques, such as categorizing, ranking or prioritizing;

- Comparison between one's own ideas and those of others, to identify similarities and differences and evaluate the most effective components;
- Use of feedback, to be able to correct and revise one's products based on the preferences and criticisms of others.
- Clarity in presenting one's ideas.

Digital creativity skill is a fundamental aspect of working life today. With new technologies, this skill has also invaded the digital world, by providing important tools for its development.

### **Importance of Digital Technologies in Nigeria's Educational Development**

The globalization of education has already necessitated the application of digital technologies. Online platforms are now available for conducting classes, sharing resources, doing the assessment and managing the day-to-day activities of academic institutions. However, the use of these platforms was proactive as it assists the realm of education by rapidly transforming the way students' learn. Various factors such as COVID-19 Pandemic has forced the institutions to adopt the digital technologies in teaching to sustain the education system and to assist in developing abilities that require students' professional performance, such as problem-solving, thinking, structure creation, and process comprehension and also preparing the students for a more unpredictable and changing future. People worldwide are aware of the catastrophe caused by the corona virus epidemic. In this crisis, digital technologies were use in keeping the educational system afloat by allowing students to learn from the convenience of their own home.

Lee (2016) opined that students' acquired quality knowledge and abilities that are essential to their academic success through educational resources and digital tools that help to provides easy technique for teachers to determine students' learning of the presented content quickly and assists where more explanation is required. Integrating technology into education provides students with an engaging learning experience, allowing them to remain more interested in the subject without being distracted. The utilization of projectors, computers, and other technological tools in the classroom make learning fascinating and entertaining for students thereby making learning to become more dynamic and engaging through establishing tasks in class that incorporate technology resources to enhance oral presentations, and increase group participation. From the environmental impact of using less paper for handouts and books to the time saving and convenience of research, cutting costs, better utilization of resources, promote sustainability and expand both reach and impact for students and teachers. Therefore, technology can improve the face of education by making it more inexpensive and accessible.

## **Conclusion**

Digital creativity is a new frontier in today's world of work, where technology and digital technology have led to continuous evolution in the need to find new solutions to different problems. Therefore, breaking out of traditional patterns of learning becomes necessary in order to face the challenges that the digital world confronts us with every day.

### **Recommended tips that can trigger creativity:**

1. **Do sport.** Studies have shown the importance of sport in the creative process. Walking or running can be a good way to 'clear your head' and stimulate the birth of new ideas. Movement, in fact, allows the mind to leave aside the many thoughts and worries of everyday life, because it requires maximum concentration on the body. In this way, it will be easier to open up new horizons and find innovative solutions.
2. **Practice meditation** to lower stress levels and encourage the creative process. Often, emotions and everything around us take over at the expense of concentration and creativity suffers. Thus, one can find oneself stuck in a problem, unable to find a solution. Banishing stress and negative emotions is essential to allow positive ideas to re-emerge and the creative process to start again.
3. **Read.** Reading allows the imagination to develop, because it takes you into an invented world without fully revealing all the components. Unlike a film, in fact, a book leaves the mind free to imagine places, characters and situations, without putting any brake on the imagination.
4. **Visit new places.** In this way, your cultural background can be enriched and the new horizon in front of you will allow the creative process to be stimulated.
5. **Use digital tools.** Digital supports creativity. In fact, there are several online tools such as smartboards, digital libraries and virtual reality that enable the development of the creativity, allowing the user to train and cultivate the new skills and develop the senses and requires the ability to solve problems faced by the user.
6. **Do something you have never done**, such as enrolling in a course on subjects or experiences you have never done. Creativity is more easily stimulated when you step out of your comfort zone.
7. **Create the right environment**, or change it often, so as not to remain crystallized in one perspective. Change, in fact, can generate new ideas.
8. **Invent stories or experiment with role-playing.** These are useful activities to develop creativity, because they require imagination, inventiveness and the ability to deal with new and often unexpected

situations. The importance that creativity is assuming as a competence for the work of the future have also been demonstrated by reports from the World Economic Forum, which lists it among the skills most sought after by employers. Among the set of knowledge, skills and work habits important for success nowadays is problem solving and creativity.

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