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Building Creative Capacities through Art Teacher Education in Zimbabwe

Abstract

The human capital in the Zimbabwean labour market lacks the capacities to critically and creatively address technological, economic and industrial challenges. The new education policy, Education 5.0 requires graduates to design solutions to these problems. This conceptual paper demonstrates that the required creative and critical skills necessary for innovation are currently not learnt and developed in higher education. Creative and critical thinking skills form the core objectives of art education, but are neglected and negated by stakeholders. A fluidity of skills rooted in basic and advanced competencies which are grounded in abilities such as critical thinking, communication, and creativity have been characteristic of Zimbabwean art teacher education programs and can be seen as transferable in addressing other challenges.

Keywords: creativity, critical thinking, transferability, innovation, problem solving

Introduction

Education aims to equip learners for the future (Winthrop & McGivney, 2016). Hunter communities taught children survival skills like crafting tools, tracking animals, distinguishing edible from poisonous plants, and how to negotiate with others. We now require education that can prepare children for a world of rapid change in technology, products and value (ibid). That is, education not fixed and bound by time and space but endowed with skills which are transferable. In this paper we argue that the knowledge and skills taught in art are relevant to meet contemporary and future challenges in various fields and disciplines including science and technology. Winthrop and McGivney (2016) suggest that education should provide skills that can enable students to be agile learners, able to adapt and learn in a fast-changing environment. This paper draws evidence from literature to argue that the skills valued at the core of art which are creativity, problem solving and critical thinking are the prerequisite skills for innovation and industrialisation (Riley, 2013; Festa, 2009; Reid et al., 2009). Artists have the unique ability to form novel, intuitive, imaginative ideas and produce creative and desirable innovative solutions to address economic, social, technical and industrial challenges.

Background

The goals of the Ministry of Higher and Tertiary Education, Science and Technology Development (MHTESTD) in Zimbabwe have been reformed in response to the hyper transformations which have affected the economy and industry in many negative ways (MHTESTD, 2019, *Strategic Plan*, p. 17). MHTESTD has therefore set new objectives to transform the ministry into an innovation and

industrial hub in order to change the economy by 2030. The strategic plan aims at developing innovative graduates with industrialisation drive who can think scientifically, analyse problems objectively and apply facts to problems in society (MHTESTD, 2019, *Strategic Plan*, p. ii). This implies reforming education goals to provide essential education needed for developing human capital of creative thinkers to solve problems within the socio-economic context of Zimbabwe. Creativity is channelled towards and limited by the need to solve socio-economic problems, while artistic creativity is negated and seen as non-essential.

Creativity is a complex feature which can be conceptualised from various perspectives. Beaty (2018) and Haridy (2018) agree that creativity is defined as the ability to come up with new and useful ideas. Therefore, novelty is the hallmark of creativity (Festa, 2009). Creative thinking calls for non-traditional thinking, different from the ordinary day to day practices (Wallas, in Sadler-Smith, 2016). The aims of art education enshrined in the UNESCO *Road Map* (2006) and the *Seoul Agenda* advance the core function of art education in human survival. UNESCO *Road Map for Arts Education* was a major outcome of the First World Art Conference held in Lisbon, Portugal, in 2006. The *Road Map* (2006) offered an important theoretical and practical framework that provided guidance for advancing the qualitative development and growth of arts education. A central goal of the Seoul Conference (2010) was to reassess and encourage further implementation of the *Road Map*. The *Seoul Agenda* (2010) is a concrete plan of action that integrates the substance of the *Road Map* within a structure of three broad goals, each accompanied by a number of practical strategies and specific action items. Among other things art aims to uphold the cultural participation and developing individual creative capabilities. Three broad aims from the *Seoul Agenda* (2010) reiterate that, firstly, art education is the foundation for balanced creative, cognitive, emotional, aesthetic and social development of children, youth and life-long learners. Secondly, the arts develop skills that are responsive to local needs, infrastructure and cultural contexts. The third goal states that applying art education principles and practices contribute to resolving the social and cultural challenges facing today's world.

The aim of this paper is to demonstrate how creative activities, critical and creative thinking that are inherent in art are key to innovation and industrialisation to support the education reforms in Zimbabwe higher education. Reid et al. (2009) illustrate how the process of thinking employed in design can be applied to the urban realm in order to find creative solutions to social issues within communities which would, in turn, facilitate the sustainable regeneration of an area. Creative thinking skills can become a personal aptitude which develops when dealing with changing social, technological, and economic demands even outside art education. Beaty (2018) indicates that people who did better on creative tasks also tended to have more creative hobbies and achievements. Exposing art students to creative activities enhances their ability to think creatively (ibid). Artistic creative skills are transferable to the fourth industrial revolution where creative and innovative solutions to social and economic issues in 21st century are demanded.

Paradoxical education 5.0 in Zimbabwe

Ever since Zimbabwe attained its independence in 1980, three key result areas for higher education (known as Education 3.0) namely, teaching, research and

community service were indicative of performance. To date, two more indicators, innovation and industrialization have been added to create a new doctrine called Education 5.0 meant to turn around the challenging economic and technological deficits (MHTESTD, 2019, *Strategic Plan*). To achieve this goal, tertiary education must now produce graduates who can think scientifically and analyse problems objectively (ibid, p. 11). Education 5.0 develops human capital that can apply the repository of knowledge to produce contextualised technological innovations for industry. The doctrine of heritage guides the new education policy by utilising indigenous resources to solve indigenous problems (ibid, p. ii).

Maths and Science have traditionally been envisioned as significant drivers of technology, innovation and productivity (Winthrop & McGivney, 2016; Friedman, 2014; Riley, 2013). Riley (2013) argues that science on its own cannot address these challenges. The STEM to STEAM movement has been consolidated in recent years as a positive mode of action to meet the demands of innovation, technology and industrialisation (Riley, 2013). STEM is an acronym for an educational approach to learning basing on Science, Technology, Engineering and Maths. STEAM is an educational approach which integrates STEM with Arts as access points which guide students to inquiry, critical thinking and problem solving (Riley, 2013).

STEM alone misses several key components that many employers, educators, and parents have voiced as critical to thrive in the present and future (Friedman, 2014). Riley (2013) argues that, while STEM initiatives are a wonderful start into the exploration of these four areas of study, they are still ritualistic. STEAM removes ritualised limitations and replaces them with wonder, critique, inquiry, creativity, imagination and innovation. According to Friedman (2014) Google currently employs people with high learning ability and advanced leadership skills, while content knowledge is rated lowly. Winthrop and McGivney (2016) allude to a study of technical and vocational students in Nigeria which showed that the socio-behavioural skill of self-efficacy was positively and significantly predictive of career adaptability. Strong skill foundations are important for developing advanced cognitive skills, socio-behavioural skills, and skills predictive of adaptability. Across the developing world higher-order thinking, social skills, and self-motivation are "highly valued by employers" (Friedman, 2014). The World Economic Forum 2018 reports that creativity and innovation are the skills of choice in the labour market. Innovation and industrialisation require application, creation and ingenuity (Friedman, 2014) instead of an understanding of subject content.

The *National Critical Skills Audit* (MHTESTD, 2018, *ZNCSA*, pp. vi-vii) summary emphasises the rejuvenation only of the science and technology sector to meet innovation and industrialisation demands. The questions arise whether and how innovation can be achieved in a curriculum that does not expose learners to creative thinking. In this paper we argue that exposing learners from all disciplines to art skills will enhance much required creative and innovative abilities within their distinctive fields of study.

The higher education system which has now been synchronised with the advent of a national qualifications framework should be geared in unison to produce critical and innovative graduates for industrialisation (MHTESTD, 2018, *ZNQF*). The horizontal comparability of education and training qualifications aligns all qualifications through minimum bodies of knowledge (MBKs). This level of content

planning omits and denies opportunities for the development of creative and critical thinking skills. All programs and qualifications in principle carry the mandate to drive Education 5.0 to success. The applied arts and humanities should leverage multi-dimensional creativity, entrepreneurship and technological innovation (MHTESTD, 2018, *ZNCSA*). Innovation is a critical drive for growth and prosperity but without art exposure it is ironically denied to Zimbabwe higher education graduates.

Creativity and creative thinking

The term creativity takes many forms in its definition and application. Creativity can be conceptualised as a product, process, personality or condition of environment (Wallas, 1926). It is a product when we see a new physical product of awe, distinction or novelty (Torrance, 1965). Sadler-Smith (2016) conceptualised creativity as a personality trait or individual ability to role taking, risk taking, facing challenges and bringing change. Eisner (2002) contends that creativity implies a condition of the environment for doing things differently, anew or significantly improved practice. Creativity is also viewed as a sensitisation to problems and solutions, deficiencies, gaps in knowledge, missing elements and disharmonies (Sadler-Smith, 2016). As a thinking process, creativity entails inventing new ideas and solutions (Beaty, 2018). Drucker (2002) from a business perspective defines innovation as the effort to create purposeful, focused change in an enterprise's economic or social potential. The innovation and industrialisation challenges of Zimbabwe are hinged on developing creative solutions.

There are several scientific explanations to the neurological processes of creative thinking. Beaty (2018) holds that the default, executive control and the salience brain networks are involved in creativity. The default network is a set of brain regions that activate when people are engaged in spontaneous thinking, such as mind-wandering, daydreaming and imagining. This network may play a key role in idea generation or brainstorming and finding solutions. The executive control network is the logical reasoning mind which plays a key role in idea evaluation or determining whether brainstormed idea actually work and modifying them to fit the creative goal. The salience network plays a key role in alternating between idea generation and idea evaluation. According to Beaty creative thinking only occurs when the three networks are activated and connected simultaneously. Cavdarbasha and Kurzek (2017) hold that the frontal cortex, hippocampus, basal ganglia and white matter support creative thinking. White matter, similar to the salience network, connects various brain structures during creative thinking (Beaty, 2018). The better connected the areas are, the better and faster the brain can process information and think creatively.

In the neurological creative thinking process, a well-connected brain may connect ideas quicker. Beaty (2018) and Cavdarbasha and Kurzek (2017) agree that these systems' synchrony seems to be important for creativity. Beaty (ibid.) postulates that the frequently creative thinking brain is better able to engage the different brain systems that don't typically work together. Haridy (2018) and Beaty (2018) found that people who often invent creative ideas and activities are better enabled to engage these brain networks and structures. Art students who by nature of

their discipline stretch their minds to regularly think creatively are better equipped to engage in creative thinking and solving problems outside art.

Creativity in art education aims

An activity's objective describes its inherent value and benefit (Reid et al., 2009; Festa, 2009). The aim of arts education is to assist the development of creativity, critical thinking and communication skills, and the nurture of aesthetic sensitivity and cultural awareness (UNESCO, 2006, *Road Map*, pp. 3-4; UNESCO, 2010, *Seoul Agenda*).

In art communication is mediated through visuals between the sender and receiver. The ability to develop visual literate students promotes sensitivity to the physical environment as one is more enabled to interpret visual stimuli. Visual literacy provides vehicles for the exploration of new alternatives in human relations and communications in science, technology and industrialisation which demand a pertinent visual problem-solving skill (Lanier, 1972). The new demands of our societies require that art education aims to cultivate a broad set of skills.

Another intrinsic value of the study of art is in the form of aesthetic experience (Lanier, 1972). Aesthetic experience implies the recognition of the character and importance of visual elements and principles in the environment (ibid). This aesthetic experience can create critical consciousness to search for new art experiences, seeing the relationships between the arts and the environment (Reid et al., 2009).

Critical thinking in art activities

Art students vacillate between the roles of artist as creator and reader-viewer during production and criticism respectively when reflecting on their own work or that of others. In both roles, the art activities provoke abundant opportunities for imagination, creative thinking and reconciliation with socio-cultural experiences.

Designer projects, painting and sculpture activities all demand high imagination and creativity, uniqueness and ingenuity from the artist. Art as a discipline lends itself to the development of problem awareness and the creation of innovative solutions.

Critical studies and discipline-based art education are art curriculum models which have components of engaging students in art reflection, appreciation, perception and criticism. When art students assume the reader-viewer position, they develop a critical awareness of the relationships between personal imagination, collective experience, and socio-cultural contexts (Reid et al., 2009). Festa (2009) argues that the critical engagement with a work of art as a viewer, acknowledges the contention of experience and interpretation between subjective response and objective reality. For instance, the ramification of such a relational engagement with a work of art such as *Mona Lisa* swings the mind between highly academic content and deep democratic emotions, the principles of balance and tonal values and the emotional presence of the gaze. Thus, art criticism, reflection, appreciation and perception practiced by the reader–viewer serve as opportunities for developing critical thinking not only for its own sake but for any other future visual engagements even outside the field of art (Eisner, 2002; Gardner, 2004).

Conclusions and recommendations

In order to achieve the Education 5.0 goals, higher education ought to be redirected towards developing creative and critical thinking capabilities. Higher level abilities including skills in self-directed learning, collaborative problem solving, and team building meet the innovation and industrialisation goal. Creativity and critical thinking are transferable skills and abilities, which can be applied to a wide range of different jobs and industries. Developing creativity and critical thinking skills moulds active learners who seek to disrupt ordinary thinking and practice and are courageous to understand complex subject matter.

Education systems need to develop participants who are dynamic, adaptive and able to transfer skills creatively and innovatively to respond to the needs of the workforce and industry. Jobs requiring analytical or creative and innovative skills are on the rise.

Therefore, education goals are recommended to focus on:

(1) development of citizens whose response to the whole spectrum of the visual arts is disruptive, critical, flexible and adaptable;
(2) engagement of art student teachers with critical art pedagogy to raise awareness of challenges and opportunities in their environment.

As new courses and programs are being introduced, the focus should be on student centered learning.

References

Beaty, R. (2018*)*: *New study reveals why some people are more creative than others.* https://theconversation.com/new-study-reveals-why-some-people-are-more-creative-than-others-90065 (Accessed 26 January 2020).

Cavdarbasha, D. & Kurzek, J. (2017): Connecting the dots: Your brain and creativity. *Frontiers for young minds*, 5(19), 1-10.

Drucker, P. F. (2002): The Discipline of Innovation. Entrepreneurship. *Harvard business review*. https://hbr.org/2002/08/the-discipline-of-innovation (Accessed 26 June 2019).

Eisner, E. (2002): *The Arts and the Creation of Mind.* New Haven: Yale.

Festa, A. (2009): Teaching Critical Thinking to Freshman Writers by Engaging Contemporary Artists' Work. *Human Architecture: Journal of the Sociology of Self-Knowledge*, 7(1), 115-136.

Friedman, T. L. (2014): How to Get a Job at Google. *The New York Times*, 23 February. http://www.nytimes.com/2014/02/23/opinion/sunday/friedman-how-to-get-a-job-at-google.html (Accessed May 16, 2016).

Gardner, H. (2004): *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Haridy, R. (2018): The neuroscience of creativity: How the brains of innovators are wired differently. *New Atlas*, 17 January. https://newatlas.com/creative-throught-brain-activity-networks/53025/ (Accessed 26 January 2020).

Lanier, V. (1972): Objectives of Teaching Art. *Art Education*, 25(3), 15-19.

Ministry of Higher and Tertiary Education, Science and Technology Development (MHTESTD) (2019): *Strategic Plan 2019-2023: The Doctrine, Modernisation and Industrialisation of Zimbabwe.* Harare: Government of Zimbabwe.

Ministry of Higher and Tertiary Education, Science and Technology Development (MHTESTD) (2018): *Zimbabwe National Critical Skills Audit Report (ZNCSA).* Harare: Government of Zimbabwe.

Ministry of Higher and Tertiary Education, Science and Technology Development (MHTESTD) (2018): *Zimbabwe National Qualifications Framework (ZNQF).* Harare: Government of Zimbabwe.

Reid, I., Wood, B., Harrison, D. & Clements, M. (2009): *Applying Design Thinking to Regeneration*. International Conference on Engineering and Product Design Education.

Riley, S. (2013): Pivot Point: At the Crossroads of STEM, STEAM and Arts Integration. *Edutopia*, 18 December. https://www.edutopia.org/blog/pivot-point-stem-steam-arts-integration-susan-riley (Accessed 3 November 2019).

Sadler-Smith, E. (2016): Wallas' four-stage model of the creative process: More than meets the eye? *Creativity Research Journal*, 27(4), 1-32.

Torrance, P. E. (1965): Scientific Views of Creativity and Factors Affecting its Growth. *Creativity and Learning*, 94(3), 663-668.

UNESCO (2006): *Road Map for Arts Education*. Lisbon: UNESCO.

UNESCO (2010): *Seoul Agenda: Goals for the Development of Arts Education*. Seoul: UNESCO.

Wallas, G. (1926): *The art of thought*. London: Jonathan Cape.

Winthrop, R. & McGivney, E. (2016): *Skills for a changing world: Advancing quality learning for vibrant societies*. Brookings Institution. LEGO Foundation.

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