

# Contexture

TOWARDS INCLUSIVE CARIBBEAN FUTURES

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# *Abstract*

It's 2020, the Caribbean has been in a period of rapid transformation for a while, where entire industries are changing, identity is in constant flux, and the role people play in the productivity of world affairs is increasingly questionable. Musically we are at the crescendo, and as a region with many vulnerabilities, the Caribbean needs to actively participate in creating a new kind of future for itself. Contexture is a three-part project that weaves together a central story; the future is creative.

Centered in Barbados, this research focuses on the untapped potential of the creative economy and the possibilities of redesigning education to better equip the youth to engage creative thinking in their lives. It is an attempt to bridge the gap between the need for creativity in the economy and the lack of teaching adequate creative thinking methods in the school curriculum. This study introduces a flexible way for teachers to explore implementing creative thinking methods in classrooms across a variety of subjects. The workshop designed, serves as an accessible and practical tool to begin shifting the critical consciousness of both teachers and students alike.

## **KEYWORDS:**

critical pedagogy, creative thinking, inclusive Caribbean education, decolonization

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## Dedication

The love and labour of this work is for Carmen,  
whose laughter I still hear passing in the wind.

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# Preface

I was born in the Antilles, on the island of Barbados<sup>1</sup>; the easternmost nation in the Caribbean. I've been privileged to access high-quality education from primary and secondary school through to higher education. I have also been blessed with parents who worked hard to afford me with an abundance of extra-curricular activities in the arts. As I journeyed through life, my creative endeavours have mostly been privately funded and allowed me to follow my curiosity and discover my talents. Increasingly, I could see that the value placed on the arts was unequal to other subjects; in both education and economic sectors.

As I sit up North and look towards the tropical landscape of my home, I can see there is something on the horizon. It's that time of the evening on a warm Bajan beach when the tide turns just before the sun fully sets. There is a resurgence happening in the Caribbean, a kind of energy that's bubbling up and wants to be released. As CARICOM (Caribbean Community)<sup>2</sup> continues efforts to move the region forward it's clear there is untapped creative potential waiting to be discovered. Education and economic futures are inextricable and thus bridging this gap has been my motivation to actualize this project.

In doing this work, I am grounded by the words of Ursula Franklin, a Canadian public intellectual, when she said we should aim to live lives that are “personally happy and publicly useful”. My desire to make a social impact on this world (to be publicly useful) cannot ignore that the subject of my attention (Caribbean art, education and economies) is deeply entrenched with postcolonial customs and thus, this project and my intention is a small act of decolonization.

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1 The Indigenous name for Barbados was Ichirouganaim of Arawak origin believed to mean 'red land with white teeth'. The name 'Barbados' comes from a Portuguese explorer Pedro Campos who in 1536, called the island Os Barbados (The Bearded Ones) based on the appearance of the island's fig trees, which have long hanging aerial roots. (Minority Rights Group International, 2008)

2 CARICOM is the oldest surviving integration movement in the developing world. It is a grouping of twenty countries: fifteen Member States and five Associate Members committed to economic integration, foreign policy coordination, human and social development and security for over 16 million citizens who reside in the Caribbean. (Caricom, 2020)

## PREFACE

In the spirit of decolonization, it's important to note that the language and tone used throughout this MRP is not presented in traditional academic prose as that would perpetuate the traditional elitism of higher education and prevent full accessibility and inclusion to the words and ideas I want to share. I embody this narration as recognition that decolonization is an improbable achievement without the presence of the colonized body. It is my hope that this project empowers agency amongst the artists, the youth, and the educators to enact creative thinking and doing within their environments to enjoy the freedoms that possible Caribbean futures can bring.

# *About this Project*

**Contexture** is a three-part project that weaves together a central story; the future is creative. It was inspired by the central question *What would the Caribbean look like if creativity led the region?*

What if creativity became the largest natural resource in the Caribbean? What if creative output was truly valued in the marketplace? What if Caribbean people become the next wave of innovators? These questions were explored by way of inclusive design, critical theory, and speculative design and examined three core areas essential for achieving a creative economy: cultural identity, education and imagination.

This project is a series; each part is connected but complete in itself. This MRP is part two which focuses on education; parts one and three can be found at [www.thisiscontexture.com](http://www.thisiscontexture.com)

# *Introduction*

# Introduction

“What kind of mirror image do you have of yourself? Let me tell you what kind of mirror image I have of you,... an image that the people of Barbados would be able to run their own affairs, to pay for the cost of running their own country, to have an education system which is as good as what can be obtained in any industrialized country, anywhere in the world.”

– *The Right Honorable Prime Minister Errol Barrow, Barbados 1986*

## The Need to Create a New Caribbean Vision

In the emerging efforts of a new nation, establishing the basics are required. I think that it's now time to go beyond basics and expand our vision. British Caribbean nations sprung out of colonial power into independence in the early 1960s and the vision these founding leaders held at the time was revolutionary; self-sustained, self-educated and self-governed economies operating on pride and industry and producing a quality of life that rivalled larger imperial nations. In many ways, this has been accomplished but the model that allowed for this growth is now over fifty years old. We are now in a period of globalization and rapid technological changes which are transforming businesses and decreasing the need for traditional labour.

The Caribbean Development Bank cautions that the Caribbean could become “the poorest region in the world by 2050” if the ease of doing business is not addressed by its member states. (Ram, 2020) The CDB director explained that after two decades the region's Gross Domestic Product (GDP) per capita dipped below the world average in 2016. Their 2018 *Sustainable Caribbean Economy* report listed key challenges facing the region include “macroeconomic, productivity and competitiveness, human development and environmental.” (Ram, 2020) No longer is it a case of just having a high quality of education, but instead it's a case of having an education that can adequately prepare students for this new global era. The same goes for employment and business where the functionality of these roles needs to rapidly adapt to continue being useful and competitive. Failure to adapt could mean that we lose the ability to be an active contributor to the future.

## The Untapped Potential of the Creative Economy

When I think of a sustainable Caribbean, I think of intrinsic talent and values. I think of that which cannot be destroyed by external conditions but instead can withstand the pressures imposed on the region. There is something unique about a region so diverse and yet so connected; fractured by distance but inhabiting all the shores of the Atlantic with shared history and customs. As I am from the Caribbean, I can tell you that “thing” is our creativity. The Caribbean is rife with creativity, but it has not been the focal point of our economies as relatively “new” independent nations, the arts are often viewed as a thing of pleasure, not a fundamental need. However, it seems time to nurture these talents and create a new mirror image that can propel us into the global digitized future.

The Inter-American Development Bank states that “creativity is the inexhaustible resource in Latin America and the Caribbean” known as the ‘orange economy’ and that “creativity as a driver of innovation can contribute to diversification as a necessary tool for having a globally competitive knowledge-based economy.” (Luzardo et al., 2017) In 2016, the World Economic Forum, listed in their publication *The Future of Jobs*, that the third most needed skill for work by the year 2020 was creativity, preceded only by the ability to solve complex problems and critical thinking. To put it in context, the workforce of the entire worldwide orange economy is larger than that of the European, Japanese and U.S automotive industries. “In 2015, the orange economy in Latin America and the Caribbean sustained a number of jobs comparable to that generated by the entire economy of Costa Rica or Uruguay.” (Luzardo et al., 2017)

The creative expressions of the Caribbean are distinct but have remained somewhat contained to a local or grassroots level. Creativity cannot be understood here without the context of class. In almost every area of the arts, there is some form of education needed to fully learn and master the craft and thus Caribbean artistry has not yet flourished into self-sustained and profitable industries robust enough to contribute to the economy in a significant way. The exception to this of course, is music, which has the unique ability to transcend the narrow pathway and access points of money, education, or social connections. Music has become a monument of the working-class structure by pushing new genres into the global consciousness that will outlive us all. We can see evidence of this around the world, not just in the Caribbean.

The objective of this project is to explore how creativity can be nurtured in Caribbean culture to empower Caribbean nationals to move towards a new mirror image – one that supports our cultural identity, imagination and innovation. Being West Indian myself, I understand the delicate nature of our ‘same but different’ existence and fully respect that I cannot apply a singular approach to all the Caribbean islands. This study therefore directs its lens to Barbados as a starting point to inspire further critical examination and exploration across the West Indies. This research tackles the education system on the premise that it is impossible to have a generation of creative innovators fueling the economy if the education system doesn’t produce creative thinkers.

# Literature Review

“There’s no such thing as neutral education. Education either functions as an instrument to bring about conformity or freedom”.

– *Paulo Freire, Pedagogy of the Oppressed*

Education and economics are deeply connected. The school environment is where we train and prepare people to be a part of the workforce, and therefore I maintain that the future of our economy begins in the classroom. Barbados is known globally for its high standard of education and boasts a literacy rate of over 98% providing state-owned and run education at primary and secondary school levels. In 2016 The World Economic Forum ranked the school system 9th in the world in its *Global Competitiveness Report*. For a population just shy of 300,000 people, with only 54 years independence this can surely be considered an accomplishment. Success though is not a static thing and success requires context. In the Caribbean, we speak often of the ‘brain drain’ which the Inter-American Development bank questions as a possible “curse of small states” and reports that “small states had a brain drain rate five times that of all developing countries, twelve times that of high-income countries, and eight times the world average. In the Caribbean, a region dominated by small states, the percent of tertiary-educated that emigrate ranks among the highest in the world.” (IDB, 2016)

The brain drain in Barbados occurs because the economy is largely dependent on tourism and low-skill labour for the limited exports the country produces. With a relatively undiversified economic base, there is less demand or opportunity for skilled labour and higher educated persons to fully utilize their capabilities. These factors mean that the government pumps millions of dollars into the education system annually but much of that investment leaks right back out of the country. Not only does this impact local businesses trying to attract top talent, but it also thwarts the nation’s growth towards the competitive edge in a rapidly globalized future. Barbados cannot continue to thrive on this outdated education model and with this in mind, I think it’s important to understand how the country got to this point for clarity on where it should go next.



## A History of Exclusion

The Caribbean education system is deeply rooted in colonial practices where education began exclusively for planter class children. Boys of the elite planter class were encouraged to pursue education, whereas girls were directed more towards domestic studies. “Prior to independence, colonial educational systems in the English-speaking Caribbean continued to be elitist and to serve the purpose of reinforcing economic and social hierarchies in Caribbean societies”. (Pilgrim et al., 2018) This perpetuated segregation by keeping working-class people at the bottom of the social ladder preventing upward mobility and allowing only a small number of high-achieving students access to elite gender segregated secondary schools. Post-slavery, education became charity based for poor whites and discouraged for people of colour and further progressed to a present-day system of ability grouping. “Ability grouping typically involves the separation of students into particular groups based on their perceived ability levels. In the case of Barbados, the Common Entrance Examination is used as a tool to stream students into secondary schools at different levels of perceived ability. Then, within those hierarchically based schools, further streaming of students into classes of different ability levels is also typically undertaken.” (Pilgrim & Hornby, 2019)

The Barbados Secondary School Common Entrance Examination (BSSCEE) was implemented in 1959 in an attempt to achieve a more effective quality education which awarded students access to secondary schools based on ability and not on socioeconomic or racial backgrounds. In Barbados, this selective schooling process (leftover from British colonialism), was developed out of a clear need to reduce discrimination to secondary school entrance by the school’s administrative boards. In many ways, this was an act pre-independence from Great Britain, to establish local control and create a more inclusive model than what previously existed.

## The Need for Change in Barbados’ Education System

Despite providing more equal opportunity in sitting the Common Entrance Exam, after more than 60 years the system still reinforces aspects of segregation. This model — ability grouping—has “implications for educational outcomes, the social inclusion of all children, and the provision of an equitable education system.” (Pilgrim et al., 2018) For example, the top four schools in Barbados’ education system produce the nation’s scholars while the majority of prison inmates come from

the eight lowest-ranked schools.

In June 2019, Mia Amor Mottley, the Prime Minister of Barbados, set an initiative to restructure the school system for more inclusivity and equity by abolishing the Secondary School Common Entrance Exam. Speaking at a public meeting she stated "... We have reached the point where we need to reject an approach to education that was settled by the British in the 1940s." (Barbados Today, 2019) The Prime Minister proposed the introduction of middle schools which would give students the chance to uncover their strengths and have more learning options suitable to varying capabilities between the ages of 11-13 before moving on to secondary school. Currently, the school structure mimics the British system where primary school runs from ages 3-11. The Common Entrance Exam is then done at age 11 and then sorts students into secondary school which runs from ages 12-16 (Forms 1-5). The top four secondary schools have a Form 6 (Lower and Upper 6) which runs for another two years until graduation at age 18. Admission into 6th form is also highly competitive as there are only four schools. Alternatives to 6th form remain the local college, polytechnic or directly to university with an additional foundation year added to their program.

For many years in Barbados, there has been criticism of the education model's ability to produce high-level critical thinking despite being considered a leader in Latin America and Caribbean education affairs. Evidence of subpar performance presents itself at a later stage in life when students are exiting the secondary school level and either lack the minimum requirement of four certificates to enter the workforce and further haven't developed soft skills necessary for working with people. Dr Marina Alfonso, a Senior Education Specialist at the IDB assessed research findings and shared "We're seeing that students are not necessarily well prepared to support an economy that is based on knowledge and innovation..." and that based on a 2012 survey, Barbadian employers shared the same complaint as their Latin American counterparts that school leavers lacked necessary soft skills – the ability to work with other people, the ability to lead, to think critically..." (Barbados Today, 2016). This has always been seen as a sticking point to societal growth in Barbados because as a small-island state primarily dependent on tourism for economic growth, these are obvious disadvantages to allow to continue festering for the sake of the economy.

Caribbean nations experience restrictions on economic growth due to export transport costs on goods and therefore have begun looking to the creative economy to leverage the sustainable talents of its people. Creativity in the Caribbean has untapped potential to transform the economy since it's "based on talent and creativity, which are not only renewable but are the source of innovation and new content." However, there are limitations to growth that are rooted in the education and training on how to effectively capitalize on creative talent and "these deficiencies adversely impact the skills set, knowledge, and knowledge pool in the sector." (Hendrickson et al., 2012)

Regardless of the lens used to explain creativity, its importance is recognized on a global scale with respect to economic, political and educational landscapes. In the Caribbean (and Barbados) creativity is ingrained in daily life; with limited resources, resourcefulness is born. Social perspectives on creativity tend to be limited to creative disciplines like art or music and these, unfortunately, aren't high on economic return. There is limited opportunity for creative persons to fully capitalize on their creative outputs despite passionately wanting to capitalize their ideas – there is a lack of knowledge how to do this because it's not included in the standardized high-stakes exam-based curriculum.

## Classroom Approach to Creativity

The study *A Comparison of Barbadian and Grenadian Teacher's Beliefs About Creativity* revealed that most teachers think of arts-based subjects to be more connected to creativity than science-based subjects despite research studies showing that neurologically, there are no differences in brain and cognitive responses here. This is clearly connected to the cultural identity of creativity; a perspective in need of shifting. The study recognized there is a "creativity gap" between what is valued and what is actually practised and that teachers perpetuate this when they appreciate creativity, but do not alter practices to include creative learning. Results from this study revealed that while teachers felt they were creative and understood the need for creativity, they were not optimistic or convinced about their own "strength in creative problem-solving" and "teaching creative thinking". (Jackman & Young, 2017) The disconnect between the desires of students to utilize their creativity (or even recognize they are creative) and the ability and confidence of the teachers to facilitate this process is apparent.

This begs the question, 'what is needed to teach creative thinking in the classroom?' Looking abroad, a study *Creative Thinking in the Classroom* found that teaching in a way that encourages, and rewards creativity can improve school performance. The study revealed that to a large extent, creativity is not just a matter of thinking in a certain way, but rather it is an attitude towards life. "In teaching students to process information creatively, we encourage them to create, invent, discover, explore, imagine and suppose." (Sternberg, 2003) and that part of adopting this creative attitude is to make decisions which underlie creative thinking. They identified 12 key elements that make up this attitude: (1) redefine problems (2) analyze your own ideas (3) sell your ideas (4) knowledge is a double-edged sword (5) surmount obstacles (6) take sensible risks (7) willingness to grow (8) believe in yourself (9) tolerance of ambiguity (10) find what you love to do and do it (11) allowing time (12) allowing mistakes. (Sternberg, 2003).

Another study *Fostering Problem Solving & Creative Thinking in the Classroom* was conducted over one year with the aim of uncovering the type of learning environment that promotes creative thinking and problem-solving skills in students. The study revealed that "the classroom climates that promoted creative thinking and problem-solving were: open, comfortable, relaxed, challenging, safe, supportive, trusting, humorous, energized and collaborative." (Hamza & Griffith, 2006) The researchers also observed the need for teachers to challenge the imagination and encourage innovation. "Challenge their learning through experimentation, novelty, and originality – not through their abilities to memorize. Help students to progress gradually from being memorization-dependent to become independent thinkers and problem solvers." (Hamza & Griffith, 2006)

These studies provide a preliminary understanding of the requirements to teach creative thinking in the classroom but refocusing on the Caribbean, this area remains to be explored. As the government of Barbados prepares to restructure the school system to a model more reflective of inclusion for all students regardless of social background and academic ability, support tools are needed to facilitate this change by unearthing the value of creative thinking in the classroom setting as an alternative to the rigid high-stakes curriculum founded on a 'banking model' of education that no longer fully serves its society. In his seminal work *Pedagogy of the Oppressed*, Paulo Freire speaks of removing this banking model in favour of more democratic problem-posing-education as the banking concept of education is an instrument of oppression whereas, the problem-posing concept of education is an instrument for liberation. The result of the latter being the awakening of

critical consciousness. “The awakening of critical consciousness leads the way to the expression of social discontents precisely because these discontents are real components of an oppressive situation”.<sup>3</sup>

## Defining Terms and Context

**Creative Thinking** – Although there are many opinions and cultural perceptions on what creativity is, the approach for this project was to clearly define “creativity” and “creative thinking” with respect to the previously mentioned study conducted in the Caribbean by Jackman and Young. Creativity is defined as a “novel product, idea, or problem solution that is of value to the individual and/or the larger social group” (Hennessey & Amabile, 2010). Creative thinking is therefore the process used to generate appropriate and new ideas to solve problems. With this definition, I surveyed the curriculum of the 11-13 age group to find an entry point into the school system and found the Visual Arts curriculum listed “creative thinking” as one of its curriculum objectives. This reflected the misperception revealed in the previously mentioned study, that creativity necessarily equates to applied arts.

It is important to understand the teaching structure in Barbados, which could contribute to failing to meet the curriculum objective of “creative thinking”. Primary school teachers are predominantly “class teachers” responsible for teaching a single class all of its subjects, for the exception of more specialized subjects like music or physical education. Secondary school teachers are subject-specific, responsible for a cross-section of age groups but a focused subject matter. This means that often in the primary schools, visual art is being taught by someone not particularly skilled or trained in the arts and I suspect that this contributes to the lack of confidence in teaching creative thinking comes into play. This often results in art activities that have preset outcomes and don’t necessarily challenge the student’s thinking. Visual Arts isn’t included in teacher training in Barbados, but it is very much expected on the job.

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3 Francisco Weffort, in the preface to Paulo Freire, *Educando como Pratica da Liberdade*, Rio de Janeiro, (Freire, 2000)

**Inclusive Design** is defined by the Inclusive Design Research Center (IDRC) as “design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference”.<sup>4</sup> It is helpful to distinguish inclusive design from similar concepts such as accessibility and universal design. “Accessibility is defined as (1) the qualities that make an experience open to all (2) a professional discipline aimed at achieving No. 1. An important distinction is that accessibility is an attribute, while inclusive design is a method. While practising inclusive design should make a product more accessible, it’s not a process for meeting all accessibility standards.” (Holmes, 2018) Universal design is “the design of an environment so that it might be accessed and used in the widest possible range of situations without the need for adaptation...and the principles of universal design are focused on attributes of the end result, such as “simple and intuitive to use” and “perceptible information.” (Holmes, 2018)

The inclusive design methodology was born out of digital environments and as a result, many inclusive design projects to date are centered around digital accessibility but as the discipline continues to expand so does the spectrum of work that inclusive methodologies are applied to. The nature of this study finds this work situated further along the spectrum and is focused on implementing practical methodologies that can stimulate more accessible curriculum in context to the existing Caribbean education model that perpetuates systemic segregation.

**Decolonization** – This study is built upon Paulo Freire’s theory of critical pedagogy detailed in *Pedagogy of the Oppressed* which aims to awaken critical consciousness. The goal of critical consciousness is the ability to identify, critique, and challenge the social forces and structures that produce or perpetuate the inequity and oppression you may find yourself experiencing or witnessing. It is concerned with the mind as the key for changing circumstances and thus is a suitable theory for this study considering the identified need for creative thinking in Caribbean education. It is not without consideration however, that I recognize critical consciousness does not fully address the likes of decolonial theorists. As detailed in *Decolonization is Not a Metaphor*,

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4 The IDRC is a research and development centre at OCAD University where an international community of open source developers, designers, researchers, advocates, and volunteers work together to ensure that emerging information technology and practices are designed inclusively. (IDRC, 2020)

“Colonialism is marked by its specializations. In North America and other settings, settler sovereignty imposes sexuality, legality, raciality, language, religion and property in specific ways. Decolonization likewise must be thought through in these particularities.” (Tuck & Yang, 2012) Much of decolonization work is concerned with the repatriation of Indigenous land and life and questions the role of critical consciousness as a possible distraction for the real decolonization work that needs to be done.

With full respect to Indigeneity, I want to point out the differences that arise in the Caribbean. As a region where most Indigenous peoples<sup>5</sup> were eradicated as a consequence of colonialism, the landscape somewhat changes the prospect of Indigenous repatriation. While being a melting pot, the vast majority of modern-day Caribbean people are of African ancestry (or African and European ancestry). The sordid reality of being a descendant of enslaved Africans is that the connection to ancestral land and identity has been lost – ruptured in the middle passage. Therefore, whereas Indigenous futures are often concerned with the revival of past life, Afrofuturism is about creating the future. It is here that I focus the efforts of this research, to consider the future that critical consciousness can awaken amongst Caribbean peoples, and as an act of decolonization, decide for themselves how to apply the creative thinking in this study towards changing the learning structure of the current education system.

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5 The Taino and Kalinago were the Indigenous people of the Caribbean. Taino people (an Arawak subgroup) were eradicated as a result of European colonialism and settlement. Approximately 3000 Kalinago people still inhabit the island of Dominica on the Kalinago territory. (Kalinago Territory, 2020)

# *The Study*



# Methods

## Research Design

This study asks the question: How can we enable teachers to teach creative problem-solving in the classroom?

The purpose of this study was to prototype and evaluate a toolkit to facilitate educators in teaching creative problem-solving exercises in Barbados classrooms. This research explores a way to equip teachers to foster creativity in students by building upon the existing visual arts curriculum with the intention of empowering teachers to have the confidence to teach creative thinking skills. This study used a mixed-methods design where qualitative and quantitative data were collected by way of questionnaires and a research workshop.

## Ethics

This study was reviewed and approved by the Research Ethics Board (REB) at OCAD University. Prior to submitting REB for approval, a feasibility check was done by email with a school in Barbados. No participants were recruited at this stage and communication was limited to the school office to determine if the school would allow recruitment of their faculty.

## Recruitment

Considering that the 11-13 age group are the students most vulnerable to educational changes which the government of Barbados proposes, a combination of primary and secondary school teachers was needed. A private school in Barbados was selected for this workshop because they have both primary and secondary schools together which provided more flexibility in teacher recruitment and coordination for the workshop. Once REB approval was given, the school was contacted by email (see Appendix A) to participate in this study and a recruitment poster was sent out to the teachers (see Appendix B). Eight teachers responded which exceeded initial expectation and an amendment

was submitted to the REB to include a support facilitator for the workshop.

Each participant taught either visual arts, the 11-13 age group or both to ensure a cross-section of teaching experience within the workshop. All participants completed an informed consent form (see Appendix C) prior to the workshop commencing and were given the opportunity to ask questions before submitting their consent.

## Questionnaire

A two-part questionnaire was designed to measure the efficacy of the workshop. The first part was administered to the participants at the start of the workshop which focused on capturing their confidence level teaching creative thinking as well as their belief and thoughts on what creativity is. At the end of the workshop, the second part of the questionnaire was administered which captured their response to the activities in the study, and their perception of confidence in teaching creative thinking moving forward (see Appendix E).

## Prototype

A prototype was designed and evaluated in the workshop to leverage the teachers' participation. A framework, teaching methodology, and subject were implemented into the prototype.

## FRAMEWORK

A design thinking framework was used to build out the curriculum (see Appendix D). Design Thinking is described as “a non-linear, iterative process which seeks to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test.” (Interactive Design Foundation) This approach often allows people who are not in creative disciplines (such as the participants of this study) to use creative tools to solve problems. There are five stages of design thinking (1) empathize (2) define (3) ideate (4) prototype (5) evaluate. The stages of this framework offered an opportunity to incorporate an art activity beyond the typical approach of art lessons in Barbados. Since this framework is by nature a human-centered approach to creativity, this aligned with the need to merge art education and socio-economic matters.

## LEARNING-BY-DOING

Learning-by-doing means “learning from experiences resulting directly from one’s own actions, as contrasted with learning from watching others perform, reading other’s instructions or descriptions, or listening to others’ instructions or lectures.” (Reese, 2011) A “learning-by-doing” approach to stage 1 (empathize), stage 3 (ideate), stage 4 (prototype) was applied. Stage 2 (defining the problem space) was predetermined and framed into a project case study. Stage 5 (evaluation) was not used in this workshop.

## SUBJECT

In order to anchor this framework into the culture as an example of connecting arts to society, a cultural object was selected, and the five-stage framework was designed around it. The object of the workshop was the Bajan Snow Cone vendor and the workshop was broken into three activities. The participants worked in two groups of four.

- **Activity 1** – empathy-building promoted the participants to explore an empathy map and a customer-user experience for the snow cone vendor. Following this, a different case study problem surrounding the snow cone vendor was presented to each group.
- **Activity 2** – ideating and prototyping were combined, and the participants worked in their groups to generate ideas to solve the problem their snow cone vendor was experiencing.
- **Activity 3** – here the participants deconstructed what they learned and restructured how they would introduce these creative problem-solving methods to their classroom and other teachers. This prompted them to consider the immediate use of this framework in their classroom teaching. (see Appendix D).

## Data Analysis

The collected data was systematically organized into concepts and emerging themes following grounded theory coding procedure (Strauss and Corbin 1990). Open coding was used to reveal the key concepts from the workshop discussion with the participants.

The categories were organized similar to the questionnaire by revealing the participants perspective before the workshop activities and after. These participants perspectives and themes were tracked in Appendix F. These results informed the components needed for the prototype.



**FIGURE 1** – SNOW CONE VENDOR AT THE GARRISON SAVANNAH IN BARBADOS

# Results

## Questionnaire

Eight teacher participants were surveyed and answered all questions in both the pre and post workshop questionnaires. (see Appendix E) Their responses were organized into three sections:

1. understanding where the teachers were at before the activities
2. the activities they found most impactful
3. what resonated with the teachers most after the activities?

### 1. WHERE THE TEACHERS ARE AT (BEFORE ACTIVITIES)

Participants were asked to define creativity, to define what a creative person is and whether or not they believed they were a creative person. They were also asked to define creative thinking and whether or not they felt confident in teaching creative thinking skills.

#### 1.1 On Creativity

While each response to defining creativity was expressed individually, the general consensus was that creativity involved having the ability to express oneself, to think and solve problems. For instance, participant 1 defined creativity as “the ability to use your imagination to problem solve or express an emotion or a concept” while participant 2 said, “creativity is the ability to approach a problem/activity with many different perspectives, not knowing in advance what is right or wrong, and being able to solve the problem by bringing multiple dimensions to it”. (see appendix F, p.75)

#### 1.2 On a Creative Person

When defining what a creative person was, the responses aligned with the perception of creativity by illustrating a person’s ability to innovate or think outside of the box. Participant 2 stated that “a creative person uses anything (information or stimulus) to make something new or to enhance a particular concept using prior knowledge/experience”. Participant 4’s definition deviated slightly here by defining a creative person as “one with a flair for colours, visual expressions, precision and fun”. (see appendix F, p.75)



### **1.3 On Considering Themselves to be Creative**

Additionally, seven of the participants considered themselves to be creative and only one participant was on the fence about calling themselves creative and explained that they had the ability to be creative but was inconsistent.

### **1.4 On Creative Thinking**

The overall responses to defining creative thinking identified some connection to problem solving and thinking up ideas beyond the traditional expectations. Here are some examples: Participant 2 said “creative thinking allows an individual to think ‘outside the box’. Critical thinking skills are enhanced through the method” and participant 6 said “creative thinking is being able to use a variety of approaches to problem-solve or create a vision. It employs skills from all subject areas and multiple intelligences”. Participant 8 said, “creative thinking is about being able to make connections, apply emotional intelligence, be reflective about your own mental models and question generally; all of which engages problem-solving”. (see appendix F, p.77)

### **1.5 On Confidence Teaching Creative Thinking**

Prior to engaging in the workshop activities, four of the participants felt confident in teaching creative thinking, two participants (participant 4 and 6) did not feel confident teaching creative thinking and two teachers (participant 1 and 3) were uncertain of their ability to teach creative thinking expressing they felt somewhat capable but believed that they needed more practice or resources to build their confidence and become more effective. Participant 3 explained “I am more confident fostering creative thinking in students who already have some – even just a little. I find it very difficult to improve creative thinking in students who are challenged in the area”. (see appendix F, p.77)

### **1.6 On Everyone’s Capacity to be Creative**

When asked if they believed that everyone has the capacity to be creative, six of the participants replied yes, and two participants replied maybe and expressed that they felt some people had more natural ability to be creative, whereas some people needed more assistance and teaching to develop the skills. For instance, participant 5 said that it “depends on what creativity means and what they are being creative about, for example, the visual arts – not everyone has the ability to be creative in that field/area if they are not ‘visual’ or understand certain abstract concepts as they relate to the visual arts”. (see appendix F, p.77)

## 2. THE WORKSHOP ACTIVITIES THAT WERE MOST IMPACTFUL

The opportunity to reflect on the workshop lessons and activities were presented here and the participants responded to the four components. They were allowed to select more than one option in this section to indicate the most impactful and valuable activity.

- 3 participants found the lesson on Human Centered Design to be most impactful.
- 6 participants found that activity 1 (empathy building) was the most impactful
- 5 participants found that activity 2 (ideate & prototype) was most impactful.
- None of the participants selected activity 3 (deconstruct & reconstruct) as most impactful or valuable.

Empathy building was overwhelmingly the most impactful activity to which the teachers commented on its value. Participant 2 said about activity 1 (empathy building) “this was the most interesting part for me as I was able to explore the empathy map with the snow cone vendor and his feelings at my level of the process”. Participant 4 shared “activity 1 allowed me to get in touch with the character – it gave me an understanding of the character and helped me to visualize the person’s way of thinking”. Participant 5 said about activity 1 “from this activity, other lessons/approaches can emerge. It gives a very deep insight into the characters/culture/situation which is crucial in understanding and solving or creating”. (see appendix F, p.82)

## 3. WHAT RESONATED THE MOST WITH TEACHERS (AFTER ACTIVITIES)

The participants were surveyed to understand which activity was the most immediately useful in their classroom teaching. They were also asked if they felt they could recommend these creative problem-solving methods and based on what they learned from the activities if they felt confident teaching these creative thinking methods.

### 3.1 On the Most Readily Usable Activity

The response showed that six participants felt that activity 1 (empathy building) was readily useful for their existing classroom sessions. One participant opted for activity 2 (ideate & prototype) and one participant responded that both activity 1 and 2 were most immediately useful for their classroom sessions. (see appendix F, p.85)

### **3.2 On the Most Usable Activity for Visual Arts Lessons**

Upon reflection, four participants felt that within an art class they would immediately use activity 2 (ideate & prototype), two participants opted for activity 1 (empathy-building), one participant felt all of the activities were usable. The final participant noted they were unsure, and it can be noted that this participant met the participation criteria of teaching the 11-13 age group but did not teach visual arts at all and thus felt reluctant to answer specifically to visual art classes. (see appendix F, p.85)

### **3.3 On Their Confidence Teaching Creative Thinking**

The response showed that seven of the participants felt they could implement the methods they learned into their class teaching and existing curriculum, and the same seven participants now reported feeling confident in teaching creative thinking. Only one teacher said they could not implement these methods into their class and also said no to feeling confident teaching creative thinking. This was participant 5 who also said no to feeling confident teaching creative thinking at the beginning of the workshop, but expressed that while they understood the concepts and methods taught in the workshop, they still lacked confidence because they felt they needed more practice with these new methods before implementing them with students. Other participants who answered yes to feeling confident teaching these methods, did also note they would still like additional sessions to become more familiar with the material. (see appendix F, p.87)

### **3.4 On Recommending These Creative Problem-Solving Activities**

All participants said they would recommend the methods taught to them in the workshop to other teachers. (see appendix F, p.87)



## Themes from the Research Workshop

The workshop facilitated two mini discussions before and after the activities and from this dialogue and their responses to the concepts they learned throughout the workshop, themes were identified.

### 1. BEFORE ACTIVITIES

The participants already felt a need for change in teaching methods as they regularly face many challenges with students and resources. They were open to learning something new with regards to creative thinking but held a lot of apprehension with the current school system and the limitations it places on them, as these limitations were seen as not conducive to what they considered necessary to fostering creativity in the classroom.

#### 1.1 Motivation

The general motivation to attend this workshop was a recognition that they had existing challenges teaching creative confidence and that there was an overall shift in the student body's information intake and that a new approach was needed to present content to students because the general system was outdated. The participants were interested to discover a possible new approach they could try out in their classrooms. For example, participant 8 mentioned that with some subjects, students are exposed to overlapping content over the years and aren't always meeting new information. "So, they feel like "ooh we're doing this again", an interest in finding more creative ways to deliver the content was this teacher's motivation to attend the workshop. (see appendix F, p.76)

#### 1.2. Pressure

The teachers feel immense pressure to meet the requirements set out for them by Caribbean Examination Council (CXC) the governing body of educational development in the Caribbean. They feel strongly that there are too many subjects which make the students become stressed and there are also too many deadlines. Additionally, with a heavy workload, it becomes hard to balance content delivery with the timing of syllabus requirements because of the nature of high-stakes exam culture. Participant 5 said "What I do not understand about CXC is that they come up with all these objectives that are supposed to help us, even though they aren't the ones doing it. Yet they have all these

SBA<sup>6</sup>...children are bogged down.... if you're doing 7 or 8 or 9 subjects they're stressed out!". This teacher further expressed "We've voiced that as teachers and of course they ignore us. So, they're saying they want this...but we don't have the resources and we don't have the time. The children are stressed with all of this work and marks...and we've got deadlines...this, this, this and this! So, you're not only teaching skills, you're teaching to a deadline". (see appendix F, p.78)

### 1.3 Perception

There was a belief that a relaxed environment was needed for creativity to thrive and the culture of education in Barbados was so heavily marks driven that it didn't help nurture this creativity. Participant 1 said "What is it we really want from the students? Because my experience is when you want creativity to flow you want people to be relaxed. I am most creative when I'm not pressured, but it's hard to remove that pressure when they need marks for the curriculum". The teachers felt that the current teaching model does not work for creativity and that the Caribbean has a very traditional mindset, and this presents a major challenge to changing the current system. Participant 4 expressed "I actually think that you cannot teach the same way and try to be creative. It has to be a whole change! And I think once you are comfortable within that new shape then things can be implemented more smoothly. Within this new shape, it will happen seamlessly.... but it's because our mindset is still so traditional, we will have a challenge". (see appendix F, p.78)

### 1.4 Time

Teachers are constrained by a lack of resources and they do not feel seen or heard by the authorities whose objectives are too demanding. They find that they are constantly working to deadlines and there's lack of flexibility in the requirements CXC sets for them to meet in the syllabus. Trying new things takes away from the limited time they have to hit the markers to prepare students for their exams. Participant 5 shared "I have to teach a program that is driven by "you have to do this...you have to do that" ... and it does not allow me to teach it in a slightly different way because then I cannot fulfil the requirements of the syllabus because I've got this deadline and that deadline. I've tried one or two things, but it has taken away from time." And participant 8 echoed "it takes me half the class

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6 The SBA (School Based Assessment) is a set of tasks/assignments/projects conducted in the school; carried out by the student following guidelines provided by CXC and assessed by the teacher using criteria provided by CXC. The SBA score contributes to the candidate's overall examination grade. (CXC, 2020)

or even the entire class to get them involved and help them to understand and find examples and connect them to that [topic] before we even get into what the rest of the content looks like before we can even begin to annotate before we can even deconstruct text for them to be able to create something that they can write and take the information behind". (see appendix F, p.78)

## 1.5 Evaluation

There are high expectations held by the government which continues to perpetuate the marks driven culture that constrains the growth of students and flexibility of the teachers. Due to this marks driven culture, even parents have high expectations, and this creates no middle ground for experimentation. Participant 1 noted that "in education, it's still the authorities have designed something and then you're given it and you need to execute it properly because those marks are very important. We're still very much afraid to experiment." and participant 8 shared "I do think we are heavily marks driven and I do think that parents and teachers and children...all of us need to question the mental model about that. How much scaffolding do we do? How much of it that is behind the scenes is going to make the child successful from simple use of executive function skills". Participant 6 said "the whole education system we have is it's either right or wrong. There's no middle of the road". (see appendix F, p.78)

## 2. AFTER ACTIVITIES

The participants shifted their focus to the activities and how they could implement the methodologies they learned. Empathy building was the tool they connected with the most, and this prompted them to explore alternatives for evaluation as this was an area in need of change in order to nurture a more creative environment. Additionally, the need for collaboration amongst the participants is an area for future growth.

### 2.1 Empathy

Participants found that the empathy building exercise allowed for a mindset shift to occur. They liked that it encouraged engaging in your environment and exploring scenarios to problem solve. Additionally, it was positive that the exercise required you to embody another person or situation, express your point of view and encouraged asking questions to switch your thinking. Participant 8 mentioned, "I think that process of empathy helps a lot...even if you don't have all the specialty

knowledge, it helps to create a shift". (see appendix F, p.80)

## 2.2 Evaluation

Self-evaluation or peer review is an alternative to the marks driven culture. Encouraging work where there is no set right or wrong answer reduces expectations and allows building imagination and creates more options for students to explore work where they can express themselves more. For example, participant 4 explained, "I liked the part about no wrong answers because I find with my Form 1's...after all this common entrance preparation, it's really hard for them to believe that two different answers can both be right, because that's not what they've been prepped for.... so, something like this that teaches them that there are many right answers, it's a really good way to start shifting that". Participant 3 remarked positively in the option to "encourage students to think of new ideas to bring to a task or topic...so encourage students to be freer in [their] expression... to understand there are many solutions, and that no answer is wrong...it may just be more or less applicable". (see appendix F, p.80)

## 2.3 Objective

A change in approach to the classroom objective is possible where teachers can flip the script and think from the perspective of the learner and build content materials from that angle. Speaking for the second group of teachers participant 8 explained "we were thinking about to kind of flip the script a little bit and have the teacher think about what would it be like to be the learner...and so to see the objective from not what I have to deliver but what I have to learn....and from that perspective to then reflect a bit about the students perspective on what they might be getting...so we were thinking about the level they're at to so we begin to create something that is visible to them". (see appendix F, p.82)

## 2.4 Support

Collaboration and community are needed to succeed. Teaching can be an isolating job when you are alone in the classroom all day and in some departments, you may be the only teacher of your subject. Opportunity to share ideas and get feedback is critical. As explained by participant 6 "One of the problems is we don't have enough people in the departments to brainstorm with. If you're having to teach a class, you're brainstorming with yourself. And that doesn't help!" (see appendix F, p.85)

## Key Insights

There are a few key things that came out of the discussion and themes in this workshop which I think should be noted.

**1. Work Within Constraints** – the most noticeable shift pre and post-workshop was the focus on external pressures. Prior to engaging the activities, there was a lot of dialogue and concern about the constraints placed on them. After the activities the teachers were less focused on the external pressures placed on them and began to explore ways, they could fit existing requirements within this model. This is to say, the confidence seemed to come from working within constraints, not by removing constraints entirely.

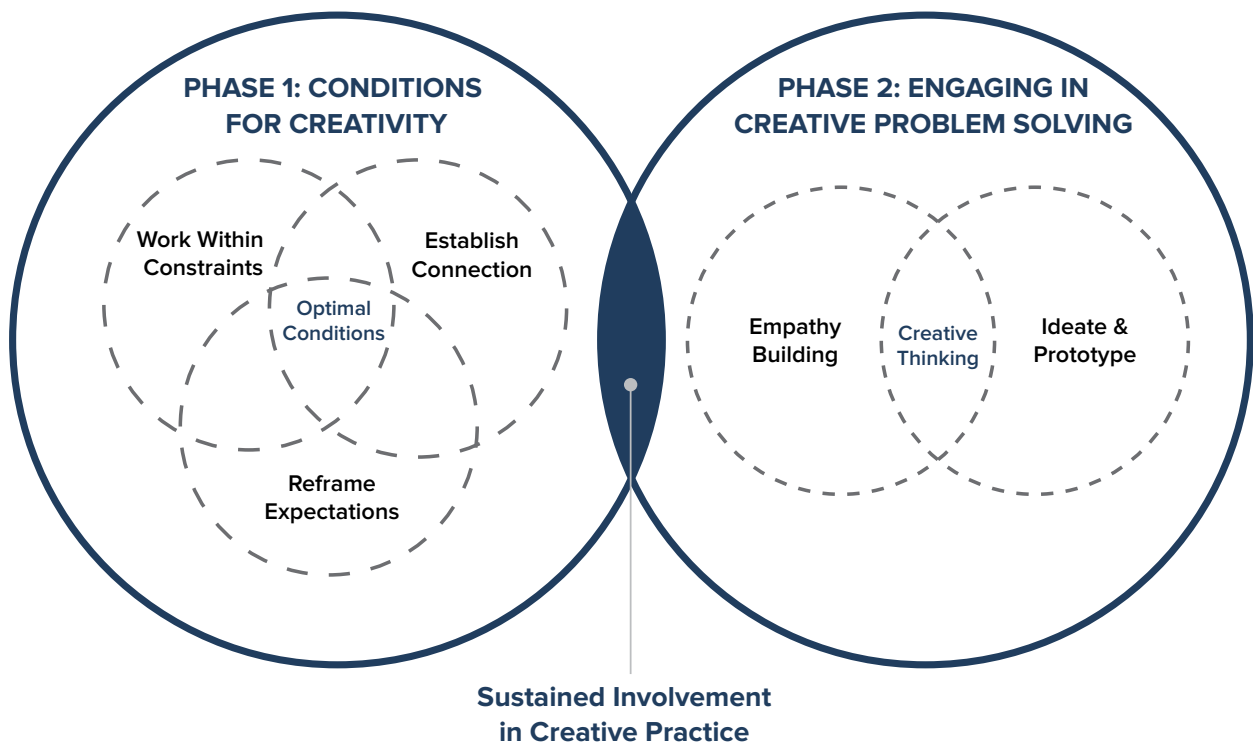
**2. Establish Connection** – the most impactful activity which the teachers also found easiest to implement into their class sessions was empathy-building. Their remarks revealed that empathy building brought about a sense of connection, both with characters and the environment as well as with their own students. It also was the catalyst for connecting to the other steps of the framework. It prompted the teachers to consider their approach from another perspective – the students.

**3. Reframe Expectations** – it resonated with the teachers the reframing of evaluation metrics in teaching creative thinking. Specifically, the notion of there being no wrong answer, and exploring different ways of assessing outcomes seemed much more possible with this framework and these activities than in the traditional curriculum. Prior to workshop activities, the dialogue allowed no alternative for grades, but afterwards, they were considering possibilities.

The significance of working within constraints is in considering the factors of decolonization and working in a postcolonial society. It is incredibly difficult to completely dismantle existing global socio-political structures that are so deeply ingrained in us, but it is possible to be critically aware of those structures and work consistently to push against their borders and move them further outwards until a new paradigm has been created. Connection is multifaceted as it also presented itself in the need for support and collaboration amongst the teachers and cannot be ignored as a catalyst to developing empathy and strengthening skillsets amongst students in a classroom setting. Where this

makes a mark is the benefit of decolonial work to be grounded in solidarity. Strengthening the power base of society can increase resiliency and cultural identity. Reframing expectations extends beyond evaluation or grades. This allows certain freedoms rarely experienced in colonized communities. The freedom to be in control, to explore, to initiate ideas, develops a different attitude amongst people.

These key insights and most impactful activities from the workshop informed a model for teaching creative thinking in the classroom.



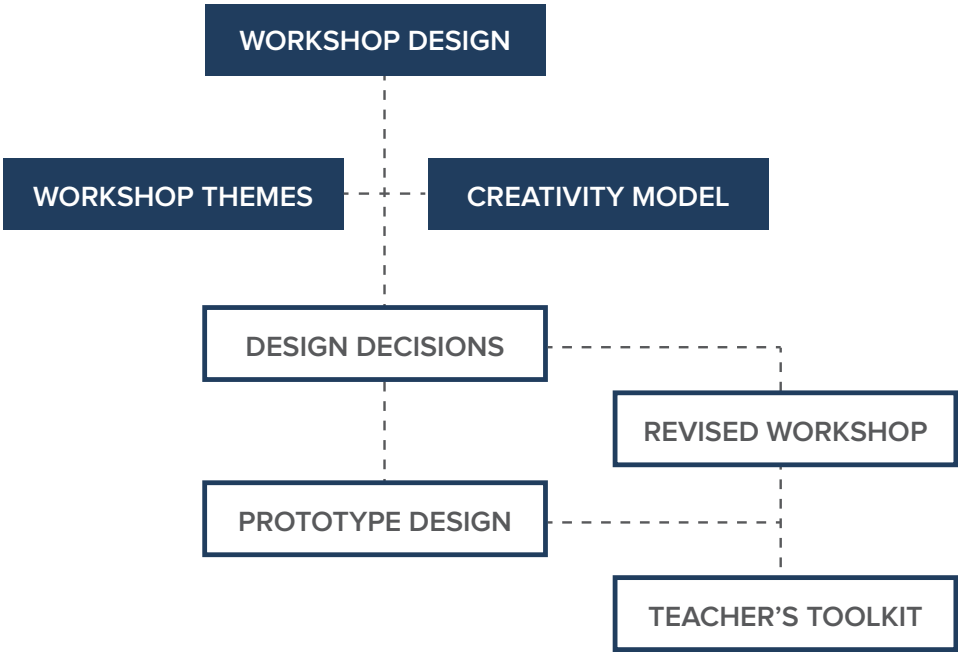
**FIGURE 2** – A MODEL OF HOW TO TEACH CREATIVE THINKING IN CLASSROOMS

# *The Design*

# Design Process

The design solutions were informed by the feedback to the workshop and the model illustrating how to teach creative thinking in classrooms (figure 2). Together these informed the next iteration of the workshop design and the teacher’s toolkit. Overall the workshop needs to be extended to allow more time for discussion and the flexibility to go in-depth in the activities. The workshop should be a minimum of 4 hours in order to facilitate this approach. Additionally, there needs to be an opportunity to debrief (or quickly discuss) after each activity to capture more specific and isolated feedback to each stage of the workshop. Given the feedback captured in the questionnaires, the participants need an opportunity to take away the materials and practice these activities in their classroom to get more familiar with the material. Therefore, the prototype designed is intended to be multi-functional and allow the toolkit to be used in the workshop as well as independently by teachers.

The design process carried out is shown in two sections: design decisions and the prototype design.



**FIGURE 3** – THE STEPS OF THE DESIGN PROCESS



# Design Decisions

FIGURE 4 – THE DESIGN DECISIONS MADE IN PROTOTYPE DEVELOPMENT

WORKSHOP ACTIVITY	ITERATION 1	DESIGN DECISION	ITERATION 2	ADDITIONL RESOURCE
Pre-Workshop Questionnaire	<p><b>Total Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>• Capture teacher perspectives on creative thinking before the workshop activities.</li> </ul>	<b>KEEP</b>	<p><b>Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>• This is a reflective tool for participants and helps measure workshop efficacy</li> </ul>	<b>Appendix E</b>
Introduction	<p><b>Time: 15 minutes</b></p> <ul style="list-style-type: none"> <li>• Overview of project purpose and workshop agenda</li> <li>• Researcher and participant introductions</li> </ul>	<b>KEEP</b>	<p><b>Time: 15 minutes</b></p> <ul style="list-style-type: none"> <li>• No changes to introduction necessary</li> </ul>	<b>Appendix D</b>
Discussion	<p><b>Time: 15 minutes</b></p> <ul style="list-style-type: none"> <li>• Open dialogue on perspectives teaching creativity and creative thinking</li> <li>• Explore participants challenges and experience with education system</li> </ul>	<b>KEEP</b>	<p><b>Time: 15 minutes</b></p> <ul style="list-style-type: none"> <li>• No changes to discussion format necessary</li> </ul>	<b>N/A</b>
Lesson: Human Centered Problem Solving	<p><b>Time: 15 minutes</b></p> <ul style="list-style-type: none"> <li>• Lesson on creative problem solving through human centered approach.</li> <li>• 5 stages of creative problem solving and provide examples.</li> <li>• Select which stages the workshop will focus on</li> <li>• Pick a cultural object (eg: snow cone vendor)</li> </ul>	<b>MODIFY</b>	<p><b>Time: 30 minutes</b></p> <ul style="list-style-type: none"> <li>• No changes to content necessary</li> <li>• Time needs to be extended to allow more time to explore in-depth examples</li> <li>• Survey feedback on workshop activities and improvements to be made</li> </ul>	<b>Toolkit Manual</b>
ACTIVITY 1: Empathy Building	<p><b>Time: 20 minutes</b></p> <ul style="list-style-type: none"> <li>• Activity 1 – Fill out the empathy map based on the snow cone video</li> <li>• Activity 2 – Follow up by completing the customer journey map</li> </ul>	<b>MODIFY</b>	<p><b>Time: 1 hour</b></p> <ul style="list-style-type: none"> <li>• Activity 1 empathy map – extend to 20 minutes</li> <li>• Activity 2 customer journey map – extend to 20 minutes</li> <li>• Debrief – 20 minutes</li> </ul>	<b>Toolkit Activity Cards</b>
ACTIVITY 2: Ideate & Prototype	<p><b>Time: 30 minutes</b></p> <ul style="list-style-type: none"> <li>• Activity 1 – Brainstorm ideas to solve the case study problem in the resource kit and then cluster ideas to find common themes</li> <li>• Activity 2 – Quickly prototype the solution the group generated</li> </ul>	<b>MODIFY</b>	<p><b>Time: 1 hour</b></p> <ul style="list-style-type: none"> <li>• Activity 1 brainstorm – extend to 15 minutes</li> <li>• Activity 2 prototype – extend to 30 minutes</li> <li>• Debrief – 15 minutes</li> </ul>	<b>Toolkit Activity Cards</b>
Discussion	<p><b>Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>• Q&amp;A to discuss what participants have learned</li> <li>• Clarify any questions and provide additional resources where needed</li> </ul>	<b>MODIFY</b>	<p><b>Time: 30 minutes</b></p> <ul style="list-style-type: none"> <li>• Generate ideas on implementing methods into curriculum</li> <li>• Discuss phase 1 of model: working within constraints, connection, expectations</li> <li>• Explain how to use activity cards in class setting.</li> </ul>	<b>Toolkit Manual</b>
ACTIVITY 3: Deconstruct & Reconstruct	<p><b>Time: 30 minutes</b></p> <ul style="list-style-type: none"> <li>• Construct a lesson plan on how you would use the creative thinking framework for use in the classroom.</li> <li>• Consider how you would share these methods with another teacher</li> </ul>	<b>REMOVE</b>	<ul style="list-style-type: none"> <li>• None of the participants resonated with this activity showing no demand for it.</li> </ul>	<b>N/A</b>
Post-Worshop Questionnaire	<p><b>Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>• Survey feedback on workshop activities and improvements to be made</li> </ul>	<b>KEEP</b>	<p><b>Time: 10 minutes</b></p> <ul style="list-style-type: none"> <li>• This is a reflective tool for participants and helps measure workshop efficacy</li> </ul>	<b>Appendix E</b>

## Prototype Design

The design solution for the teacher's toolkit has two components:

1. A manual for teaching creative thinking
2. Activity cards for classroom implementation

### 1. MANUAL FOR TEACHING CREATIVE THINKING

The purpose of the manual is to facilitate further workshops with a more narrowed focus on activities and content that is most impactful to the teachers.

#### What's Inside the Manual:

- Overview of creative thinking and human centered approach to problem-solving
- 3 step framework for creating the conditions for creativity
- How to activate and engage in creative thinking



**FIGURE 5** – TOOLKIT MANUAL: OVERVIEW OF CREATIVE THINKING

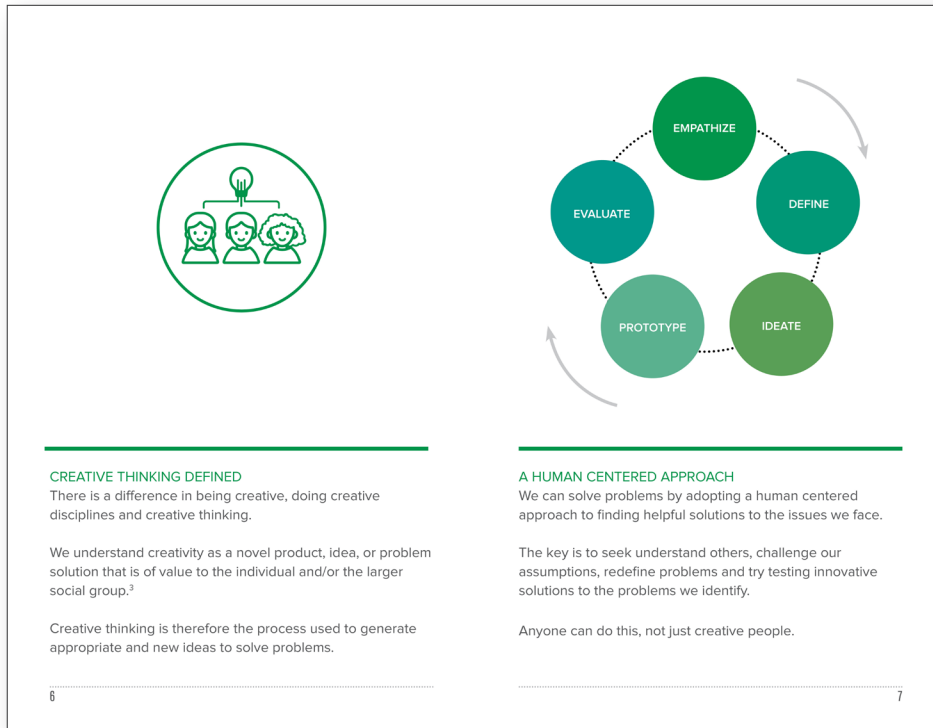


FIGURE 6 – TOOLKIT MANUAL: CREATIVE THINKING AND HUMAN CENTERED APPROACH



FIGURE 7 – TOOLKIT MANUAL: THE CONDITIONS FOR TEACHING CREATIVE THINKING



FIGURE 8 – TOOLKIT MANUAL: HOW TO ENGAGE IN CREATIVE THINKING



FIGURE 9 – TOOLKIT MANUAL: INSTRUCTIONS ON HOW TO USE THE ACTIVITY CARDS

## 2. ACTIVITY CARDS FOR TEACHING CREATIVE THINKING

The purpose of the activity cards is to integrate the workshop methods into classroom settings and engage problem solving with students. The aim is to cultivate imagination building in students.

### How the Cards Work:

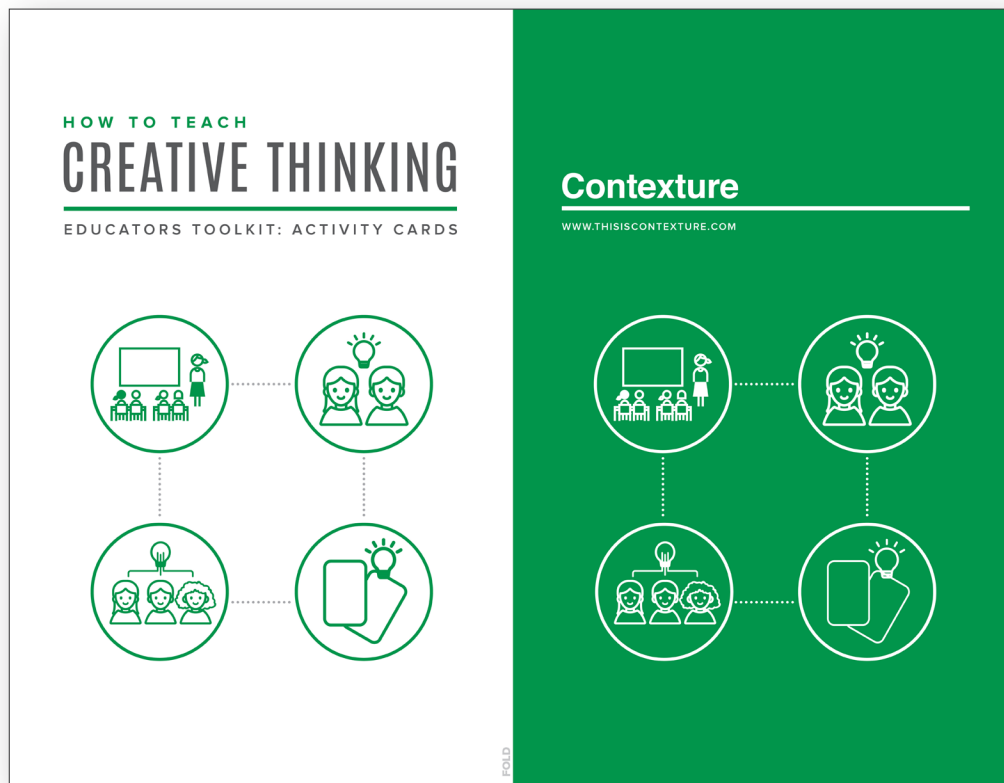
**STEP 1:** Pick one of each type of card to create a narrative

- Pick an archetype (vendor, bus driver, nurse etc)
- Pick an activity (selling snow cones, treating a patient, making a delivery)
- Pick an empathy card (says/thinks/does/feels)
- Pick a challenge card (various human problems: back pain, anxiety, no money)

**STEP 2:** Generate the case study/narrative based on the cards (make it seamless)

**STEP 3:** Ideation – allow students to engage in a group brainstorm and discussion


**STEP 4:** Prototyping – group or individual project that is student-driven; teacher-guided.





**FIGURE 10** – ACTIVITY CARDS PACK FOR THE TEACHER'S TOOLKIT


## ARCHETYPE CARD


Select a character to start building your story. These are samples, you can also choose another character you wish to explore (Example: vendor, nurse, bus driver, teacher, musician).


  
Air Hostess


  
Baker


  
Mechanic


  
Doctor

  
Cashier

  
Banker

  
Barber

  
Chef

  
Detective

## ACTIVITY CARD

Choose an activity to that's aligned your character's profession. Build your story by using the following markers to explain their activity. (Example: the doctor is treating a patient for a cold at the medical clinic in the afternoon, or the doctor is travelling in his car to his office early Monday morning to see his patients)

**STORY MARKERS**

TASK

What is the character doing?  
Why is the character doing it?

TIME

What time of the day is it?  
Is it a specific hour, day, week?

PLACE

Where is the character located  
in accordance to their task? Are  
they stationary or moving to/  
from their task?

FIGURE 11 – ARCHETYPE CARD AND ACTIVITY CARD

## EMPATHY CARD

Walk your chosen character through their activity and record their responses to the emotional states below. You can build your story with one empathy category or all. (Tip: the more empathy you build, the easier it is to solve your character's problem).

 SAYS

---

 THINKS

---

 DOES

---

 FEELS

---

## CHALLENGE CARD

Complete your story by "throwing a wrench" into the path of your character. The "wrench" should contrast or conflict the activity you built into your story. Select from sample categories below to help you construct the problem your character is facing. Then "amplify" the problem by stating the consequences of the issue. Complete your story by asking a question. (Note: you can also think of your own challenge to build your case study).

  
Financial  
(money problems)

  
Construction  
(physical barrier or repairs needed)

  
Health & Wellness  
(broken arm, back pain, headache or the flu)

  
Family  
(sick child or family member)

Example: The doctor is treats patients at the medical clinic in the afternoon, **(throw a wrench)** but he there is an unexpected road closure due to road construction. **(amplify)** if he doesn't find new access for to his office the patients will not be able to reach the clinic. How can he get his patients access to the office?

FIGURE 12 – EMPATHY CARD AND CHALLENGE CARD

The teachers expressed the preference for materials to be usable in both digital and printed formats. Therefore, the activity cards are designed for digital distribution with the ease of downloading to use in printed format. The instructions are presented simplistically and guide the user step by step through building up a character and story. After building a story by using the activity cards for step 1 and 2, the teacher can engage the students in step 3 and complete the exercise or move on to step 4 as the final part.

The prototype of the toolkit manual and activity cards is available for download and user testing at: [www.thisiscontexture.com](http://www.thisiscontexture.com)

# *Future Work*



# Next Steps

The following are some next steps to consider in further design development of the prototype:

## **SMALLER FOCUS GROUPS**

It was extremely advantageous to have a high number of participants in this study but in order to continue finetuning the workshop to maximum impact, more time needs to be allowed for each activity. This can be achieved by working in smaller groups and pairing participants together during the activities.

## **TEACHER-STUDENT CO-DESIGN**

The activity cards need to be tested in a class setting with a teacher and students. One teacher to three students should be sufficient to try out the activity cards by subject to continue the iterative design process.

## **SUBJECT SPECIFIC WORKSHOP**

This workshop can be explored across more subjects in the educational curriculum. For example, a workshop of creative thinking for science teachers, history teachers, or math teachers will yield further data to help develop different versions of the prototype.

# Limitations

This study was conducted at a private school where resources are more accessible than public schools. It would be beneficial to test the workshop prototype with public school teachers to understand further challenges that they may have which may not have been considered or realized within a private school setting.

Furthermore, the scope of this research is limited to Barbados, which serves as an accessible model for other English-speaking Caribbean nations. It is without doubt however, that the French, Spanish and Dutch islands will require significant adaptations to this study to respect their individual histories and existing school systems.

# Conclusion

The goal of this study was to introduce a practical tool to assist teachers in implementing creative thinking methods into classroom sessions. The intention was not to dictate specifically how to use this tool in their curriculum, but instead to give teachers a framework that empowers them to make changes where they feel most capable. And in doing this, begin to shift the perception and attitude towards creativity and visual arts as an optional component of Caribbean education. The study *Creative Thinking in Classrooms* (Sternberg 2003) identifies creativity as a way of life. This is the whole point of *Contexture* – to embody creativity as a way of moving towards more inclusive Caribbean futures.

The Sternberg study introduced the elements that make up a creative attitude and upon reflection and analysis, it's clear that these elements align with the key insights found in this study. Specifically, redefine problems, allowing time and allowing mistakes. There is no fundamental difference in teaching creative thinking in the Caribbean compared to other regions. It is simply a matter of cultivating a learning environment and integrating methods that allow for creativity to flourish. Thus, this research study supported the development of a pedagogical toolkit to facilitate further workshop studies, as well as a model that illustrates the requirements for nurturing creative thinking in the classroom.

The use of the questionnaire both pre and post-workshop allowed for the effectiveness of this research to be measured by mapping the confidence level the teachers have before and after their introduction to the creative problem-solving methods. The themes that arose from this research workshop perfectly grounded the toolkit components; empathy, ideation and prototyping. Future studies should expand the scope to public schools to understand the unique challenges that arise in different school settings to allow for further adaptive workshops. The biggest insight from this study is the importance of teachers to challenge the imagination and encourage innovation amongst students. Thus, there is a need to design for more pedagogical flexibility instead of the rigid structures that currently inhibit the Caribbean.

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# *Appendices*



## Appendix A – Email Recruitment

Date: XX

Dear XXX

I am a Graduate student at OCAD University in Toronto, Canada would like to invite you/your faculty members to participate in a research study for Co-designing Educational Toolkits for Teaching Creativity. The purpose of this study is to facilitate educators in teaching creative problem-solving exercises in classrooms. This workshop will explore methods to equip teachers to foster creative thinking in students by building upon the existing visual arts curriculum and creative thinking practices to inform the design, prototyping and evaluation of an educational toolkit for teaching creative thinking in Caribbean classrooms.

As a participant, you will be asked to take part in a workshop which will teach you creative problem-solving exercises focused on a social art and design problem. You will engage in idea brainstorming, group discussion, sketching, and idea mapping.

Participation will take approximately 2 to 3 hours of your time. The date and time of workshop is flexible depending on participant availability and preference with teaching schedules.

Possible benefits of participation include learning new creative problem-solving activities to implement into your classroom sessions.

If you have any questions about this study or require further information, please contact the Principal Investigator Zoya Shepherd or the Faculty Supervisor Nancy Snow, MDes using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at OCAD University #2019-54. If you have any comments or concerns, please contact the Research Ethics Office through [research@ocadu.ca](mailto:research@ocadu.ca).

**Principal Investigator:**

Zoya Shepherd  
Graduate Student, MDes Inclusive Design  
OCAD University  
+1 (647) XXX-XXXX  
[xxxxxxx@student.ocadu.ca](mailto:xxxxxxx@student.ocadu.ca)

**Faculty Supervisor:**

Nancy Snow, MDes,  
Assistant Professor, Faculty of Design  
Chair, Graphic Design and REB  
OCAD University  
+1 (647) XX-XXXX  
[xxxxx@faculty.ocadu.ca](mailto:xxxxx@faculty.ocadu.ca)

**PARTICIPANTS WANTED:**

# **LEARN HOW TO TEACH CREATIVE THINKING!**

---

This is a research study workshop for teachers who would like to learn activities to implement creative problem-solving exercises in their classrooms and improve their own creative teaching skills.

This workshop is part of a Graduate Program research study and will take place on the school premises.

**WORKSHOP DATE: Friday October 18, 2019 (Teacher’s Professional Day)**

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## **INTERESTED? WANT TO KNOW MORE?**

Enquire at the school office or email Zoya Shepherd – xxxxxxx@student.ocadu.ca

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This study has been reviewed and received ethics clearance through the Research Ethics Board at OCAD University (REB# 2019-54). If you have any comments or concerns, please contact the Research Ethics Office through [research@ocadu.ca](mailto:research@ocadu.ca).

## Appendix C – Informed Consent Form

**Date:** XX

**Project Title:** Co-designing Educational Toolkits for Teaching Creativity

**Principal Investigator:**

Zoya Shepherd  
Graduate Student, MDes Inclusive Design  
OCAD University  
+1 (647) XXX-XXXX  
xxxxxxx@student.ocadu.ca

**Faculty Supervisor:**

Nancy Snow, MDes  
Assistant Professor, Faculty of Design  
Chair, Graphic Design and REB  
OCAD University  
+1 (647) XXX-XXXX  
xxxxx@faculty.ocadu.ca

**PURPOSE**

The purpose of this study is to facilitate educators in teaching creative problem-solving exercises in classrooms. This workshop will explore methods to equip teachers to foster creative thinking in students by building upon the existing visual arts curriculum and creative thinking practices to inform the design, prototyping and evaluation of an educational toolkit for teaching creative thinking in Caribbean classrooms. The researchers are recruiting 4-8 teachers to participate, and workshops will be conducted in groups of four. This research study is being conducted by a Graduate Student in partial completion of the Master of Design in Inclusive Design program at OCAD University in Toronto, Canada. The results from this study will contribute to the Major Research Project (MRP) required for completion of the graduate program.

**WHAT'S INVOLVED**

As a participant, you will be asked to engage in simple activities such as idea brainstorming, group discussion, sketching, and idea mapping. At the same time, you will be learning new methodologies to integrate into your pedagogical practice. The workshop will include the following:

- Pre-workshop questionnaire
- Instruction on creative problem-solving methods
- 4 creative activities
- Group discussion
- Post-workshop questionnaire

Participation will take approximately 2 to 3 hours of your time.

Photos, video, and audio recording and questionnaires will collect your personal information such as name, place of work and capture your face but this information will remain confidential.

## Appendix C – Informed Consent Form continued...

### **POTENTIAL BENEFITS**

Possible benefits of participation include

- Learning foundational creative thinking methods and practices which you can incorporate into the existing curriculum or classroom exercises with your students.
- New perspective and ideas to improve your own creativity and creative teaching.
- Uncovering creative ways to make 11-13-year-old students more socially aware of issues within their society.

### **POTENTIAL RISKS**

There also may be risks associated with participation such as commonly found social risks in a workplace setting. For example:

- Judgement by coworkers when expressing your professional experiences or challenges.
- In a group session you may feel like you cannot fully express your opinion on matters for fear of being reprimanded by a supervisor who dislikes your perspective.
- Fellow participants not respecting the privacy and confidentiality of the workshop study and repeating things that you say to other faculty or administration outside of the workshop.

In order to reduce the chances of this occurring, all participants are required to complete and sign this consent form which informs them to respect the privacy and confidentiality of the workshop and fellow participants. All participants will be reminded of this at the beginning of the workshop. Additionally, this workshop and the questions asked throughout will be focused on leveraging practical teaching experience, not workplace grievances; Participants are discouraged from these kinds of discussions.

### **CONFIDENTIALITY**

The information you provide in this workshop will only be used for analyzing data and will not be redistributed in any way. Furthermore, because our interest is in the average responses of the entire group of participants, you will not be identified individually in any way in written reports of this research, unless you wish to be credited for your contribution to this study in the final report, where possible (e.g. quotations).

Audio or video-recording:

- Once the workshop is completed all recordings are property of the researcher only and you will not have any access to the recordings or transcripts.
- Only the researchers listed on this form will have access to the raw and transcribed recordings.

Data collected during this study will be stored on an encrypted hard drive which can only be accessed by the researchers listed on this form. Video and audio recording files will be transferred from the recording device to the hard drive after the workshop session and deleted from the recording device. Physical/paper recordings such as questionnaires will be scanned, and a digital copy will be secured on the drive. The hardcopy will then be securely discarded.

Raw data will be kept until the MRP is publicly posted online the OCADU open research repository around May 2020. After this the stored data will be deleted from the drive.

Access to this data will be restricted to Zoya Shepherd and Nancy Snow.

## Appendix C – Informed Consent Form continued...

### **SUPPORT FACILITATOR**

A support facilitator will be present in the room at the time of the workshop to provide assistance and technical support with recording devices, managing time, and distribute supplies where needed.

The support facilitator will not have access to the data property as all devices are encrypted by the principal investigator and passwords will not be shared.

The support facilitator for this workshop will be Andres Phillips. He holds undergraduate and graduate degrees in Engineering and has previous experience as a Research Assistant.

### **INCENTIVES FOR PARTICIPATION**

You will receive a \$25 gift card for your participation and refreshments will be served during the workshop.

### **VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. If you wish to answer a question but feel uncomfortable doing so openly in front of coworkers, you can also write your response down on the worksheets provided in the workshop.

Further, you may decide to withdraw from this study at any time, or request withdrawal of your data prior to data analysis and you may do so without any penalty or loss of benefits to which you are entitled. Your choice of whether or not to participate will not influence your future relations with OCAD University or the investigators; Zoya Shepherd or Nancy Snow involved in the research.

To withdraw from this study, let the Principal Investigator know at any point during the study or you may contact Zoya Shepherd by email at xxxxxxx@student.ocadu.ca

If you wish to withdraw after participation in the workshop, all questionnaires will be deleted immediately. Given the nature of group participation data cannot be destroyed but your recorded participation will not be analyzed or included in any way in the dissemination of this research study. To withdraw your data from the study, please contact Zoya Shepherd by email before October 31, 2019.

### **PUBLICATION OF RESULTS**

Results of this study may be published in: the students MRP, and/or in presentations to GradEx audiences (OCAD Universities year end show), conferences and colloquia. In any publication, data will be presented in aggregate forms. Quotations from interviews or surveys will not be attributed to you without your permission.

Feedback about this study will be available in the final MRP report posted publicly online. You can retrieve a copy by going to the website [openresearch.ocadu.ca](http://openresearch.ocadu.ca) (or Google search “OCAD open research” and select the website in the search results). Navigate the website using the Browse button where you can browse by year (2020), division (Graduate Studies/Inclusive Design) or author (Shepherd, Zoya). The MRP will be posted around May 2020.

## Appendix C – Informed Consent Form continued...

### **CONTACT INFORMATION AND ETHICS CLEARANCE**

If you have any questions about this study or require further information, please ask. If you have questions later about the research, you may contact the Principal Investigator Zoya Shepherd or the Faculty Supervisor Nancy Snow using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at OCAD University (REB# 2019-54)

If you have questions regarding your rights as a participant in this study, please contact:

Research Ethics Board c/o Office of the Vice President, Research and Innovation  
OCAD University  
100 McCaul Street  
Toronto, M5T1W1  
416 977 6000 x4368  
research@ocadu.ca

### **AGREEMENT**

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Thank you for your assistance in this project. Please keep a copy of this form for your records.

## Appendix D – Research Workshop Prototype

# TEACHING CREATIVITY

CO-DESIGNING EDUCATIONAL TOOLKITS

RESEARCH STUDY WORKSHOP DESIGNED BY ZOYA SHEPHERD

OCT. 18. 2019 // BARBADOS

WELCOME AGENDA CREATIVE THINKING ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

*Let's get started!*

WHO AM I?  
& WHAT  
DO I DO?

Studying MDes Inclusive Design  
(Candidate 2020)

Introduce workshop assistant.

WHAT IS  
THIS STUDY  
ABOUT?

Building on existing research  
which shows that Caribbean  
teachers aren't confident  
teaching creative thinking.

Using Art Education as a tool to  
solve social problems, towards  
a more creative economy

HOW DO  
YOU FIT IN?

Co-designing is an Inclusive  
Design Methodology.

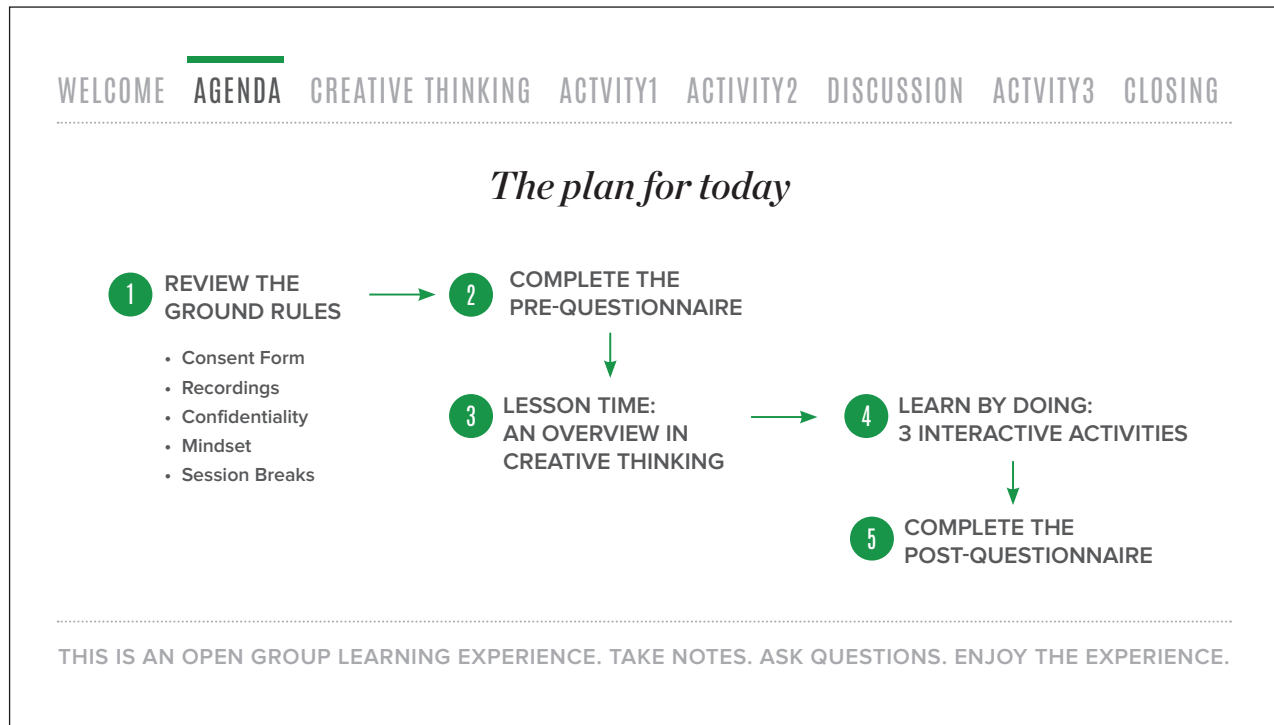
Leveraging your expertise  
to get the design right!

TELL ME  
ABOUT  
YOU!

Briefly, let's match faces to  
my list of participants.

What do you hope to get out  
of this experience?

## Appendix D – Research Workshop Prototype continued...



WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

---

*Solving problems creatively*

- There is a difference in being creative, doing creative disciplines and creative thinking.
- Creativity is defined as a “novel product, idea, or problem solution that is of value to the individual and/or the larger social group” (Hennessey and Amabile (2010). Creative thinking is therefore the process used to generate appropriate and new ideas to solve problems.
  - Common myth is that only some people are creative and they’re born that way.
  - Why is creative thinking important and where is it lacking in Caribbean education?
  - There is a step by step methodology one can use to engage problems creatively.



## Appendix D – Research Workshop Prototype continued...

WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

---

*A human centered approach*

CLICK THIS LINK FOR VIDEO:  
<https://vimeo.com/106505300>

WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

---

*5 stages of this process*

```
graph LR; A((EMPATHIZE)) --> B((DEFINE)); B --> C((IDEATE)); C --> D((PROTOTYPE)); D --> E((EVALUATE));
```

EMPATHIZE	DEFINE	IDEATE	PROTOTYPE	EVALUATE
Different from sympathy. Understand the other person's position. Find common ground.	Connect the dots and identify the problem. Get clarity on the issue.	Brainstorm, group think and dream big. Quicker is better. Don't overthink it.	Employ action and move from thought to thing. Prototypes can be as simple as sketches.	Engage the person who you're trying to help. Test, get feedback and improve.

## Appendix D – Research Workshop Prototype continued...

WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

---

*Example of human centered approach*

CLICK THIS LINK FOR VIDEO:  
<https://www.youtube.com/watch?v=rWYClv8bico>

WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

---

*Applying a human centered approach*

DOING SOMETHING CREATIVE

ART TASK

SOCIAL PROBLEM

USING A CULTURAL PAIN POINT

APPLY CREATIVE PROBLEM SOLVING SKILLS  
{a human centered approach}

## Appendix D – Research Workshop Prototype continued...

WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

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*The object of this exercise*

**THE BAJAN SNOWCONE VENDOR**

- 1 Empathize
- 2 Define
- 3 **Ideate**
- 4 Prototype
- 5 Evaluate

CLICK THIS LINK FOR VIDEO:  
<https://www.youtube.com/watch?v=aKWmSQjsxz8>

WELCOME AGENDA **CREATIVE THINKING** ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 CLOSING

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*Building empathy by building a persona*

**PAIRED ACTIVITY**

You and your partner should role play for a moment. One of you is the snow cone vendor. The other is the creative problem solver. Get to know the snow cone vendor by building a persona using the tools provided.

1. Use the empathy map to build the character of the snow cone vendor by adding details of his experience. Once it is filled out give the persona a name.
2. You can switch places now. Use the customer journey map to plot what the snowcone vendor does day to day to run his business.

**DO NOT WORRY ABOUT GETTING THIS PERFECT.  
WE ARE JUST GETTING FAMILIAR WITH THE ACTION OF BUILDING EMPATHY.**

**WHAT YOU NEED:**

1. Pen/pencil/marker
2. Empathy map
3. Customer Journey Map
4. Blank sheet of paper

**20**  
minutes

## Appendix D – Research Workshop Prototype continued...

WELCOME AGENDA CREATIVE THINKING ACTIVITY1 **ACTIVITY2** DISCUSSION ACTIVITY3 CLOSING

### *Ideate & Prototype*

#### GROUP BRAINSTORM (2 groups)

Based on the persona we just built, we are going to generate ideas to solve the problem case the snow cone vendor is having.

1. Take 2 minutes and write down as many ideas that come to you. These can just be key words (not full sentences). Do not overthink it, there are no bad ideas and no wrong ideas ... we are just rapidly generating.
2. Let's cluster these ideas together to find a common theme.
3. Based on the ideas and themes generated, do a quick prototype sketch of what this looks like to you. You can draw, use stick men, storyboard the idea, use speech bubbles, cut & paste, build a small model etc.

#### WHAT YOU NEED:

1. Pen/pencil/marker
2. Sticky notes
3. Blank sheets of paper
4. Craft supplies



#### VIDEO EXAMPLE OF PAPER PROTOTYPE OF A SMART WATCH

CLICK THIS LINK FOR VIDEO:  
<https://www.youtube.com/watch?v=KhwifJtBxTk>

## Appendix D – Research Workshop Prototype continued...

WELCOME AGENDA CREATIVE THINKING ACTIVITY1 ACTIVITY2 **DISCUSSION** ACTIVITY3 CLOSING

### Q&A

LET'S DISCUSS THE 3 PROBLEM SOLVING STAGES WE JUST WENT THROUGH.

- What have you learned?
- How can you apply these methods to another area of teaching or subject?
- Other than the snowcone vendor, what other object would you apply this to?
- Any questions or clarification needed?



WELCOME AGENDA CREATIVE THINKING ACTIVITY1 ACTIVITY2 DISCUSSION **ACTIVITY3** CLOSING

### *Deconstruct & Reconstruct*

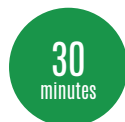
#### MINI GROUP ACTIVITY (2 groups)

Imagine that when you leave this workshop you want to share these methods with another teacher. You need to instruct them how to go about implementing these methods into their class teaching. You are compiling this into an instruction kit for her/him to use right away!

1. Use the sticky notes to write step by step what that teacher needs to be able to implement this. Think of information, tools, instructions etc.
2. Provide an example for them to try out in their class. Roughly draft a lesson plan or activity for them to experiment with. This can be any subject ...choice is yours!

#### WHAT YOU NEED:

1. Pen/pencil/marker
2. Sticky notes
3. Blank sheets of paper
4. Lesson plan template



## Appendix D – Research Workshop Prototype continued...

WELCOME AGENDA CREATIVE THINKING ACTIVITY1 ACTIVITY2 DISCUSSION ACTIVITY3 **CLOSING**

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*Let's wrap this up!*

- 1 COMPLETE THE POST-QUESTIONNAIRE**  
↓  
7-10 minutes, please be thoughtful and honest in your responses.  
Handover your questionnaire paper before you leave!
- 2 ANY QUESTIONS OR COMMENTS?**  
↓  
The resource kit is yours to keep!  
Please enjoy and use it in your teaching activities!
- 3 ABOUT THIS MRP: RESULTS & DATES**  
↓  
This MRP will be posted publicly in April/May 2020.  
The last page of your resource kit has instructions how to locate it.

**Thank You!**  
FOR YOUR PARTICIPATION

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IN PARTIAL FULFILLMENT OF MDES INCLUSIVE DESIGN AT OCADU

# TEACHING CREATIVITY

WORKSHOP RESOURCE KIT

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RESEARCH STUDY FACILITATED BY ZOYA SHEPHERD

## Appendix E – Workshop Activity Resource Kit continued...

### QUESTIONNAIRE

---

#### PRE-WORKSHOP

1. What is your name? .....

2. What age group and subject do you teach? If you teach several subjects (example primary school class/form teacher) just write “primary”.

.....  
.....  
.....

3. How would you define creativity?

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.....  
.....  
.....

4. Define what you think a creative person is. Based on this definition, do you consider yourself a creative person?

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.....  
.....

5. Define what you think “creative thinking” is and based on your definition, state if you feel confident in teaching creative thinking skills.

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Appendix E – Workshop Activity Resource Kit continued...

**QUESTIONNAIRE**

6. Do you think everyone has the capacity to be creative, and that creativity can be taught and learned? If yes, give an example you've seen in your experience. If no, explain your reason for this.

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## Appendix E – Workshop Activity Resource Kit continued...

### QUESTIONNAIRE

---

#### POST-WORKSHOP

1. Which of the activities and lessons today did you find the most impactful and get the most value from and why? Please be as detailed as possible. You can select more than one if you wish.

- Lesson: Human centered approach to creative problem solving
- Activity 1: Building Empathy by Building a Persona
- Activity 2: Ideating & Prototyping
- Activity 3: Deconstruct & Reconstruct

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2. Which problem-solving activity do you find to be most immediately usable in your existing class sessions? Is there a subject or specific topic you're trying to communicate to students right now that this activity can help facilitate?

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3. Which activity do you see as having the most ability to use in an art lesson?

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## Appendix E – Workshop Activity Resource Kit continued...

### QUESTIONNAIRE

4. Did you find the 5 stages of creative thinking proposed today to be a useful framework for teaching and education overall? In what ways can you see this enhancing student learning?

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5. Based on the definition you provided in the pre-workshop questionnaire, has your understanding or opinion of creativity changed after completing this workshop?

.....  
.....  
.....

6. Do you feel confident to take the creative thinking methods today and implement them into your teaching curriculum? YES  NO  (Add anything else you wish to say below)

.....  
.....

7. If you do not feel confident continuing these creative thinking methods, what else would you need to build that confidence?

.....  
.....  
.....  
.....

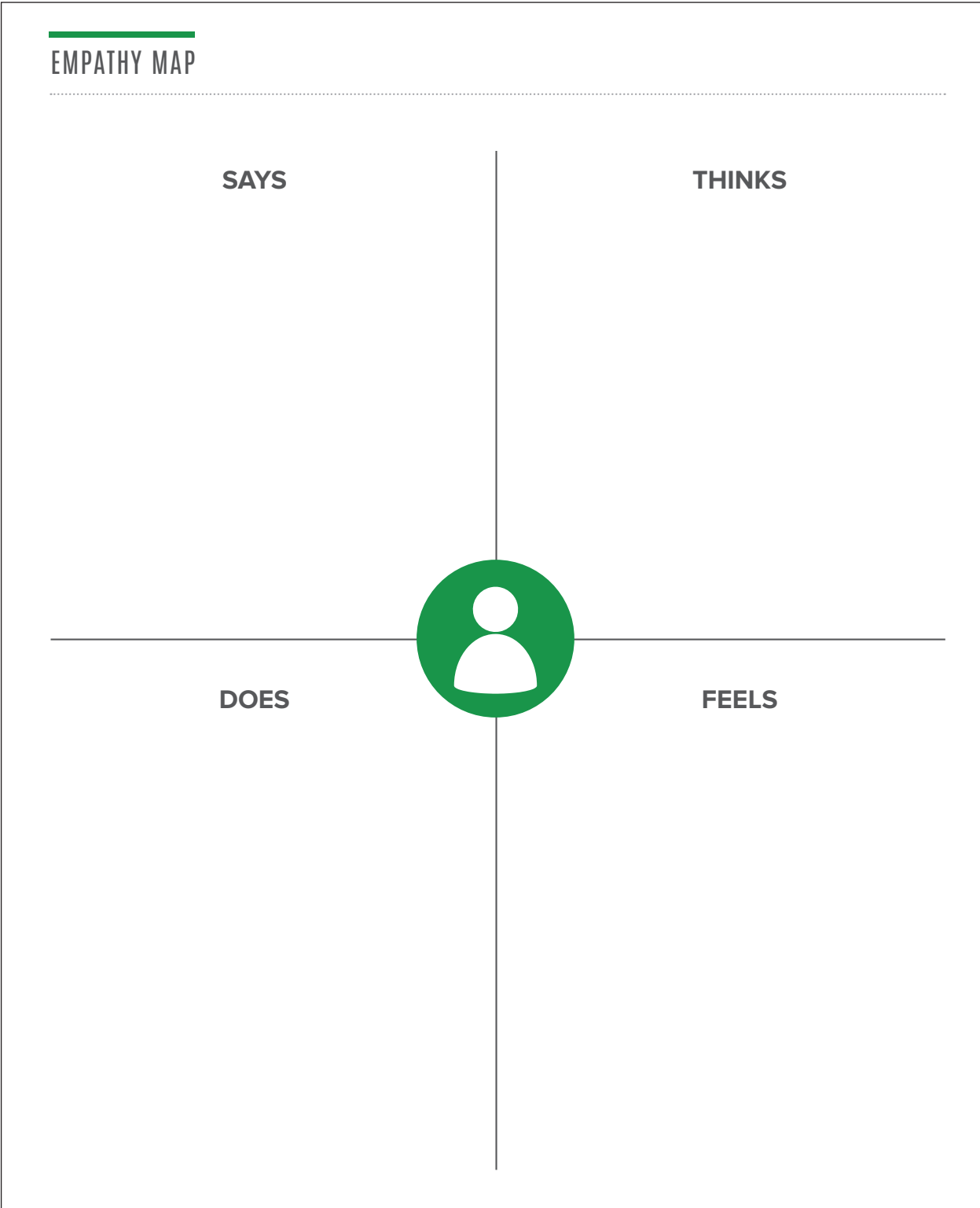
8. Would you recommend these creative problem-solving skills to other teachers? YES  NO   
(Add anything else you wish to say below)

.....  
.....

9. Overall what was your experience in today's workshop? What can we improve?

.....  
.....  
.....

Appendix E – Workshop Activity Resource Kit continued...



Appendix E – Workshop Activity Resource Kit continued...

**CUSTOMER EXPERIENCE MAP**

PERSONA NAME: \_\_\_\_\_

PROFESSION: \_\_\_\_\_

SCENARIO: \_\_\_\_\_

STAGE	ACTIVITY	EMOTION

## Appendix E – Workshop Activity Resource Kit continued...

### CASE STUDY PROBLEM

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#### SCENARIO 1:

John has been a snow cone vendor for 23 years. He usually works in town where he is typically stationed on the bridge. In a good week he sells about 50 snow cones per day which is just enough to sustain his lifestyle. Recently, the government has been running a health and wellness awareness program in an attempt to make people more conscious of the food and diet choices they make. This campaign launched because of the alarmingly high diabetes rate in the country which has been the topic of much debate the past 2 years. The good news is, the campaign is working! People are really changing their eating habits and making better lifestyle choices. The bad news is John isn't making many sales these days. Snow cones are high in sugar and people are simply not interested.

John has been running his snow cone cart all of his adult life in order to make a living. This is what he knows, and it's what he loves! In order to survive financially, John needs to innovate. He needs to come up with an alternative product that's not so high in sugar. What kind of snow cone can he make that will be "just as good" as the original? How will he make it? How will he distribute it?

## Appendix E – Workshop Activity Resource Kit continued...

### CASE STUDY PROBLEM

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#### SCENARIO 2:

Sandra has been a snow cone vendor for the past 8 years. She's good at it. She usually sells on the West Coast by the beach and gets a healthy amount of sales and is usually stationed by the sidewalk next to the pathway that leads down to Payne's Bay. Here she is visible to the beachgoers as they pass by. However, just 3 weeks ago that pathway and section of the sidewalk got closed off because the cafe right next to it is undergoing construction. This means there's no beachgoers walking by Sandra's usual spot. She needs to reposition herself or she'll lose money fast! Her only option is to actually go down onto the beach and set up shop there. The problem is the cart...it's not made for the sand.

Sandra needs to reconfigure her cart so that her bicycle can maneuver the sand. Right now, the tires are way too thin. Stability on the sand is also an issue, the bike and cart will need something added to help anchor the weight in the soft sand. Additionally, there are days when the beach security is around and they don't allow bicycles past a certain point. This means she'll have to leave the bike in the bike rack and find a way to get the rest of the cart down to the beach. When this happens she'll also need a new seat since the bike won't be an option.

How can Sandra redesign her mobile business to fit the new demands placed upon her?!





ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Pre-Questionnaire	10 minutes	Appendix E	<p>Enjoyment</p> <p>Expression</p> <p>Making Things</p> <p>Critical Thinking</p> <p>Autonomy</p>	<p><b>How would you define creativity:</b></p> <p>P1: The ability to use your imagination to problem solve or express an emotion or concept.            P2: Ability to express in varying forms your thoughts/opinions, perspectives and feelings.            P3: The ability to think and deliver a fresh approach either in delivery or understanding.            P4: A stimulating way to bring new ways in getting things done or experiencing enjoyment with getting things done.            P5: Creativity is the ability to think/produce “outside the box”.            P6: The ability to approach a problem/activity with many different perspectives, not knowing in advance what is right or wrong, and being able to solve the problem/do the activity by bringing multiple dimensions to it.            P7: Everyone is creative, it’s the ability to make something. Creativity is not just art but involves poetry, cooking, gardening, engineering etc.            P8: The ability to think, interact and experience the world in multiple ways and express these.</p>
			<p>Expression</p> <p>Making Things</p> <p>Critical Thinking</p> <p>Autonomy</p> <p>Visualization</p> <p>Connection</p>	<p><b>Define what you think is a creative person and do you consider yourself to be one?</b></p> <p>P1: One who is able to use available resources to solve a problem or express ideas. (Yes)            P2: A creative person uses anything (information/stimulus) to make something new or to enhance a particular concept using prior knowledge/experience. (Yes)            P3: The ability to think and deliver a fresh approach either in delivery or understanding. I’m creative with language. (Yes)            P4: One with a flair for colours, visual expressions, precision and fun. I’m borderline and inconsistent (No)            P5: One that defies conventional way of thinking and is not restricted by how others see them or feel about them. (Yes)            P6: One who has the ability to “see” many methods for problem-solving and has many different skill sets to call on in order to achieve their goals. (Yes)            P7: Creative people can make something but add their own twist/individuality. (Yes)            P8: One who can engage with their environment in ways that are flexible and reflective. (Yes)</p>

Appendix F – Chart of Workshop Results continued...

ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Pre-Questionnaire	10 minutes	Appendix E	Resourcefulness Critical Thinking Problem Solving Creating Change	<p><b>Define what you think “creative thinking” is and do you feel confident teaching these skills?</b></p> <p>P1: The ability to formulate solutions for problems based on available resources. (Somewhat)                      P2: Thinking ‘outside the box’ to enhance critical thinking skills. (Yes)                      P3: More confident fostering creative thinking in students who have some natural ability. (Somewhat)                      P4: Looking at alternative ways to problem solve. (No)                      P5: Infinite and forever changing and evolving. (Yes)                      P6: Using a variety of approaches to problem solve. (No)                      P7: Ability to take something and turn into something else. (Yes)                      P8: Making connections and applying emotional intelligence, reflect and problem solve. (Yes)</p> <p><b>Does everyone have the capacity to be creative?</b></p> <p>P1: Yes, everyone has the ability based on skillsets and natural talent. Creativity can be taught.                      P2: Yes, everyone can be creative. The creative part of the brain just needs to be “exercised”.                      P3: Creativity can be fostered but it needs other qualities (empathy, adaptability) to build upon.                      P4: Some have more natural ability but it’s a skill that can be learned.                      P5: Depends on the creative subject. In art not everyone has the ability if they just aren’t visual.                      P6: Everyone has the capacity once given opportunity and that creativity can be taught but some will be better able to grasp the concepts.                      P7: Everyone can be creative but it can be enhanced by exposure.                      P8: Definately, the capacity to be creative is part of the human experience</p>
Introduction	15 minutes	N/A	Motivation Change	<p>P5: There is a shift in student’s intake of information.                      P3: I have difficulty teaching creativity to students who find creative things difficult. New approach needed.                      P4: In my subject students have challenges with problem-solving.                      P8: Student’s aren’t always meeting new content. It’s critical to implement new skillset into material.                      P2: I need ideas how I can teach creative thinking. Looking for best practices.                      P6: I want students to visualize the problem and draw the problem and show the problem. I’m hoping to figure out how those two mesh.</p>

Appendix F – Chart of Workshop Results continued...

ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Discussion	15 minutes	N/A	<p><b>Pressure</b> Stress Limitations</p> <p><b>Perception</b> Need for Change Mindset Environment</p> <p><b>Time</b> Limitations Deadlines Resources</p> <p><b>Evaluation</b> Pressure Inflexibility Expectations</p>	<p>P5: There are too many subjects and the students are stressed. P8: It's hard to balance content with timing the syllabus requirements. P1: Once something is for exams the relaxed atmosphere needed to engender creativity disappears! P5: Lack of resources and time. The children are stressed with the large amount of work and marks.</p> <p>P1: When you want creativity to flow you want people to be relaxed. I am most creative when not pressured. P4: I think that you cannot teach the same way and try to be creative. It has to be a whole change! P4: Our mindset is still so traditional, we will have a challenge.</p> <p>P1: We don't have the resources and we don't have the time. P5: CXC comes up with a lot of objectives that are supposed to help us, even though they aren't the ones doing it. P8: Takes half the class or even the entire class to get them involved and help them to understand and find examples and connect them to the information.</p> <p>P8: We are heavily marks driven and I do think that all of us need to question the mental model about that. P1: In education it's still the authorities have designed something and then you're given it and you need to execute it properly because those marks are very important. We're still afraid to experiment. P6: The whole education system we have is it's either right or wrong. There's no middle of the road.</p>
Lesson: Human Centered Problem-Solving	20 minutes	Appendix D: design thinking framework & video samples	N/A	<p>P1: I never knew about [this] methodology. I believe this can be used in Literature, Language and life on a whole.</p>

Appendix F – Chart of Workshop Results continued...

ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Activity 1 Empathy Building	20 minutes	Appendix E: empathy map customer journey map	Empathy Connection Mindset Perception	P1: Good for building characters in Literature. P5: Other lessons can emerge from this. Gives a deep insight into the character/culture/situation. P8: The process of empathy helps a lot, even if you don't have all the specialty knowledge, it helps to create a shift. P4: Allowed me to get in touch with the character and helped me to visualize the person's way of thinking. P8: The key to empathy...the fact that if you are being creative you are engaging in your environment at all times. Trying to switch how you think and trying to put yourself in the other persons position.
Activity 2 Ideate & Prototype	30 minutes	Appendix E: case study problem	Connection Problem Solving	P2: This was engaging to create what might have been an impossible task if we had not explored the empathy model first. P4: This allows for application and solution to the problem. P5: I like the brainstorming and generating "fixes".
Activity 3 Deconstruct & Reconstruct	30 minutes	Appendix E: lesson plan template	Evaluation Perception	P2: This was engaging to create what might have been impossible task if we had not explored the empathy model first. P3: Encourage students to be freer in expression, to understand there are many solutions and that no answer is wrong, it may just be more or less applicable. P8: Thinking about ways that teachers can evaluate that's not everything for a mark. P6: Have the children evaluate themselves as well. P8: Flip the script a little bit and have the teacher think about what would it be like to be the learner. See the objective from not what I have to deliver but what I have to learn and from that perspective to then reflect a bit about the students perspective on what they might be getting.

Appendix F – Chart of Workshop Results continued...

ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Discussion	10 minutes	N/A	<p><b>Objective</b> Approach Intention</p> <p><b>Evaluation</b> Alternatives Perception</p> <p>Connection  Intention</p> <p><b>Support</b> Community Connection</p>	<p>P6: I liked having to read that scenario and think about it and figure out. Sometimes we might be able to have a scenario and put it to the children and let them talk about it and then have a class discussion and draw from everyone’s point of view to create the note that you eventually want them to get to.</p> <p>P3: I liked the part about no wrong answers because I find with Form 1’s after all the common entrance preparation it’s hard for them to believe that two different answers can both be right because that’s not what they’ve been prepped for, so something like this that teaches them that there are many right answers, it’s a really good way to start shifting that.</p> <p>P5: What stands out is you really have to think outside the box. In order to solve the problem, try not to latch on to expectations and you just have to be brave to think outside</p> <p>P6: I need to become more empathetic towards students and imagine myself in their shoes. Give them more time to express their thoughts and identify problem solving methods.</p> <p>P6: One of the problems is we don’t have enough people in the departments to brainstorm with. If you’re having to teach a class, you’re brainstorming with yourself and that doesn’t help!</p> <p>P5: I’m the only one up there. Sometimes there’s a lot of people you have to get around to get information.</p>
Post-Questionnaire	10 minutes	Appendix E	Activity 1: Empathy Building	<p><b>Which activities did you find most impactful and get the most value from?</b></p> <p>P1: Human-centered lesson / Activity 1 / Activity 2  P2: Human-centered lesson / Activity 1 / Activity 2  P3: Human-centered lesson / Activity 1  P4: Activity 1 / Activity 2  P5: Activity 1  P6: Activity 2  P7: Activity 2  P8: Activity 1 / Activity 2</p>

ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Post-Questionnaire	10 minutes	Appendix E	Activity 1: Empathy Building	<p><b>Which problem solving activity do you find most immediately usable in your classes?</b></p> <p>P1: Empathy (activity 1)            P2: Ideate &amp; Prototype (activity 2) and deconstruct/reconstruct (activity 3) may be useful for math lessons.            P3: Empathy (activity 1)            P4: Empathy (activity 1)            P5: Empathy (activity 1) and Ideate &amp; Prototype (activity 2)            P6: Empathy (activity 1)            P7: Ideate &amp; Prototype (activity 2)            P8: Empathy (activity 1)</p>
			Activity 2: Ideate & Prototype	<p><b>Which activity do you see as having the most ability in an art lesson?</b></p> <p>P1: Prototyping (activity 2)            P2: Ideate &amp; Prototype (activity 2)            P3: Empathy (activity 1)            P4: Ideate &amp; Prototype (activity 2)            P5: Empathy (activity 1) Ideate &amp; Prototype (activity 2) and Decsonstruct/Reconstruct (activity 3)            P6: Empathy (activity 1)            P7: Ideate &amp; Prototype (activity 2)            P8: Unsure</p>
			Accessible	<p><b>Did you find the 5 stages of creative thinking to be useful for teaching and education overall?</b></p> <p>P1: Yes – it can help teachers encourage critical and creative thinking as a necessary life skill.            P2: Yes – it definitely enhances the learning experience by allowing students to come up with ideas.            P3: Yes – the stages are clear and breakdown creativity in use.            P4: Yes – the various stages would allow students to remain focused and on task.            P5: Yes – these stages enhance “brainstroming” sessions which can otherwise be quite shallow.            P6: Yes – engaging for students and increases participation.            P7: Yes – it will help students put their ideas into more practical and visual form thereby improving retention.            P8: Yes – it will allow students to engage more and take risks while being reflective about their own learning.</p>
			Practical	
			Engaging	

ACTIVITIES	TIME	RESOURCES	THEMES	PARTICIPANT RESPONSES
Post-Questionnaire	10 minutes	Appendix E	N/A	<p><b>Based on your pre-workshop definition of creativity has your understanding changed?</b></p> <p>P1: Yes – teaching creative thinking is more accessible and can be a step by step process.            P2: Yes – i’m more aware about types of creative thinking and strategies for teaching.            P3: Yes – more specifically laid out with steps to creativity instead of “be creative”.            P4: Yes            P5: Yes            P6: No            P7: Yes – its also about problem solving, making something new or better.            P8: No – but this has reinforced ideas about the importance of perspective and questioning etc.</p> <p><b>Do you feel confident implementing these creative thinking methods into your teaching curriculum?</b></p> <p>P1: Yes – I just need to know how to appropriately assess the outcome of the process.            P2: Yes – it may be more challenging for some subjects than others. Maybe additional sessions.            P3: Yes            P4: Yes            P5: Yes – but I need a timetable that allows for it.            P6: No – I have an understanding but I’m not confident yet.            P7: Yes – but with the size of the curriculum, time would make this difficult            P8: Yes</p> <p><b>Would you recommend these creative problem solving skills to other teachers?</b></p> <p>P1: Yes            P2: Yes            P3: Yes            P4: Yes            P5: Yes            P6: Yes            P7: Yes            P8: Yes</p>

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