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ABSTRACT

This paper alerts the advancement of technologies that evolves graphic and product design in this digital age. It is to emphasise that the BA Visual Arts (Special) curriculum might not be reflecting the updated technological changes occurring in the current era. Current technical skills that support students' creative thinking are revealed, highlighting the increasing demand for these skills in the design industry and postgraduate studies. The 80/20 rule can be used to strategically re-evaluate the model of the curriculum in order to introduce new skills forming a “New DCFA Design”. Innovation in change is needed for the institution to adapt to the new curriculum design that is responsive to the digital era. However, there are barriers that can prevent this change, where change management must be encouraged. Surveys were distributed to a sample of design students as well as Art and Design educators in the DCFA. Our analysis viewed the program's position on the adaptation of design and technology in the change of era showing students' openness to change and experience new technical skills within the curriculum. However, educators' responses to some degree showed resistance to change. For the new design curriculum to become part of DCFA, it would take more effort on the part of teachers to adapt to the new curriculum model for design.

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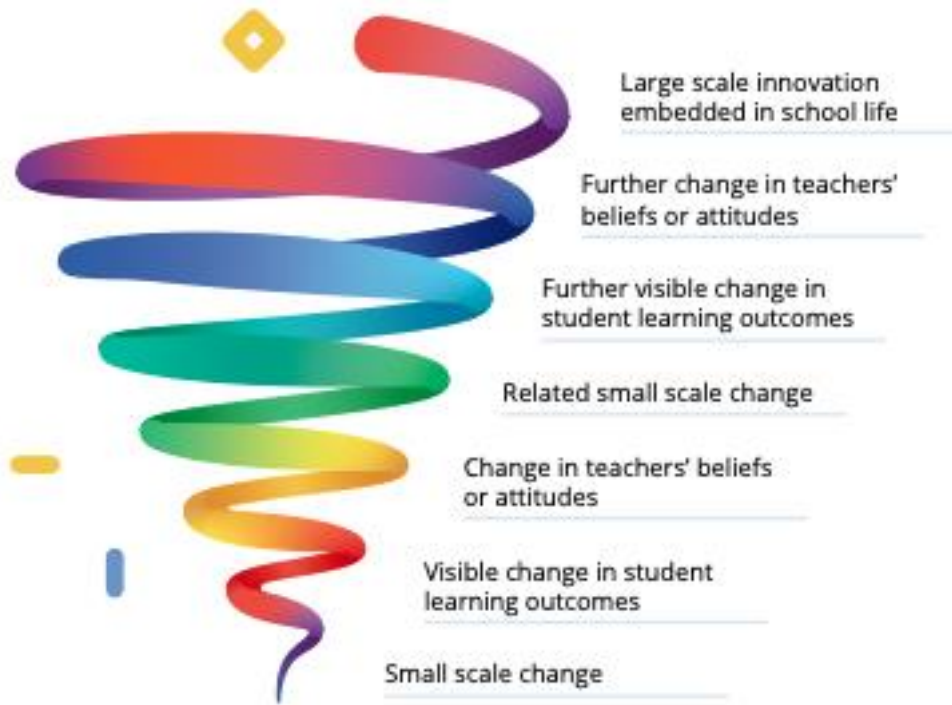
FIGURE 2a: THE CURRENT DCFA DESIGN PROGRAM VS THE NEW DCFA DESIGN PROGRAM

	CURRICULUM	
YEAR 1	Current DCFA program	New DCFA Design program
Semester 1 Compulsory	Information and Communications Technology (ICT) and Design Foundation	Restructure: Information and Communications Technology (ICT) and Design Foundation- Design 1
	Drawing	Drawing
	History of Art, Architecture and Design in the Caribbean part one	Restructure: History of Art, Architecture and Design in the Caribbean
Electives	Drawing Introductory Techniques	Drawing Introductory Techniques
	Ceramics: Mould Making and Slip Casting	Ceramics: Mould Making and Slip Casting
	Visual Arts and Communication Studies	Visual Arts and Communication Studies
	Introduction to Art Education: Philosophy and Practise of Art Teacher I and Introduction to Art part one	Introduction to Art Education: Philosophy and Practise of Art Teacher I and Introduction to Art part one
Semester 2 Compulsory	Three-Dimensional Design	Three-Dimensional Design
	Colours and Materials	Colours and Materials
	History of Art, Architecture and Design in the Caribbean part one	Restructure: Critical Reading of Caribbean Art and Culture

Electives	<p>Ceramics: Hand building and Wheel Throwing</p> <p>Photography</p> <p>Introduction to Art Education: Philosophy and Practice of the Art Teacher I and Introduction to Art part two.</p>	<p>Ceramics: Handing building and Wheel Throwing</p> <p>Photography</p> <p>Introduction to Art Education: Philosophy and Practise of Art Teacher I and Introduction to Art part one</p>
YEAR 2		
Semester 1 Compulsory	Design Laboratory 1	Design Laboratory 1
	Design 1	Restructure: Film and Video
	Critical Reading of Caribbean Art and Culture part one	Restructure: Project Management (Year-long)
Electives	<p>Costume Fabrication part one</p> <p>Ideas of Contemporary Art part one</p>	<p>Costume Fabrication part one</p> <p>Ideas of Contemporary Art part one</p>
Semester 2 Compulsory	Design Laboratory 2	Design Laboratory 2
	Design 2	Restructure: Design 2
	Critical Reading of Caribbean Art and Culture part one	Restructure: Project Management (Year-long)
Electives	<p>Costume Fabrication part two</p> <p>Ideas of Contemporary Art part two</p>	<p>Costume Fabrication part two</p> <p>Ideas of Contemporary Art part two</p>
YEAR 3		
Semester 1 Compulsory	Design 3 (Year-long)	Design 3 (Year-long)

	Design Laboratory 3 (Year-long)	Design laboratory 3 (Year-long)
	Design Research Seminar (Year-long)	Design Research Seminar (Year-long)
Electives	Idea of design Culture part one Film and Video part one	Idea of design Culture part one Film and Video part one
Semester 2 Compulsory	Design 3 (Year-long)	Design 3 (Year-long)
	Design Laboratory 3 (Year-long)	Design Laboratory 3 (Year-long)
	Design Research Seminar (Year-long)	Design Research Seminar (Year-long)
Electives	Idea of design Culture part two Film and Video part two	Idea of design Culture part two Film and Video part two

FIGURE 3a: THE SPIRAL MODEL OF EDUCATIONAL CHANGE



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INTRODUCTION

Rationale

In the Bachelor of Art Visual Arts (Special) program, there is no doubt that the Department of Creative and Festival of Arts (DCFA) continuously strives and aims to offer a variety of courses at the highest level of academics for the Art and Design students. However, there is a shortfall. Design has been continuously evolving in the area of technological influence, but despite this, our academic program responses have not reflected the need to transition into the digital era. The DCFA design students should be armed with a variety of technical and software skills which would work with their creative thinking in anticipation to secure the role of designer regardless of the chosen industry. An undergraduate student may find their potential for entry to top tier postgraduate programs compromised due to this shortfall. An assistant professor in Graphic Design at Lamar University by the name of Sherry Saunders quotes from the book, **‘Becoming a Digital Designer’** co-authored by Steven Heller that:

“Technology has so thoroughly altered the way designers now practise that it is as necessary to be a technologist as it is to be an artist—and many young designers are more involved with the latter than the former, only later fusing technology and art into design”.

Thesis Statement

Updated technological skills used in design are necessary for the DCFA's Bachelor of Arts Visual Arts (Special) program due to the increasing demand for current employable technical skills in the design industry and requirements for entry into postgraduate programs.

Parameters

The focus of this study will be on the graphic and product design skills required for a typical Bachelor of Arts Visual arts (special) program for class 2022.

Objectives

This paper will identify the importance of the new technology in design, therefore, highlighting the importance of software and technical skills for design courses and design jobs in this digital revolution. In this paper, we will examine the DCFA design program, devise a design for implementing these new technical skills into the curriculum and how this would implement an innovative change. This study will provide surveys to sample educators and design students of class '22 to gain information regarding the program's position on adapting to design and technology in the digital age and evaluate design students' expectations of the program concerning their career plans after Undergraduate studies. This paper will hopefully have an impact on the DCFA, and thereby compel them to re-evaluate how they approach this program, to accommodate the digital age.

Methodology

Will introducing new technological skills impact the BA Visual Arts (Special) program? Is DCFA in the design program adapting to the change of modern technology? Is there a need for improvement within the design curriculum? These are the key questions that need to be asked and eventually answered. Therefore, the data collected for this paper will consist of secondary resources from research articles and primary sources from blogs owned by entrepreneur designers based on the topic to fill the void of the questions. The survey consists of multiple-choice questions and will be distributed to the design students of Class 2022 and DCFA faculty members.

Chapter Outline

This study consists of 4 chapters. Chapter 1 is entitled “Graphic and Product design in the digital era”. Chapter 2 is entitled “The Design”. Chapter 3 is entitled “Adapting to Change” and Chapter 4 is entitled “The Model”.

GRAPHIC AND PRODUCT DESIGN IN THE DIGITAL ERA

i. Graphic design and New Technologies

In the digital age, the teaching of cutting-edge technology has become equally as important as traditional art education. In graphic design, one must first have a basic foundation of the elements and principles of art at the tertiary level. The expectations of tertiary education are for programs to position students in preparation for their chosen careers. The graphic design field has embraced designers who possess a deep understanding of visual arts, typography, colour studies, object placement and project management (Browning Center). The traditional techniques of tracing to create fonts, recycling typography from magazines and books and drawing illustrations assisting in producing posters, book covers and more (K. Kavett, 2012) should be learnt at a foundation level in conjunction with new technologies. New technologies in visual communication graphics can encourage "precision, transparency, creativity, flexibility" (Browning Center) and the ability to transform cognitive skills into reality. Davis (2021) claims that the evolution of technology has affected graphic design. This is evident using smart devices which are more efficient and effective when handling numerous designs with complex resolutions and colours to produce advanced quality graphics.

Multimedia is the communication of information using multiple mediums that meet key elements appealing to the visual and auditory senses. This, in turn, activates the human psyche; hence the combination of modern and formal art – for example the latest Graphic Design techniques and Fine Arts. Huang (2020) explains that "multimedia " concerning graphic design, refers to the art of design using computer technology and any combination of carrier, text, image, computer graphics, animation, sound, video and more. Technical methods facilitate designs

incorporated into the computer software which ease the process (S. Huang, 2021, vol 35, p. 215). Multimedia technologies, therefore, have a positive impact that boosts the creativity levels of the designer (Najmuldeen, et al, 2021) giving them the ability to express themselves freely (Natalie & Zenasni, 2010) and more precisely (Najmuldeen, 2021). This benefits various professions in the field of graphics such as "illustration and animation" (Najmuldeen, 2021). The advancement of technology has simultaneously evolved graphic design, as a result, a brand-new field of graphic design has emerged such as 'digital art' - a hybrid of graphic design and formal art (Archana, 2018; et al.) has become highly recognised due to the continuous rise of creativity through new technologies (Najmuldeen, 2021). Students were able to express their imaginative thoughts more freely in contrast to traditional forms of art (Najmuldeen & Banu, 2019).

ii. Product design and New Technologies

Designing tangible and intangible products or services requires a combination of creative cognitive and high level of advanced technical skills. This would be further elaborated under the subheading "**Design Skills in the Industry and Education**". For now, there will be a focus on the responsibility of tertiary education producing potential product designers who are prepared to make an impact in this challenging and highly competitive profession. Walsh et al (1988) states that product design is defined as "the activity in which ideas and needs are given physical form, initially as solution concepts and then as a specific configuration or arrangement of elements, materials and components". However, Murray (2005) also defines product design as "a multi-disciplinary process which usually involves market and technological research, concept design, prototype development, final product development and testing as well as postproduction refinement." We can therefore conclude that technology plays a vital role in the designer's creative

process. Technology facilitates by using software programs more often during the design process, for example, cloud computing, which assists in supporting a paperless environment that encourages eco-friendly surroundings.

Currently, products are determined by their design process which involves “any systems or services enabled by a microprocessor” (K. Goodwin). Intangible goods or services are part of our regular daily experiences represented by the applications on phones, home and office computers, entertainment and communication devices, production equipment and commercial and personal websites. Interestingly, tangible products are usually those aforementioned items that host these applications, such as smartphones, home entertainment, computers and production equipment. In the area of design for shelter, clothing and ergonomic tools, furniture and utensils; the architecture and fashion industry are benefactors of tangible products from industrial buildings to products purchased in brick-and-mortar stores. The New School of Architecture and Design, states that product designers help refine the experience and interface of products while defining the brand and marketing strategy around those products. Newer technologies such as Computer-Aided Design known as CAD, now updated to CAD II, have contributed to creating forms of new designs that may not be possible without new software (Najmuldeen, 2021). This simultaneously "saves time, energy and resources" (Ramoğlu & Coşkun, 2017) during the creative process.

iii. Design Skills in the Industry and Education - Updating Technical skills

New technologies have introduced new fields of graphic and product design where students should possess a variety of skills in preparation for jobs in the design industry and postgraduate specialisation. As undergraduate level students, they either continue their studies or enter the design industry with their bachelor’s degrees. Whichever direction a design student takes, a portfolio is essential. A student portfolio is useful in an academic setting when furthering education

beyond the undergraduate level. The importance of the student's portfolio is to help demonstrate knowledge attained in each class or throughout their school career. Despite the efforts a student might put into their portfolio, it should best set them apart from other applicants whether in a professional or academic setting. Their portfolio should be a representation of their design skills combined with creative thinking under the chosen field. Regardless of whether a student continues their studies in this ever-growing field of graphic or product design, there are certain technical and computer skills needed to develop and be demonstrated in their portfolio to meet the entrance requirements in the program. Students who are applying for a master's in digital media design; a specific field of graphic design, must meet certain requirements in the application process. The University of Birkbeck, Central London, for example, requires applicants to complete a two-part admissions exercise that asks you to outline your experience in digital media and demonstrate your ability to develop a simple HTML web page. The application process or requirements are likely to vary depending on where the student decided to apply for postgraduate studies. However, the previous requirements highlight the issue of some students' inability to apply for the postgraduate programs. The unavailability of modules in the bachelor programs, limits students from qualifying for the postgraduate programs as reflected in their portfolio.

In the digital era, new jobs are formed within the graphic and product design field where certain technical skills should be evident in their portfolio. A student's professional portfolio should demonstrate their skills, background, accomplishments and experiences, providing tangible evidence that they are qualified for that specific job. For example, when applying for an industrial design job, it should be evident that they are knowledgeable in digital tools for 3D modelling, graphic design, and rendering for the application in the current industry (Yang, You, & Chen, 2005). According to the Design Council, in the fourth industrial revolution, new jobs require a

particular type of skill and mindset to work with machines. They need to act as the translator between AI and human intelligence. The advancement of technologies has introduced many other aspects of product and graphic design that should be introduced to future designers. Design Council quotes from the World Economic Forum (WEF) with agreement that:

" Innovative technology adoption drives business growth, resulting in job creation and augmentation of existing jobs provided it can fully leverage the talents of a motivated and agile workforce who are equipped with future proof skills to take advantage of new opportunities through continuous retraining and upskilling."

According to the U.S Bureau of Labour Statistics in 2021, they listed a few similar occupations under the graphic design field such as Web developer, Digital designer, Industrial designer, Special effects artists and animators, Drafters, Art Directors, Craft and Fine Artists and Desktop publishers. For product design, the U.S Bureau of Labour Statistics in 2021, also listed a few jobs in this field such as Art Director, Interior Designer, Architect, Desktop Publisher, Graphic designer, Industrial engineer and Software developer, Quality Assurance, and testers. The New School of Architecture and Design states the possibility of becoming a User Experience Designer (UX Designer) and User Interface Designer (UI Designer). There are endless other design occupations that branch off the graphic and product design field.

These technical skills are deemed most relevant when applying for graduate school and introduce newer opportunities for career growth. These include:

a. Coding

Coding is one of the foundational elements of our digital engagements that includes computers, smartphones, and tablets. Coding is an increasingly valuable skill set. In design, coding is also referred to as 'Creative coding' (M. Ball, 2019); it is the intersection between art, technology and design converging. The goal of creative coding is to utilise code, software, and

computational processes to express or create art. Although Creative Coding is generally thought of as more aesthetic than functional, it is becoming more common in advertising, branding, and the wider design industry (M. Ball, 2019). Design students should gain a foundational understanding of the 'front end', the presentation layer driven by HTML (Hypertext Markup Language) as well as CSS, which describes the component styles in an HTML document (J. Vieira). The School of Interactive Arts and Technology lists software useful for coding such as Adobe Dreamweaver, JavaScript, and other scripting languages.

Coding helps students understand the materials used to bring designs to life through web, mobile applications, products or services that include technological components (Interaction Design Foundation) in preparation for future design roles. In the research paper “**Coding as Craft: Evolving Standards in Graphic Design Teaching and Practice**” Sherry Saunders, discusses the process of developing HTML/CSS for the typography course. Students are required to make an online menu for a restaurant of their choice which was inspired by tutorials created by Jessica Hische and Russ Maschmeyer. She goes on to say that, by maintaining a quality graphic design course in digital education by manipulating assignments to include web and coding skills of which many institutions might be lacking (Sherry Saunders). Saunders further explains in her research paper that her reasons for considering the addition of more coding to her graphic curriculum were based on the current trends in the job market. In the 21st century, coding has become a “niche skill” (M. Ball, 2019) that certainly boosts your career development. Coding skills have been adapted and applied in many areas of the creative industries, including Graphic design, Product design, and Media production (M. Ball, 2019). Some companies seek out what we call “unicorns” (J. Vieira) – designers who can design and code, where they pay well for individuals with such skills (M. Ball, 2019).

b. Motion Graphics- Adobe After Effects

Adobe After Effects is a software tool for animation and videos that are used to add elements to moving pictures and animations (Design Shack). A similar statement by New York Film Academy (2019) indicates that Adobe After Effects is a software used for digital visual effects, motion graphics, and application compositing. It is considered one of the top 6 tools graphics designers should know how to use. Adobe After Effects gives graphic and digital product designers within that field the ability to go the extra mile by adding motion to their static work as it relates to interaction and interface design. Currently, motion graphics work efficiently with apps and especially websites (S. Robaszkiewicz, 2021) which has increased exponentially due to the pandemic where everything has been digitised. It has become popularised through the internet where it is often evident in our daily interfaces for instance "through screen transitions, a subtle micro-interaction, or an icon animation" (S. Robaszkiewicz, 2021). As explained by Robaszkiewicz (2021), motion graphics are often used for enhancing identity benefits, such as animations in apps or websites to enhance the user experience by bringing the focus of the core values closer to the user.

Adobe After Effects is used by many creative designers for films, television and video for websites and social media. According to the University of Sydney, it states that this specialised software is utilised by video editors, artists, graphic designers, digital designers, video producers, motion graphic designers and animators all over the world. Due to its compatibility with other Adobe software, Adobe After Effects is a useful tool. The foundation software such as Photoshop and Illustrator plus any other Adobe software work seamlessly together with Adobe After Effects (Design Shack) which can make life easier for designers and especially design students when transferring their files from each program.

c. Computer-aided Design

Computer-Aided Design (CAD) is a method of mock-up designs in two-dimensional and three-dimensional simulations. According to The Design and Technology Association, CAD software allows rapid modelling of ideas in 3D and 2D, in conjunction with other modelling methods such as sketching or soft construction methods. Using computer-aided design tools, one can automate and intelligently design graphics by building systems and offering auxiliary tools (Ye Jia, 2021). This application software eases the creative process of designing products before manufacturing and creating graphics that “reach higher visual aesthetic requirements” (Ye Jia, 2021).

In a student’s design and technology work, it was advised that they have some introduction to Computer-Aided design as early as possible. Frequently, step-by-step tutorials are used to aid in students' utilisation of the software. However, the Design and Technology Association suggests that students are unaware of the nature of the action when operating the software. Often, institutions do not introduce students to CAD, so they are self-taught at their own pace, which leaves students depending on tutorials, as a result becoming only familiar with the functional side of the tool. They stressed the importance of allowing students to experience the real benefits of CAD/CAM and to spend little time watching tutorials just to master the software, but also to be supported and enhanced in their designing and making capabilities (Design Technology Association, 2013)

d. Project Management

Project Management is “the application of processes, methods, skills, knowledge and experience to achieve specific project objectives according to the project acceptance criteria within agreed parameters” (APM, 7th). To complete a specific project requires the application of knowledge,

skills, tools, and techniques. Students learn Project Management skills and strategies through practice and experience across a wide range of projects, becoming independent and interdependent in the process (CDEST). Students will also learn how to manage their time effectively, think critically and creatively, collaborate effectively in teams, and prepare for the constantly changing workforce of the future (CDEST). As outlined by the Commonwealth Department of Education, Science and Training, Project Management teaches students how to plan for sustainable use of resources when undertaking projects. It also encourages students to consider moral and ethical issues and their own personal and social beliefs. To manage design projects, this skill is essential when developing upcoming innovations, products, services, and brands with creative designs. This is imperative to increase the quality and the success of an organisation.

THE DESIGN

i. The Analysis of the Bachelor of Arts Visual Arts (Special) Program

The 3-year curriculum offered by DCFA for design is geared towards a variety of courses that touches upon different disciplines such as graphic design, product design, service design as well as history and culture of art and design. Undergraduates are supported by a variety of compulsory and foundational courses and electives. Students must complete the Bachelor of arts program with a minimum of 54 credits (18 courses). They are required to register for one mandatory foundation course and 3 compulsory courses. Within the 3-year program, students also have the option of choosing any of the listed electives depending on which one would be beneficial for their specific discipline.

In a students' first year, the program, DCFA provides a melting pot of courses such as Information and Communications Technology (ICT) and Design Foundation, Drawing, Three-Dimensional Design, History of Art, Architecture and Design in the Caribbean part one and two as well as Colours and Materials. The following is a list of level 1 elective courses provided: Drawing Introductory Techniques, Ceramics: Hand building and Wheel Throwing, Ceramics: Mould Making and Slip Casting, Photography, Visual Arts and Communication Studies, Introduction to Art Education: Philosophy and Practice of the Art Teacher I and Introduction to Art parts one and two.

In the second year of the Bachelor of Arts Visual Arts (Special) program, students are allowed to make an important decision of choosing whether to major in Design or Fine Arts at the undergraduate level. As students begin their learning journey to become designers, they explore different aspects of design. They are taught the foundation in digital software in graphic design, introducing Adobe Creative Suite such as Adobe Photoshop, Adobe Illustrator and Adobe

InDesign referred to as Design 1. Applying these ICT skills while reinforcing the knowledge of graphic design principles and design thinking for problem-solving. In Design Laboratory 1, this course focuses on, prototyping, sketching, and conducting intensive design research. These are all encouraged, leading to the fabrication of sustainable products and packaging. The next mandatory course is Design 2. This explores Service design where students use their design and creative thinking skills to solve an issue within a chosen community. Design Laboratory 2 covers graphic design where students learn to critique graphic work with reasoning, to design and print as well as effectively communicate with graphics. At level 2, Critical Reading of Caribbean of Art and Culture parts one and two, which are incorporated into the curriculum as a compulsory course for all visual art students.

In year three, students will take three compulsory courses, including Design 3, Design Laboratory 3 and Design Research Seminar. They will build on their two years of art and design to present and brand real creative projects while exploring a topic of their choice in their final year. A few levels 2 and 3 electives that would usually be offered in the second and third year, were not available due to the pandemic. There were four courses offered: Costume Fabrication parts one and two, Idea of Contemporary Art parts one and two, Ideas of Design Culture parts one and two, and Film and Video parts one and two. Based on unpredictable circumstances due to Covid-19, the resilience and the vulnerability of the program may be revealed, which we would soon discover in Chapter 4. **See Figure 2a.**

Having discussed the most in-demand technical skills in the digital era in Chapter 1 and evaluated the current BA Visual Arts curriculum, there is the need to develop a strategy for integrating these skills into the BA program.

ii. The New DCFA Design

In 1906, the Italian economist, Vilfredo Pareto, observed that 20% of the pea plants in his garden generated 80% of the healthy pea pods. This led him to think about uneven distribution. Based on this, he then made the next observation that 80% of the wealth in Italy came from 20% of the population. This discovery formed a universal phenomenon called Pareto's Law or principle; 80% of the results would come from 20% of the action.

This is a rule that many apply in life, whether in time management or education. Teachers have used this rule in education to help teach smarter and not harder. Edilberto C. Cruz, PhD has stated "20% of their teaching delivers 80% of the information; 20% of their lesson plans deliver 80% of the most important information; 20% of their teaching will be remembered, 80% will be forgotten". In light of Cruz's use of Pareto's principle to improve his teaching technique, I believe applying the 80/20 principle would increase the effectiveness and efficiency of the BA Visual Arts (Special) curriculum. This will help catalyse the program's process of adapting to design and technology in the changing era.

A design program formed based on this principle would strategically align the curriculum to effectively provide an art and design foundation forging creative innovative thinking, handcraft and fulfilling digital media requirements. If the model can make a 20% change to the curriculum - whether it be adjusting the order, minimising courses, introducing one in-demand technical skill or replacing an elective course with a new course – the result can be an 80% positive impact by bringing the curriculum into the 21st Century. Applying Pareto's Principle will support the development of "**The New DCFA Design**". This model can achieve balance and benefit future students, regardless of background who would like to apply for postgraduate studies or enter the design industry.

20% change can have an 80% positive impact

20% change can resolve 80% of the problem

The New DCFA model (**figure 2a**) would keep within the requirements of the Visual Arts Special program which has a minimum of 54 credits (18 courses). This model can still allow part-time students to register for up to six courses each academic year - three (3) per semester. Full-time students can register for 10–12 courses per academic year; 5-6 per semester. Courses would still be available to all students. In this model, all electives and foundation courses that are presently provided by the department will remain the same. There are no alterations or changes made unless stated so below. This model can fit within any circumstances; the Covid-19 period, and post-Covid-19 period.

Year 1 - Building an Art and Design foundation

In year 1, students are building their knowledge and skills in art and design as well as developing their ability to read critically. There will be three mandatory courses available in the first semester: History of art, Architecture and Design in the Caribbean, ICT and Design Foundation, and Drawing. Under the new model, the History of Art, Architecture, and Design will be taught as one course instead of two parts as it is in the current curriculum. The course online for the ICT and Design Foundation will be modified. This course will provide the foundation in digital software, introducing Adobe Creative Suite such as Adobe Photoshop, Adobe Illustrator and Adobe InDesign. These are basic ICT skills all art students should possess. In semester 2, students must take Critical Readings in Caribbean Art and Culture, three-dimensional design, and colour and materials. Critical Readings in Caribbean Art and Culture, a two-part course at level 2

taken in year 2, will be a level 1 standard course in the new model since it is a foundation that all DCFA students should possess.

Year 2- Discovering your strengths

In year 2, students are applying and building on the knowledge they have learnt in year 1. There would be three compulsory courses in semester 1, however the new model would have some changes. The model would introduce a new course and place an elective course as a mandatory course. The new course that this model would introduce is Project Management which would be a yearlong course that is a replacement for Critical Reading of Caribbean Arts and culture that is positioned in year 1. This course would help prepare students for year 3 with their final creative projects while simultaneously introducing a new technical skill that future Art and Design students should gain. In the current curriculum, Design 1 introduces basic ICT skills. However, in the new model, the Design 1 course is placed as an ICT and Design Foundation. Therefore, to fill in the gap of a missing compulsory course in semester 1, the new DCFA model would be promoting the Film and Video elective as a mandatory course which we will now refer to as Design 1. This opens the opportunity for introducing Motion Graphics, a new in-demand technical skill where students will learn how to use new digital software called Adobe After Effects. This will be a new objective in the course outline for Film and Video. The Film and Video course would still likewise remain as an elective to facilitate for students who are in other majors. The use of Adobe After Effect would not be mandatory but replaced by substitute programs. Thus, the three mandatory courses for semester 1 are Design Laboratory 1, Design 1 (Film and Video) and Project Management. In the 2nd semester, there would be a repeat of 3 compulsory courses: Design Laboratory 2, Design 2 and Project Management which is the continuation of a yearlong course. Design Laboratory 2 would be revised and incorporate a new objective, such as learning the basics of HTML, CSS, and

JavaScript that bridges the gap between graphic design and coding. This helps in introducing a niche skill into the curriculum.

Year 3- Be creative and go all out Final Projects

In Year 3, students are applying what they have learnt in years 1 and 2 into their creative projects. In the final year, students are required to submit 2 projects. The result of these projects would form part of their final year grading. The projects will be as follows: project 1-Design 3 and Design Lab 3 and project 2- Design Research Seminar.

Throughout the journey of this new undergraduate program, students would acquire technological skills, critical thinking skills, art and design theory, project management skills as well as obtain 2 projects that could be presented as a portfolio to help with employment or postgraduate applications. However, with an attempt to implement a new model, certain barriers would be encountered, one of which is resistance to change which would be discussed in more detail in chapter 3.

ADAPTING TO CHANGE

i. Barriers of Change

Fullen Et Al viewed change as a double-edged sword and the description of change varies. Change was defined by a variety of negative and positive terms: either it was fear, and danger, panic; or it was risk-taking, excitement, and energising. In any innovation of making a change within an institution, there would be certain barriers that would be encountered when adapting to a new model. One is resistance to change.

a. Resistance to change barrier

During the process of developing and modifying any curriculum, there would always be the issue of teachers' and institutes' openness to change. Resistance to change is caused by many variables. The first reason is the fear of the unknown (Dr A. Al Fadala, 2015). Oftentimes, teachers and institutions can be hesitant and stick to what is familiar. This can prevent students from learning any new material. The second reason is the lack of information (Dr A. Al Fadala, 2015). If the head of an institution is unaware of the benefits of the changes necessary and if there is no action plan for the changes, they can be resistant to change. The third reason is the threat of position. Teachers may need new skills to cope with the change. If there is no system in place that will assist teachers through this transition to meet the requirements of the new curriculum, the transition to digital times will not take place. This can prevent the program and students from continuously improving.

ii. **Change Management in Education**

To facilitate teachers' transition to "The New DCFA Design", the Spiral model of educational change (Figure 3a) can be used to overcome these barriers of change. Holmyard combines Fullen and Guskey et al ideas of educational change to develop this spiral model. The Spiral model is the implementation of small-scale changes supported by professional development that instils an understanding of the process as well as the appropriate skills. These small scale changes can take place, where teachers are provided with professional training that can lead to opportunities to help support the innovation change. This can allow teachers to comfortably and confidently adapt to the change by re-evaluating the course outlines and their methods of teaching. Teachers seeing a visible change from students' learning outcomes through their efforts, would impact their attitudes and beliefs. Not only would teachers' attitudes and beliefs alter but their learning curve would rise. The more teachers recognize that their efforts in training and developing skills over time have a positive impact on students, the more accepting they would be of the curriculum change (the tipping point of the spiral).

THE MODEL

i. Results: Curriculum Assessment by DCFA Students and Teachers

The first survey was distributed electronically to a sample of 9 design students of class 2022 in the BA Visual Art (special) program. Questions were asked to gain a better understanding of their views regarding the current design curriculum. They were given two weeks to fill out the survey. However, out of the 9 students only 5 responded. Overall, the response rate was satisfactory. Despite this, the collected data was useful. This survey consisted of 11 questions. **See Appendix A.**

Based on the data collected, 60% of design students stated that the BA Visual Arts met their expectations in preparation for becoming a designer, however, 40% of students did not approve. From this same sample of students, it was asked whether they thought the program was adapting to the change of modern technology; 80% agreed that the program had adapted, however, 20% disagreed. A list of technical skills was provided, and students were given the option of listing a skill they would have liked to experience in the program. Forty percent of students chose to code, 80% of students chose Motion Graphics, 40% chose Computer-Aided Design and 60% chose Project Management. A new skill was listed where a student wanted to go more in-depth in branding where Typography was involved. The survey asked the sample of students whether they thought the program required improvement. Sixty percent of students strongly agreed and 40% agreed.

For the next question, different experiences were provided for students that would make the program even better. Eighty percent of respondents wished they could use Motion Graphics for their logos and caricatures and learn about Design Management. Students also felt that Design should be separate from Fine Arts. Sixty percent of students said they wanted to learn HTML and

CSS so that they could learn a new language or create web pages for their designs, be introduced to workshops to enhance Adobe skills and be allowed to apply for a minor outside the Humanities and Education department. They likewise liked the idea of introducing mandatory literature covering art and design and to balance handcraft and technical skills. Forty percent of students would prefer less technology and more hands-on. Twenty percent of students expressed a desire to have their creative ideas put into practice, as well as learn about STEM and art and design. All students within the sample believed that having more electives would make the program experience better. Even though students choose different experiences that would improve the curriculum, they also stated what benefited them the most as design students. Eighty percent of students declared that the current curriculum helped them develop their ICT skills in Adobe and substitute programs while 20% of students stated that it helped improve their research skills.

In the second part of the survey, various questions were asked concerning their plans after graduating from The University of the West Indies (UWI) and how the program had prepared them for their careers after undergraduate study. First, students were asked what their plans are after graduation. Twenty percent wanted to further their studies and apply for postgraduate courses, 40% wanted to work within the design industry and 80% wanted to be an entrepreneur or to freelance. This was an open-ended question which allowed students to enter their plans if none of the above applied. A student stated that after graduating, they would like to do self-taught further studies. The survey then asked the sample if they had begun building their design portfolio: 60% stated no and 40% stated yes. The students were then asked to select disciplines they are thinking of exploring. Eighty percent of students selected Digital media and Graphic Design and 20% selected Video Game design, Fashion design, Product design and User Experience design or Interface design. Students were given the option to list a discipline, not mentioned in the list that

they wished to explore. This turned out to be Illustration. When asked whether their portfolio was suitable for acceptance, into the design industry or a master's program based on the discipline previously selected. Sixty percent of students said no; 40% of students said yes. To conclude the survey, the sample students were asked whether the program had prepared them for entry into the industry or postgraduate studies. Sixty percent of students stated that the program did not prepare them, whereas 40% of students had a more positive outlook.

The second survey was distributed electronically to a sample of 5 faculty members within the BA Visual Art (special) program. Questions were asked to gain a better understanding of their views regarding the current design curriculum. This survey consisted of four questions. **See Appendix B.**

Teachers were asked whether Covid-19 impacted the quality of their deliverables and all agreed. They were asked whether the program is adapting to modern technology and all lectures agreed. A few technical skills were provided such as Coding, Motion Graphics, Computer-Aided Design and Project Management and were asked for their opinion to list the skills in the order of importance down to the least important. A teacher stated that Project management was most important, followed by motion graphics, coding and the least important skill was Computer-Aided Design. One lecturer opined that the question was subjective and that the importance of each of the skills depended on who was being addressed. For the final question, all agreed that the DCFA design curriculum is best described as “a curriculum that provides a variety of courses that encourages creative and critical innovative thinking, technical and hand-craft skills”.

ii. Discussion on Students' and Teachers' Views

Based on the results from the survey both students and teachers indicated that the current program was indeed reflexive to the changes needed for the transition of the program into the digital era. Yet the answers given to the following questions were conflicting with their initial response. These answers indicated that they were open to new technologies. The two popular disciplines that were selected by students were Graphic Design and Digital Media. While few students planned to continue their postgraduate studies, the majority wanted to freelance and work in the design industry. This strongly suggests that there is a need for skills in Project Management and Motion Graphics in the program shown in chapter 1. This was confirmed by a teacher's statement that Project Management and Motion Graphics were the top two most important technical skills that students needed. Project Management gives students an insight of Design Management that will assist them with their endeavours in entrepreneurship. For Motion Graphics, it would be useful for students who show interest in Illustration. To the previously mentioned, this would meet the desires of most design students. It was observed that fewer students showed interest in Coding, as compared to most who liked acquiring this highly marketable skill set. However, a teacher did not list coding as the most important. This answer could be interpreted to mean that students need not be a professional coder, but they do need to know the basic language if placed in a multidisciplinary team or environment. While Film and video, an elective course mentioned in Chapter 2, currently allows students to explore Creative Coding, there is still a need to bridge the gap between Graphic Design and Coding. This can give students the opportunity of learning how to design webpages. Therefore, we cannot dismiss this notion that coding is a vital technical skill, especially for students exploring Graphic Design and Digital Media. Coding is also involved in disciplines such as Video Game design, UX/UI design, and Product design. Furthermore, most

students showed an appreciation for Computer-aided Design. Students did not view CAD as one of their priority tools despite showing an appreciation for the software. However, this tool would still be useful for the Design Laboratory 1, a course mentioned in Chapter 2.

Students felt that the current program had not prepared them for entry into neither quality postgraduate courses nor to be cutting edge designers. By reviewing the various disciplines and the analysis of the current curriculum, it can be concluded that the DCFA design program may not be providing ample opportunity for students to grow in their respective fields. The assumption is that students would take advantage of the current tools provided for them, to progress academically and as entrepreneurs. Workshops or more electives in design and Adobe would provide tools for professional portfolios because currently students are unable to create this necessary asset. The DCFA can also allow students to do a minor outside of their department. This may potentially fulfil that satisfaction that students might be longing for that can satiate their needs and benefit growth within their discipline. For instance, design students can do a minor in Computer Science, Information Technology, Mathematics or Business Management especially if some might have the Caribbean Advanced Proficiency Examination (CAPE) qualification.

Unquestionably, Covid-19 was a factor in bringing to the forefront the need for the advancement of technologies in the program to improve its quality and post-graduation benefits. The pandemic caused the omission of electives, prevented students from learning how to bring their creative ideas into reality, and – in the opinion of lectures - affected the quality of their deliverables. On the other hand, there was also the possibility of students becoming overwhelmed by the online classes, leading to a desire for less technology and hands-on work to make the experience better.

Still, the nature of the pandemic meant that certain handcraft skills, such as the ceramics electives were troublesome to conduct when the campus was closed. The decrease in the number of electives caused all students to want more electives. By clarifying the description of the DCFA design program as "a curriculum that provides a variety of courses that encourages creative and critical innovative thinking, technical and hand-craft skills", it can be accepted that the new curriculum design is suitable and can be beneficial for future students. As a result, the New DCFA Design has the potential to be successful, since it meets the needs of introducing new skills, balancing the art and design foundation, encouraging creative innovation, and compromising the practical skills.

a. Encouraging Change Management

While it is great to design a new model for the design curriculum of DCFA, it can only be made a reality through openness to change. This change can only start from the top. However, for this change to start from top leadership, the awareness that there is a need for updated technological skills must first be agreed and promoted by the art and design lecturers. This innovation of change of the program would only take place if the barriers preventing curriculum implementation are overcome. Unfortunately, a certain reluctance to review the current state of the curriculum and explore areas of improvement is evident in the faculty. The survey was distributed to five teachers to collect their thoughts on the school's position on adapting to design and technology within this digital era. Out of the five faculty members, only two responded. Of the two faculty responses to the survey, the feedback of one focused on the apparent subjectivity of the questionnaire. This can be viewed as the member's unwillingness to be open to change and suggests a lack of knowledge on the subject.

Until faculty members' attitudes, beliefs and learning curve gradually change towards supporting "The New DCFA Design" and are more accepting to change; only at that point can we say this design is transformed into a large-scale innovation, embedded into the school life (the tipping point of the spiral – see Figure 3a).

CONCLUSION

While the Department of Creative and Festival of Arts (DCFA) continuously strives and aims to offer a variety of courses at the highest level of academics for the Art and Design students, it was apparent that the academic programme itself is not flexible and responsive to support the need for the transition of the program into the digital era.

Therefore, the need for updating the technological skills is imperative for the DCFA's Bachelor of Arts Visual Arts (Special) program, due to the increasing demand for current employable technical skills in the design industry and postgraduate programs. The advancement of technologies created new in demand technical skills which has formed new disciplines in the design world and as a result new job opportunity. Some of these skills include but are not limited to are Coding, Motion Graphics, Computer-Aided Design, and Project Management. To fulfil the objectives previously mentioned, the program must now adapt by acquiring the new technological skills to support students' creative thinking and focus on implementation. This path led to a thorough analysis of the current curriculum, by means of applying the Pareto's 80/20 principle as a design strategy, resulting in "The New DCFA design". In attempting to design a curriculum to be transformed into a model, certain obstacles had to be addressed that might prevent change. One such barrier is resistance to change. Change management techniques were found to be an effective way to overcome this obstacle. Future research into the remodelling of the DCFA curriculum to accommodate for the digital times should focus on ways DCFA faculty members can bring awareness to top leaderships and stakeholders through methods of motivational interviewing, a next strategy of change management. Furthermore, the idea of a new curriculum design was intended to form a balance between art and design foundation, creative, innovative thinking, handcraft and up to date digital media requirements.

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APPENDIX A

A case study of the BA Visual Arts (Special) program: The adapting of design and technology to the change of era. – Student's Survey

My name is Gabriella Serville and I am a year 3 design student of the BA Visual Arts (Special) Program. I am currently doing a case study on the BA Visual Arts (Special) Program for my final year thesis paper.

I am conducting a survey, to gain a better understanding of your views regarding the DCFA design program. The completion of this survey can assist me in analysing your thoughts and concluding regarding the program's position on adapting to design and technology in the digital age.

Potentially, your responses could help me ignite a small change for future design students and the DCFA curriculum. Thank you, in advance for taking the time to complete this survey. My thesis paper would be greatly benefited by your anonymous and honest responses.

* Required

1. Did the BA Visual Arts program meet your expectation to help develop you as a designer? *

Mark only one oval.

- Strongly disagree
- disagree
- agree
- strongly agree

2. Would you say the program is adapting to the change of modern technology? *

*

Mark only one oval.

- strongly disagree
- disagree
- agree
- strongly agree

3. What technical skills you would like DCFA to provide in the program. *

Check all that apply.

- Coding
- Motion graphics
- CAD- Computer-aided designProject
- management

Other: _____

4. Do you think there is a need for improvement in what is provided in the curriculum? *

Mark only one oval.

- strongly disagree
- disagree
- agree
- strongly agree

5. Please select which of the following you would like to experience in the program that would make it even better? (Unlimited options are allowed) *

Check all that apply.

- motion graphics- adding motion to my work like logos or caricatures
- learn HTML or CSS to build a website for your design or to know another languagelearn about
- how to execute your creative ideas into reality
- start introducing workshops to enhance my adobe skillsmore electives
- allowed to start a minor outside of your departmentless
- technology more hands on work
- design management- tips on starting a small business with your workless hands
- on more technology
- Only creative innovative thinking is needed
- Reading specific art and design books should be mandatoryintroduce
- more workshops outside of the school
- introduce STEM into art and Design
- Design should be a separate program from fine arts
- creative thinking with a balance between hands on and technical skillsintroduce
- design workshops

Other: _____

6. What parts of the program aided you the most as a design student? *

Mark only one oval.

- encouraged creative thinking
- developed my ICT skills in adobe or substitute programs (Eg. illustrator, photoshop, InDesign)
- became better with my hands on skills (Eg. painting, drawing, ceramics)critical
- reading and thinking benefited me in my work
- My ability to do research for projects has improved Other: __
-

Life After DCFA

You have reached the 2nd section of the survey. I would like to get a better idea of your plans as a designer after UWI. Reminder: Your responses are anonymous; your honest opinions would be greatly appreciated.

7. What are your potential plans after graduating from UWI? If you selected none of the above, please select other and state your plan. (Unlimited options are allowed) *

Check all that apply.

- Doing your masters/ postgraduate Getting a
- job in the design industry Freelance /
- Entrepreneur
- none of the above Other:
- _____

8. Have you started building your design portfolio? *

Mark only one oval.

- yes
- No

9. what discipline are you thinking of exploring? (Unlimited options are allowed) *

Check all that apply.

- fashion design digital
- media video game
- design product design
- graphic design Service
- design
- User Experience Design/ User Interface Design Other:
- _____

10. Based on the discipline u have chosen above, do you think your portfolio is suitable enough to apply for jobs or for masters? *

Mark only one oval.

- yes
- No

11. Do you think the program has prepared you to enter the design industry or masters within your discipline? *

Mark only one oval.

- strongly
- disagree
- agree
- strongly
- agree

APPENDIX B

A case study of the BA Visual Arts (Special) program: The adapting of design and technology to the change of era.

My name is Gabriella Serville and I am a year 3 design student of the BA Visual Arts (Special) Program. I am currently doing a case study on the BA Visual Arts (Special) Program for my final year thesis paper.

I am conducting a survey, to gain a better understanding of your views regarding the DCFA design program. The completion of this survey can assist me in analysing your thoughts and concluding regarding the program's position on adapting to design and technology in the digital age.

Potentially, your responses could help me ignite a small change for future design students and the DCFA design curriculum. Thank you, in advance for taking the time to complete this survey. My thesis paper would be greatly benefited by your anonymous and honest responses.

*** Required**

1. Did covid-19 impact on the quality of your deliverables? *

Mark only one oval.

- yesno
- not quite
- none of the above

2. Would you agree the program is adapting to the change of modern technology? *

Mark only one oval.

- strongly disagree
- disagree
- agree
- strongly agree

3. List the technical skills in order based on the level of importance. (First is most important- last is least important) 1. Coding 2. Motion graphics 3. Auto CAD 4. Project Management. For example: 2, 3, 4, 1 *

4. How would you best describe the DCFA curriculum for design students? *

Mark only one oval.

- A curriculum that only encourages Innovative and Design thinking
- A curriculum that encourages innovative and Creative thinking with handcraft skills A
- curriculum that provides a variety of courses that encourages creative and critical innovative thinking, technical and hand craft skillsA
- curriculum that Designs for sustainability All of
- the above
- Other: _____