

**An exploration of the applicability of graphic facilitation for ideation in tertiary institutions in South Africa: An action research study of second-year graphic design students at Durban University of Technology**

Submitted in fulfilment of the requirements for the Masters of Applied Arts: Graphic Design,  
in the Department of Visual Communication  
at the Durban University of Technology

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## **Declaration**

This thesis is the original work of the author and has not been submitted for a degree to any other University. All other sources used or quoted have been indicated and acknowledged using complete references.

Signature:

Date: 24/02/2023

As the candidate's supervisor, I have approved this thesis for submission.

Signature

Date:

Piers Carey

Signature:

Date:

Dr Lockias Chitanana

## Abstract

This study investigated how graphic facilitation could be applied in a tertiary graphic design setting to help students improve their ideation process. Graphic facilitation is a technique used to rapidly develop and capture innovative ideas or solve problems amongst groups in a workshop. The study aimed to develop and recommend a more successful ideation process that could be adopted by second-year graphic design students in order to reduce cases of plagiarism.

The study drew on a theoretical framework that combined the Social Constructivism theory (Zone of Proximal Development, scaffolding), the Emmert and Donaghy communication model, Petty's model of creativity and the associative theory of creativity.

A qualitative action research methodology was employed within an interpretive paradigm. Data was gathered by means of semi-structured interviews and observation of graphic design students and lecturing staff at a graphic design department in a South African tertiary institution. The results of each cycle informed the following cycle. The initial cycle examined previous applications of graphic facilitation, with a pilot study simultaneously conducted on how students are currently ideating their projects, and pre-testing of the interview questions. Cycle 2 consisted of a graphic facilitation workshop informed by the findings of the initial cycle; and cycle 3 was an iteration of cycle 2, but refined based on the findings of that cycle. The inconclusive results highlight students' lack of comprehension of graphic design terminology, and hence non-development of critical thinking.

Despite the research constraints imposed by the COVID-19 pandemic in 2020, some students improved their ideation process by enhancing their critical thinking. This suggests that graphic facilitation could be adopted to enable students to be less prone to plagiarism.

**Keywords:** Graphic facilitation, action research, interpretive paradigm, Social Constructivism theory, Emmert/Donaghy model, Semiotics, Petty's model of creativity, associative theory of creativity

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## **Dedication**

To God my father up above for making a way where there seemed no way and helping me to pull through.

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## **List of Acronyms**

CL	Collaborative learning
COVID-19	Coronavirus disease
DUT	Durban University of Technology
PBL	Problem-based learning
PjBL	Project-based learning
UoT	University of Technology

# **Chapter 1**

## **Introduction to the Study**

### **1.1 Introduction**

This study was conducted by a post-graduate graphic design student who is employed as a tutor at a University of Technology (UoT), and has 11 years' experience in the design industry. The researcher has an interest in the creative process, and ways in which to help students and individuals solve problems originally and creatively, in a way that might minimise or eradicate plagiarism.

The research project examined issues relating to creativity and originality in teaching and learning graphic design, using graphic facilitation as a means of reducing plagiarism by students. Graphic facilitation is a conceptual methodology to capture significant aspects of work and ideas on large sheets of paper making use of visuals, symbols and text (Bailey 2011: 14; Muller, Wildman and White 1993: 64).

The researcher explored general principles in an abnormal year due to the COVID-19 pandemic. Access to campus was limited during the long hard lockdown. However, the researcher was able to persevere and complete the study.

### **1.2 Context of the study**

Worldwide, plagiarism in graphic design courses is a challenge to universities. This study examined how ideation and graphic facilitation could be used as a mechanism to address this issue.

The Merriam-Webster dictionary (2019) defines plagiarism as “the practice of taking someone else's work or ideas and passing them off as one's own”. Visual plagiarism is defined as “copying and assuming the ideas of another artist or entity that owns the rights to their visual material”; in other words, using someone's artwork without citing or referencing it and passing it off as one's own work to others (Meier 2012). In this study the terms plagiarism and visual plagiarism are used interchangeably.

Globally, plagiarism is on the increase. Two winners were disqualified for the Kancil Awards in Malaysia when visual plagiarism was detected in their artworks (Noh *et al.* 2016: 3). In

Rutgers University in the United States (US), 36% of 63 700 undergraduate, and 24% of graduate students admitted to plagiarism (Plagiarism 2017). The University of Surrey in the United Kingdom's (UK) research on the extent of visual plagiarism highlighted that plagiarism was on the increase (Garrett and Robinson 2012). These examples show that plagiarism is an issue in academic institutions across the world. Furthermore, visual plagiarism is on the rise among graphic design students (Noh *et al.* 2016: 2). Universities in the UK have adopted plagiarism checker software in an attempt to curb plagiarism (Garrett and Robinson 2012), as has the Durban University of Technology (DUT). However, literature searches did not indicate that any research has been conducted at DUT on ideation and visual plagiarism. Preliminary interviews with lecturing colleagues prior to commencing this study indicated that they were very concerned about the level of plagiarism at the institution (Knudsen and Zama 2019, personal interviews, 1 June).

Ideation is the process of generating, testing and iterating ideas to identify solutions to problems (Cronje and Appiah 2013: 14). Ideally, graphic design students should be taught ideation, and apply it in their work, thereby executing excellent communication concepts. At the University College, London (UCL) Stanford, Pennsylvania State University, and DUT, graphic design students learn ideation techniques that assist in the completion of their assignments (Cronje and Appiah 2013: 21; Sangelkar *et al.* 2015: 2; DUT 2021:16; Toffah *et al.* 2021: 24). Ideation helps students to solve problems, come up with innovative ideas and set design trends that are followed internationally. Creations (2019), Sugar (2022) both assert that designers struggle with meeting strict deadlines, juggling design and function, blending personal preferences with those of clients, being relevant, standing out, and acquiring new skills. These are the challenges that make creativity a challenge. Hence, in South Africa, few designers have managed to achieve such success. While ideation is known to improve students' creativity, despite its use, cases of plagiarism continue to increase among graphic design students at DUT (Knudsen and Zama 2019, personal interviews, 1 June).

In graphic design, students learn about using the creative process where they construct meaning by applying the process and following through with ideation. de la Harpe (2006: 2) argues that curricula in South African and overseas tertiary institutions "rely on the execution of creative task-oriented practical projects for the development of creativity in students." Hence, when students are given assignments, institutions have tended to focus on the final design or outcome rather than on the process of creativity, that is, originating ideas.

At DUT students must have achieved the following outcomes before graduating from the graphic design programme:

Demonstrate the ability to:

1. Formulate a creative brief, leading to **original Visual Communication Design concepts**, strategies and solutions, **which meet a client's visual communication needs** and encompass audience and context;
2. Conduct research for both academic and applied purposes;
3. Visualise and design an original visual communication campaign that gives expression to the **original concept**, using appropriate levels of current technological competencies for production of the campaign following professional requirements and media specifications;
4. Communicate complex concepts effectively and creatively, via visual, written or oral means, to bring about new understanding; and take into account cultural, social, environmental and **other ethical concerns**.

(Author's emphasis; DUT 2019: 7)

Graphic facilitation is globally recognised as a key problem-solving tool in the business world as it assists teams and organisations to work together to accomplish their goals (Hautop and Ørngreen 2018: 54; Muller, Wildman and White 2013: 64). However, there is a paucity of research on its use to teach graphic design in South Africa. Although graphic facilitation has been employed for problem-solving since 1970 (Hautop and Ørngreen 2018: 59), it should be used hand-in-hand with ideation and graphic design to engage students more fully and improve their learning experience. Doing so would render students less prone to plagiarism, which this study sought to address. Plagiarism can be dealt with in several ways; for this project and context, the researcher proposed ideation using graphic facilitation as a possible solution.

The extent to which any idea or design can be original was investigated as so much information is available in modern times. Dean and Webb (2011 cited by Roetzel 2018) note that information overload kills productivity and dampens creativity. Hence, students that are engrossed in social networks and the Internet may become overwhelmed and conclude that there are "no new ideas, just new methods" in contemporary life (Renard 1999: 38). In turn, this leads to the conclusion that there is no need or point in trying to be original. We read or see

but we do not always notice what our eyes have registered; hence, the acceptable level of influence of another designer's work or another source needs to be investigated (Jones 2014: 59). It is necessary to draw a line between plagiarism and originality as it appears that such boundaries are unclear to graphic design students at DUT. Students' misconceptions of what constitutes plagiarism may result in them falling prey to it. The reasons why this is the case thus need to be investigated.

### **1.3 Research problem**

Preliminary interviews with graphic design lecturers at DUT revealed that they were very concerned about the level of plagiarism in the institution. Students make use of ideation to complete their assignments and this research project investigated the applicability of graphic facilitation for ideation in graphic design in South African tertiary institutions. It aimed to develop and recommend an ideation process that could be adopted by second-year graphic design students in order to reduce cases of plagiarism.

### **1.4 Objectives of the study**

The study's objectives were:

- i. To examine and critique the current ideation processes employed by the participants
- ii. To explore the current use of graphic facilitation
- iii. To examine how important ideation (developing creative new ideas) is to second-year graphic design students
- iv. To test the effectiveness of graphic facilitation in the ideation process with second-year graphic design students
- v. To probe plagiarism in the ideation process through the use of graphic facilitation

### **1.5 Research questions**

The research questions were:

- i. What is the applicability of graphic facilitation in a tertiary graphic design setting?
- ii. What ideation processes are currently employed by the participants?
- iii. To what extent are the participants interested in developing creative new ideas, and aware of how important such ideas are?
- iv. What are the benefits of adopting graphic facilitation?

- v. How can plagiarism be investigated in the ideation process through the use of graphic facilitation?

## **1.6 Research design and methodology**

This study employed a qualitative action research methodology within an interpretive paradigm to explore how graphic facilitation could be applied in a graphic design education setting using action research cycles that included analysing the data and iterating each stage, before executing the next cycle of the research. It engaged graphic design students and lecturers as the research participants. The epistemological assumption underpinning action research is that knowledge is uncertain, and its creation is a collaborative process (McNiff and Whitehead 2011: 30-33). This method assisted in analysing the current situation, and proposing and testing a solution, thus adding to knowledge and seeking to alter both students' and lecturers' circumstances (McNiff and Whitehead 2011: 8-9). The action research aimed to resolve a common problem (plagiarism) through an iterative cyclical approach, which was adjusted at every phase of the cycle, thereby rendering it flexible in developing a working solution to the problem. Action research was also selected in order to improve the graphic design students' ideation practice and to develop a new theory for graphic facilitation and visual communication. It was an appropriate methodology for this study because it helped the researcher to "gain in-depth knowledge" (Dudovskiy 2018) by scrutinising iterating processes for each action cycle in the research project. Even though this study focused on second-year graphic design students. However, third-year graphic design students only took part in cycle 1 because the third years were still technically second year level.

The research made use of three cycles as follows:

- i. Cycle 1
  - a. Observation of how students are currently ideating their projects
  - b. Analysis of the data to establish students' current ideation processes

### **Preparation for Cycle 2**

- a. Review of previous uses of graphic facilitation
- b. Graphic facilitation workshop development
- c. Pretesting interview questions for graphic design lecturers and students
- d. Creation of six ideograms of Petty's creative process

- ii. Cycle 2
  - a. Graphic facilitation workshop 1
  - b. Interviews with graphic design students and lecturers
  - c. Analysis of the data to improve the second workshop

#### Preparation for Cycle 3

- a. Refinement of interview questions for Cycle 3
- b. Emphasis on students' understanding of graphic design terminology and concepts

- iii. Cycle 3
  - a. Graphic facilitation workshop 2 for the cyclic action
  - b. Interviewing graphic design students and lecturers
  - c. Analysis of data and conclusions

The interviews were transcribed, and thematic analysis was used to analyse the data. Thematic analysis is a method that identifies and analyses themes and patterns within data that are interesting and important for addressing the research question (Braun and Clarke 2006: 6). The data was summarised and interpreted by grouping it according to the different themes, assisting to iterate each cycle based on the findings.

### **1.7 Delimitations and limitations**

Delimitation defines the boundaries the researcher set for the research (Simon and Goes 2013: 4). This study focused on second- and third-year graphic design students at DUT. Graphic design problem solving was the main area under scrutiny, strictly focusing on the ideation phase between problem identification and preparation of roughs in the creative process. Ideation, graphic facilitation, creativity, semiotics and visual communication formed the theoretical framework which helped to analyse the data.

Limitations are constraints beyond the researcher's control that can impact the study's results (Simon and Goes 2013: 4). Constraints included the time set aside for interviews, which was dependent on participants' availability and willingness. Non-responsiveness and the unavailability of research participants had a major impact on the outcome of the research.

Additionally, COVID-19 pandemic was the other constraint, and it also extended the duration of research process. The research strategy had to be adapted to unforeseen circumstances.

### 1.8 Structure of the study

The study sought to fill a gap in the literature and assist graphic design students at DUT to be less prone to plagiarism by investigating the impact of graphic facilitation in a learning environment. The dissertation follows the traditional Master's dissertation format (see figure 1.1).

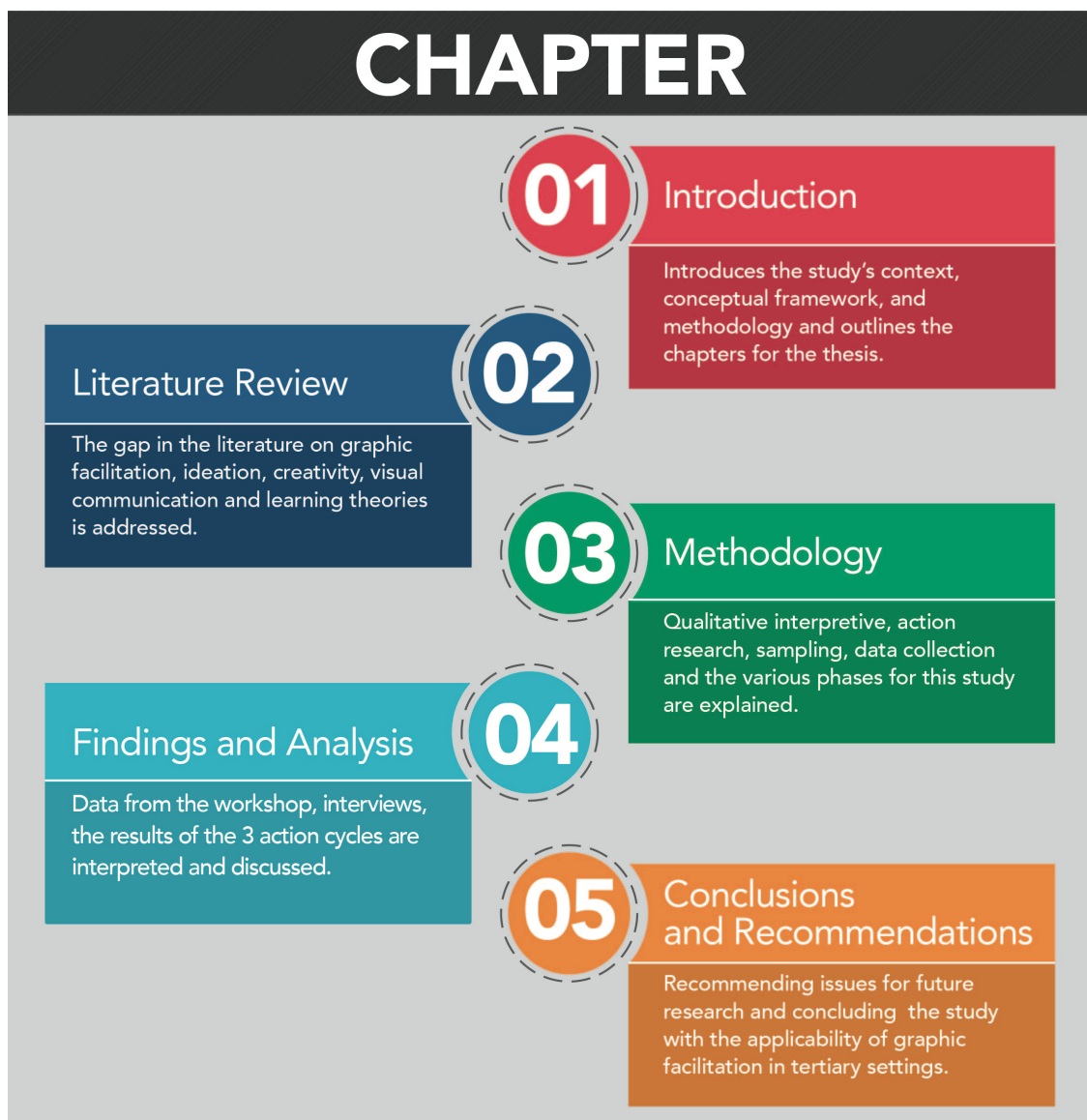


Figure 1.1: Outline of the study (Author's own)



# Chapter 2

## Literature Review

### 2.1 Introduction

The relevant literature was reviewed to elaborate on the primary research question of how graphic facilitation could be applied in a tertiary graphic design setting to assist students with ideation.

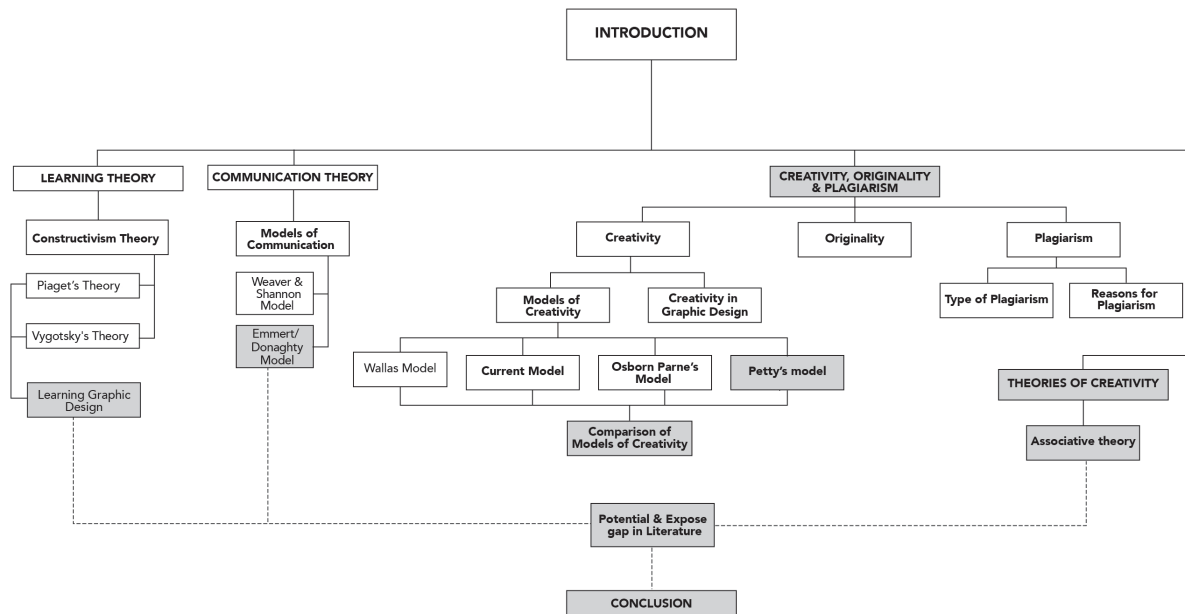


Figure 2.1: Breakdown of the literature review (Author's own)

Ideation, graphic facilitation and plagiarism are the main themes encompassing the primary research question. The literature review is divided into four sections (see figure 2.1 above). First, the literature on learning theory highlights the constructivist theory and learning graphic design. Secondly, communication theory is explored. Thirdly, creativity is defined and elaborated on, focusing on models of creativity, the creative process and creativity in graphic design. The literature on originality and plagiarism is explored, focussing on types of plagiarism, acceptable plagiarism and the reasons why students plagiarise. Fourthly, the literature on theories of creativity is reviewed, with conclusions drawn. The chapter thus identifies a gap in the literature and builds a concise argument for the study.

### 2.2 Learning theory

This section focuses on learning theories and examines how one acquires knowledge. It outlines constructivism, including Piaget's cognitive constructivist theory of learning, and Vygotsky's social constructivism, highlighting scaffolding and the zone of proximal development. Finally,

it focuses on the pedagogical implications for graphic design learning, noting the role of the teacher as the facilitator. It thus exposes the gap in the literature that shaped this study.

The literature on learning theory and learning graphic design highlights the importance of understanding how students construct knowledge, focusing on scaffolding, disequilibrium confusion, the master-apprentice model, and task-oriented practical projects.

Learning theory helps one to understand how learning occurs as a mental process which involves the acquisition and modification of knowledge (Schunk 2012: 4). It changes one's mental representations, behaviour, competencies, strategies, beliefs, and attitudes for the long term, and occurs through experience (Schunk 2012: 4; Ormrod 2012: 4). The "...external conditions are only mentioned when they directly influence or are related to the character of..." the process (Illeris 2018: 86). Understanding how learning occurs helps both the student and the lecturer to accelerate the learning process, and enables the lecturer to create the most suitable environment for the student to easily acquire knowledge.

### **2.2.1 Constructivist theory**

Constructivism as developed by Jean Piaget and Lev Vygotsky is divided into two types, namely, cognitive and social constructivism, both of which examine how people learn and acquire knowledge (Fosnot 2005: 11; Powell and Kalina 2009: 241). The constructivist theory of learning posits that "learners construct knowledge for themselves; each learner individually constructs meaning as they learn" (Hein 1991). Learning occurs when students actively bring together various conceptual elements and use them to construct new meaning. This theory helps to explain how students construct meaning through active interpretation and reorganisation of conceptual schemas, which in turn assists in imparting knowledge effectively (Amineh and Asl 2015: 9). "Constructing meaning is learning" (Hein 1991). Students do not merely regurgitate information, but actively engage with it, questioning and applying it (Dewey 1938 cited in Hein 1991; Ormrod 2012: 154). A constructivist stance can thus help both the teacher and students to gain optimal knowledge from their encounter, while it also assists the student to assimilate and apply the knowledge.

#### **2.2.1.1 Cognitive constructivism**

Piaget defined cognitive constructivism as "ideas (that) are constructed in individuals through a personal process" (Powell and Kalina 2009: 241). His theory of constructivism (1953 cited in Powell and Kalina 2009: 242) proposes that humans do not immediately understand the

information provided to them. They must first construct their meaning, helping them to acquire knowledge. Discovery is the fundamental basis of learning in constructivism. The student actively engages with the new knowledge presented to him/her, assisting him/her to question, and questioning and answering help to construct meaning from and with the concepts at hand.

#### **2.2.1.2 Social constructivism**

Vygotsky developed social constructivism that posits that “ideas ... are constructed through interaction with the teacher and other students” (Powell and Kalina 2009: 241). Social constructivism is based on assumptions about reality and knowledge. Reality is constructed “through human activity” (Amineh and Asl 2015: 13), while assimilation occurs when students apply what they already know to new situations. From the constructivist perspective, the ability to reflect is a major source of knowledge. The key is to encourage students to share their thoughts with both the teacher and other students. Verbalising what they are doing ensures that they examine and apply what they are learning, thereby constructing meaning for themselves (Lipscomb *et al.* 2010: 227; Vygotsky 1962, 1986 cited by Chin and Osborne 2008: 4). This activity is part of scaffolding, a metaphor that describes the temporary support provided by a teacher to enhance students' learning or help them master a task, so that they will be able to tackle similar tasks by themselves at a later stage (Hammond and Gibbons 2005: 9; Lipscomb *et al.* 2010: 227). It systematically builds students' knowledge while they learn. It includes show and tell, asking students to tap into prior knowledge, giving them time to verbally process new ideas, pre-teaching vocabulary, making use of visual aids and pauses, asking questions, pausing, and review (Hammond and Gibbison 2005:9; Alber 2011).

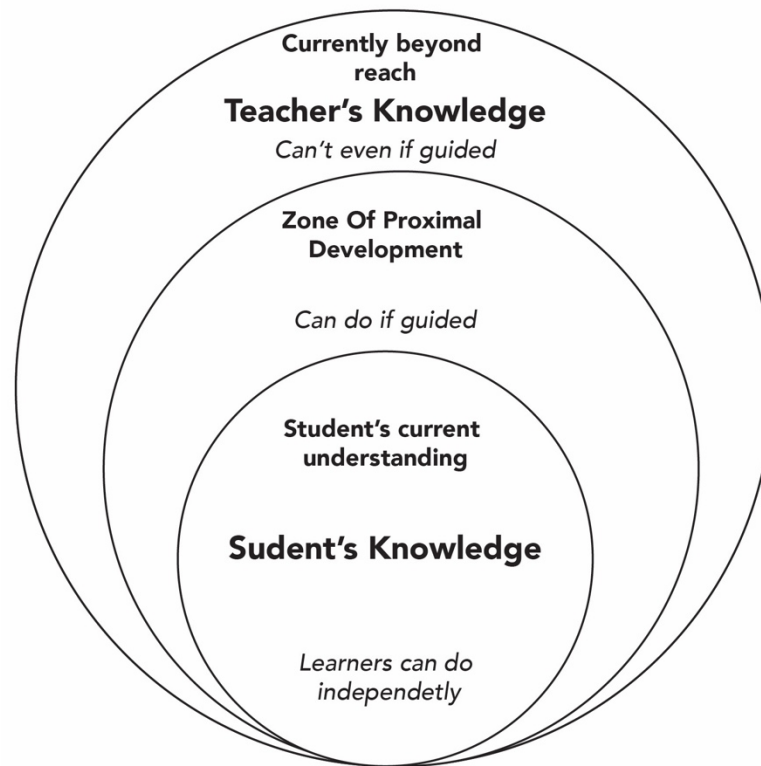


Figure 2.2: Vygotsky's concept of a zone of proximal development (Murphy *et al.* 2015: 283)

The Zone of Proximal Development (zone of potential development) (ZPD) has been widely used to explain how the “more knowledgeable other” (the lecturer) guides students to learn through tasks “...slightly above their ability level” which they can only perform if guided (Yetman 2020). “Proximal” is that which the student is close to mastering but needs assistance and guidance to achieve. This concept was initially used to describe children's development, but it also applies to university students (see figure 2.2) (Murphy *et al.* 2015: 283; Cherry 2019). A student's mental development is determined by clarifying his/her "current developmental level and the zone of proximal development" (Vygotsky 1978: 86). The ZPD is the difference between what a student can do without help and can do with help; it indicates where learning occurs (see figure 2.2). Three critical factors determine the success of a ZPD learning process, namely, the “more knowledgeable other”, social interaction, and supportive activities (scaffolding) (Rodriguez 2014; Cherry 2019).

While students are constructing and assimilating meaning in the ZPD ‘gap’, there is most likely a state of disequilibrium. Powell and Kalina (2009: 243) define disequilibrium as “being uncomfortable when one has to adjust his or her thinking to resolve conflict and become more comfortable”. When one has to “accommodate”, or question preconceived ideas, learning of new knowledge occurs (Fosnot 2005; Powell and Kalina 2009: 243). ‘Errors’, or making mistakes, are also part of the learning process and should be encouraged rather than avoided.

Thus sharing, expressing and failing to come up with ideas in graphic design work helps the student to construct meaning until he/she understands it and can come up with ideas.

Schunk (2012: 238) elaborates that for optimal learning (accommodation), a student should partially understand (assimilate) the information he/she receives while maintaining a conflict. The conflict caused by the new information should not be so small that equilibrium is not triggered.

### **2.2.2 Learning graphic design**

In the initial stage of graphic communication, knowledge of the trade was assimilated by students through helping with their “master’s professional projects”, apprenticeship, and trial and error on the job (Heller 1998: 4,5). Once these skills were mastered the student would apply them and develop his/her work to the master’s skill level. Students learn graphic design by learning by doing, collaborative learning, authentic activities, project-based learning and problem-based learning:

- i. **Learning by doing (trial-and-error learning, discovery)** - Reese (2011: 1) defines this as learning from “experiences directly from one’s actions”. This promotes “...mental sensory contact...” which yields “results of doing”, thereby acquiring knowledge.
- ii. **Collaborative learning (CL)** - Laal and Laal (2012: 491) describe collaborative learning as several students working collectively “...to solve a problem, complete a task or create a product” in an educational setting, thereby learning from the whole exercise. It challenges students to see things from other people’s perspective and to support their ideas when questioned.
- iii. **Authentic learning activities** occurs when the lecturer sets tasks that require students to think critically and apply what they have learned in class (Iucu and Marin 2014: 410; Mazarin 2020). These activities help to bridge the disconnect between what students learn in class and its application in a real-world setting.
- iv. **Project-based learning (PjBL)** is a pedagogy that focuses on students constructing their understanding by solving real-life projects (Du and Han 2016:1079). It is a hands-on learning approach that is based on learning by doing, and might be considered to be

the same thing, but learning occurs per project. Students produce a product to showcase their mastery of content. This promotes “creativity, critical thinking, collaboration and self-study... skills” (Du and Han 2016:1080).

- v. **Problem-based learning (PBL)** focuses on students’ learning by solving problems, with the planning, progress, and work completed hinging on presenting a solution to an authentic problem (Noordin *et al.* 2011:4). It assists students to develop critical thinking skills, problem-solving capabilities and creativity (Amin *et al.* 2021:119; Hasna 2009 cited in Noordin *et al.* 2011:4).

Graphic design uses a combination of these pedagogies, with the lecturer regarded as a facilitator rather than a teacher (Amineh and Asl 2015:12). A facilitator helps the student to comprehend and be able to apply the content and concepts by him/herself by creating a conducive environment that encourages disequilibrium and enables the student to arrive at his/her own conclusions (Rhodes and Bellamy 1999 cited in Amineh and Asl 2015:14). It thus makes use of scaffolding, cognitive apprenticeship, tutoring, cooperative learning and community concepts (Brown 1994; Rogoff 1998 cited in Amineh and Asl 2015:12).

Labudovic and Vukusic (2009: 53) assert that there is no perfect design education or teacher capable of instilling all the skills, knowledge, processes, and experiences that a student requires. Design education is largely dependent on the student’s personal involvement and self-motivation. de la Harpe (2006: 2) argues that curricula in South Africa and overseas tertiary institutions “rely on the execution of creative task-oriented practical projects for the development of creativity in students.” Hence, student assignments have tended to focus on the final design, via PjBL, PBL or the outcome of solutions rather than on the processes of creativity and originating ideas. Tschimmel (2004: 4) also highlights that creativity should be given more priority in design studies.

In conclusion, students need to individually understand by establishing how they learn. Vygotsky’s constructivism does not factor in remembering; what if a student forgets what he/she has learnt? (Schunk 2012). If the ZPD gap is too large, students may seek an easy way out and turn to plagiarism which is a corruption of the educational process, a quick fix to avoid the disequilibrium confronting the student.

## 2.3 Communication theory

This section reviews the literature on communication theory in relation to teaching and learning graphic communication. It begins by exploring two models of communication, namely the Shannon and Weaver model, and the Emmert and Donaghy model. This is followed by a discussion on semiotics, and semiotics as ideas, concluding this section on why communication models and semiotics are important to student designers.

Communication theory is pertinent to graphic design because when students execute design work, they seek to ‘convey’ their ideas (concepts and messages). Communication is thus central to graphic design (Aspelund 2010; Hollis 1994, cited in Barnard 2005). Communicating ideas is an art that the student designer needs to master since “designing is the art of communicating an idea” (Aspelund 2010: 142). Many authors (for example, Wahl 2018; AIGA 1993; Hollis 1994, cited in Barnard 2005) have defined graphic design as a form of visual communication. Graphic design students need to have an understanding and working knowledge of these communication models and be able to apply them in their projects in order to communicate effectively.

### 2.3.1 Models of communication

Communication models are used to understand “...the transfer of information from one place to another”; they explain how this transfer takes place (Diggory 2019). As Davis (2012: 14) puts it:

*“Models are mental or physical structures that represent our experience of and knowledge about the world. They shape and organize our perceptions of new experiences and help to make sense of our thought processes...”*

These models help to simplify and communicate abstract ideas in a way that makes it easier for everyone to comprehend (Davis 2012: 14) since they explain complex concepts or structures of different forms of communication. Models of communication make it easier to understand and explain how messages are sent from a sender to a receiver. Understanding the communication process improves effective communication, illuminating “... the complexities of human interaction...” and also helping to “... produce more effective messages...” (Morgan and Welton 1986: 4).

Two widely used communication models, namely, Shannon and Weaver, and Emmert and Donaghy, are discussed in the following sub-sections. Both assist in helping designers to understand their role in communicating ideas (Davis 2012: 15).

### 2.3.1.1 The Shannon and Weaver model

Shannon and Weaver's model of communication "... is the seed out of which all communication studies have grown..." (Fiske 2010: 5). The model was published as "The mathematical theory of communication" in 1949. It explained the transmission of messages developed for the Bell Telephone Laboratories (Baldwin and Roberts 2006: 22) and mainly focused on electronic "...telephone and radio waves...". This model of communication (See figure 2.3) explains the sending and receiving of information between a sender and receiver "...*through a channel*", in which the message from the sender is encoded, compressed to suit the communication channel, and later decoded by the receiver before it reaches the intended destination "without distorting or losing key points of the message when it passes through the channel" (Steinberg 2007: 53).

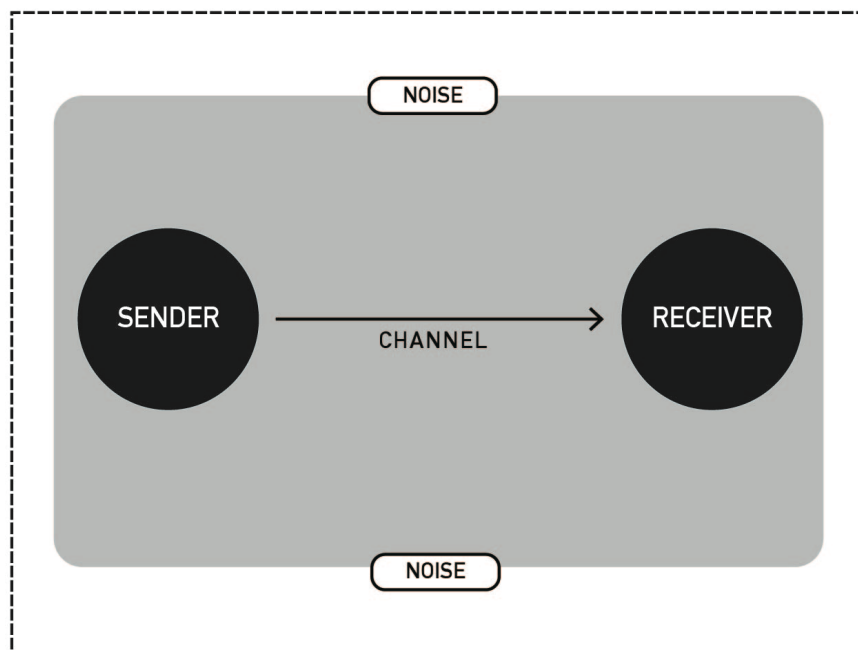


Figure 2.3: Shannon and Weaver's model of communication (Davis 2012: 16)

Shannon and Weaver claimed that their model was applicable "...to all methods of human communication – including visual communication" (Baldwin and Roberts 2006: 22). However, it has been criticised by scholars for being simplistic, and it has been dismissed as a model of communication but regarded as one that explains how information moves across a channel (Al-Fedaghi 2012: 12; Jensen and Neuman 2013: 231; Businessstopia 2018). While it appears to assume that communication is one-sided (Jensen and Neuman 2013: 231, McQuail (2013 cited in Sapienza *et al.* 2017: 2), it should be borne in mind that it was developed to refine the effectiveness of telecommunication systems (Morgan and Welton 1986: 5). Davis (2012) also argues that it does not capture the human aspects of communication because human communication is not one-sided, but two-sided, involving a back and forth. It does not stop



when someone hangs up the telephone, but continues, ensuring that the recipient has understood the intended message based on feedback received from the interaction. In this model, feedback is considered less important than the messages sent by the sender, but this is not true for human communication (Nursing Society – SPUQC 2018). Feedback on their work is essential for graphic designers as it tells them whether the message has been decoded and correctly understood by the intended audience. If not, this failure could go undetected in the absence of feedback. When a designer designs a poster, he/she expects a response from the audience to the call to action, be it brand awareness or buying a product. Hence, South African tertiary design students also need to be cognizant of the concept of feedback in communication.

Shannon and Weaver's model also ignores the fact that communication occurs within a social and cultural context; it is part of human nature. The model only focuses on the transmission of information between two points (Davis 2012: 16). It ignores the possibility of misinterpretation of messages, which design students at South African tertiary institutions should be aware of in order to understand the need to communicate effectively so that the message is not distorted (Baldwin and Roberts 2006: 24). Visual communication need to recognise the target "...audience and what type of message and media they respond to best...". Such problem solving is also applicable to design (Baldwin and Roberts 2006: 27). Graphic design students that appreciate a model of communication and its flaws can use all these concepts to their advantage, executing work that communicates effectively with the target audience.

The process of "Sender – encoder – channel – decoder – receiver" is only considered adequate for the narrow requirements of a design brief, but there is more to communication than this (Morgan and Welton 1989). Meggs (1992 cited in Barnard 2005: 20) also criticises the Shannon and Weaver model for its failure to consider 'content' or 'purpose' for communicating; it is thus "...inadequate to explain communicative art forms including ... graphic design." Baldwin and Roberts (2006:22), and Barnard (2005: 20) suggest that the model was meant for "...telephone and radio waves..." and does not identify who the "... transmitters and receivers are." In graphic design, it is important to identify the sender, channel and receiver, while determining which category between the sender and receiver the design student falls into.

#### **2.3.1.2 The Emmert and Donaghy model**

The Emmert and Donaghy model of communication appears to be the most appropriate model for graphic design. Emmert and Donaghy addressed the flaws in Shannon and Weaver's model by adding factors that describe human communication, that is, "...context, feedback and the

composition and behaviour of communicators” (Davis 2012: 17). Context is important to graphic designers because it is one of the building blocks of meaning making and is present in all interactions, including “...the communicators themselves...” and the environment (Davis 2012: 17). Designed artefacts and the user do not live a life of their own making where they can easily interpret and understand the work; “...they are situated in all the messiness and complexity of real-life and design must account for these conditions whenever possible” (Davis 2012: 17). Hence, students need to be aware that their work does not exist in a vacuum, but is affected by the context in which it is seen or read.

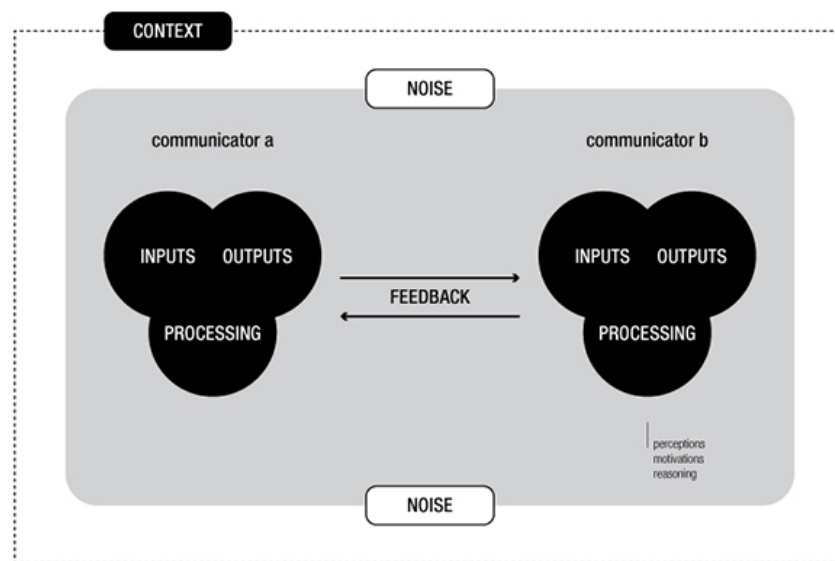


Figure 2.4: The Emmert-Donaghy model of communication 1981 (Davis 2012: 17)

A shortcoming of Emmert/Donaghy's communication model is that it does not mention culture. Hembree (2006: 27) defines culture as a “series of learned preferences depending on one’s geographic location, ethnicity and educational background.” Individuals that share a culture relate more easily, since they share the same language, “vocabulary of imagery, symbols and clichés.” “Communication occurs effectively through shared cultural experiences (and) learning individuals’ subtleties and nuances of each country and culture will greatly enhance the effectiveness of one’s design” (Hembree 2006: 27). Understanding the role of culture makes it easier to communicate with an audience, and a designer that does not understand it should research which factors they will relate to. Thus, a designer’s job is far more complicated than the Shannon and Weaver model suggests, in that he/she has to understand the culture and language of the audience in such a way that he/she can influence its values and attitudes. The designer should start by identifying the determining characteristics and patterns within the design that lure people within that cultural setting (Davis 2012: 21). It is for this reason that

students need to understand the context in which the design will be interpreted; visual signals help one to decipher what is being communicated.

The context in which the design is interpreted is important because if the visual signal is misinterpreted the message will not be communicated. The close link between context and visual signals needs to be understood and considered for communication to be effective. Once students understand this, they will be able to create the ‘best fit’ visual message to communicate within the particular context, and the design will not be taken out of context (misinterpreted). This represents the problem-solving mode. Designers seek “goodness of fit” which takes into account the interpretive context of the message (Davis 2012: 17, 57). They execute work that conveys the intended message to the audience so that it is captivating and communicates the message within the given context. No matter how captivating designs or visual signals are, if they do not communicate the intended message to the audience, the design fails to deliver the objective of its execution (Davis 2012: 17).

## **2.4 Creativity, originality and plagiarism**

One cannot speak of creativity without talking about plagiarism and originality. These three concepts exist in the same realm and professional designers and students are highly encouraged to check whether their completed work is sufficiently original and creative. However, students may not have sufficient experience to identify and rectify plagiarism. If the student or professional designer is rushing to finish a client’s brief or a class assignment, they might not care about this issue. Some authors (Sherwin 2011; Lethem 2007: 59-71; Kleon 2012: 7) argue that nothing is original, suggesting that DUT’s (2019: 7) learning outcomes (Section 1.1, page 3 above) might be asking too much of its graphic design students.

### **2.4.1 Creativity**

This sub-section elaborates on the concept of creativity, followed by a discussion on theories and models of creativity, and concluding with the creative process, focusing on ideation.

While creativity is a difficult concept to define, there is consensus\* that, in terms of results, it produces innovative ideas that challenge existing paradigms (Henley 2018: 5). Many authors

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\* Authors have written of creative ideas appearing in a flash, like lightning striking or the “eureka” moment (Burkus 2014; Brodwin 2015; Reddy 2010: 1; Oellinger and Knoblich 2006; Newman 2017). “Creativity is an act of association - it’s about taking two unconnected ideas and finding a way of bringing them together to produce a new, third idea that somehow means more than its constituent parts. Creating new combinations of old elements depends on your ability to see relationships between unconnected ideas. It’s this ability to spot a promising link that is the hallmark of creativity ...” (Horberry 2009: 26).

have defined creativity and its effects. This study employed a combination of Mithen's (1998: 22), Mumaw's (2015) and Kelly's (2019) definitions of creativity, which describe it as the ability to go beyond the limits of existing thinking, using unusual combinations of old ideas to produce relevant solutions to problems. Fusing these definitions is appropriate in relation to graphic design students because they are expected to use their imagination to combine old ideas to solve the design problem in their brief. Highlighting that combining diverse ideas leads to discoveries and creative ideas (Yu and Nickerson 2011: 2), Ladadovic and Vukusic (2009: 132) suggest that, in order to be creative, one needs to see things in unpredictable ways or view the world from multiple perspectives.

Creativity does not happen by accident; it is planned and purposeful, and is not an event or a single thing (Kind 1994; Berkun 2016; Johnson 2016). Henley (2018: 13) suggests that creativity is bred by the imagination and that most creative practices are built on mastery of structure and processes and understanding form, narrative and technique. There are rules in graphic design and once the designer understands them he/she can twist and bend them to develop creative work. Sparkman (1995: 77) highlights that "designers don't just solve problems but come up with solutions never imagined." This is a key aspect of solving problems creatively.

If creativity was simply based on one's ability to solve problems, everyone would be creative, because individuals encounter and solve problems on a daily basis (Törnqvist 2011: 11).

*"Furthermore, practice and training can lead to improvement. But if imagination, fantasy, flexibility and originality are seen as essential to solving problems, psychological interviews, tests and experiments have demonstrated that the number of people who qualify quickly declines."* (Törnqvist 2011: 17)

Using this approach to identify creative individuals and define creativity would be difficult because very few people would qualify.

#### **2.4.1.1 Models of creativity**

Models of creativity are theoretical constructions, whereas the creative process is the sequence of activities within a model of creativity. Models of creativity help one to understand more about creativity and how someone can improve their creative problem-solving skills (Plsek 1996). There are many models of creativity, including Wallas (1932) Sharma (2004: 332), Osborn and Parne (1950), Petty's Model (1997: 15) and the Traditional Model (Cronje and Appiah 2013: 19). The concept of ideation (generating ideas) is part of all these models.

Table 2.1: Comparison of creative models (Author's own, based on Sharma 2004: 332; Landa 2010: 14-22; Cronje and Appiah 2013: 19)

Model	1	2	3	4	5	6
Wallas 1932 (Sharma 2004: 332)	Preparation		Incubation	Illumination (Generate Ideas)	Verification	
Osborn and Parne (1950)	Mess-finding	Fact-finding	Problem-finding	Idea-finding (Generate Ideas)	Solution-finding	Acceptance
Traditional Model (Cronje and Appiah 2013: 19)	Problem Identification			Brainstorming (Generate Ideas)	Preparation of roughs	Execution of 'finished' roughs
Petty (1997: 15)	Clarification			Inspiration (Generate Ideas)	Evaluation	Distillation
				Incubation		

Table 2.1 presents a breakdown and some inter-correlations between the four models which remain relevant to the creative field because many authors still refer to them (Sharma 2004: 332; Petty 1997: 15; Johnson 2016; Griffin and Morrison 2010: 6-7). These models have between four and six phases and are more or less an iteration of Wallas' model, saying the same thing in different ways either by expanding or simplifying.

### Wallas' Model

“Wallas proposed that creative thinking proceeds through four phases” (see table 2.1) (Sharma 2004: 332), namely, preparation, incubation, illumination, and verification. However, Dacey and Lenon (1998: 196 cited in de la Harpe (2006: 154) note that this model has been criticised for being too simple, although the phases are recognised in other models and it also acts as a precursor to other models.

Wallas claimed that “...the creative process is recursive in nature... any of its stages can be revisited, if necessary, once they have been completed in their original sequence” (Griffin and Morrison 2010: 7). When a solution is tested and does not solve the intended problem, the designer goes back and starts again.

### Traditional Model

According to Cronje and Appiah (2013: 18) the traditional model is currently the most common one used by students. It has five phases (see figure 2.5), where students initially identify the problem, brainstorm to come up with concepts and sketches, prepare roughs, execute the ‘finished’ roughs and conclude by polishing the roughs into the final design (Cronje and Appiah 2013: 19).

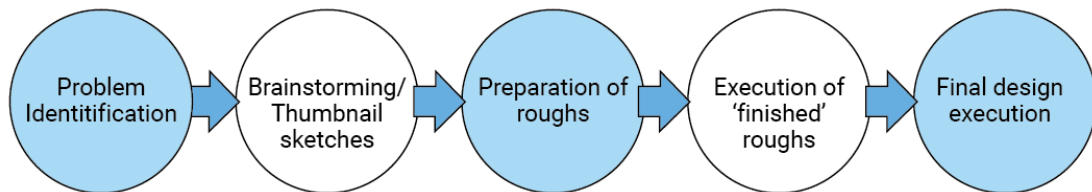


Figure 2.5: The traditional method of the creative process (Cronje and Appiah 2013: 19)

Students initially brainstorm by thumbnail sketching their ideas on paper and fine-tuning these sketches or ideas. They then digitise them using design software where they further conceptualise in the ideation process (Cronje and Appiah 2013: 17). Following through with the design process helps designers to think and grasp concepts that will help them to communicate effectively. Even though it is emphasised, and students are supposed to follow all the phases of the design process, they tend to avoid them. By taking shortcuts, they rush to execute the final design and may work backwards to produce the thumbnail sketches last, thereby creating challenges in the entire ideation process (Cronje and Appiah 2013: 18). This highlights that students focus on the final design work, not realising that they are short-changing themselves by neglecting the learning that occurs when they engage in all the phases of the design process.

### Osborn and Parne’s Model

Osborn and Parne’s model (see figure 2.6) (Espy 2019) is usually presented in five phases but the mess-finding phase is sometimes added, where one focuses on locating the problem or challenge to apply the rest of the model. The six phases are mess-finding, fact-finding, problem-finding, idea-finding, solution-finding and action-finding (acceptance-finding) (Espy 2019).

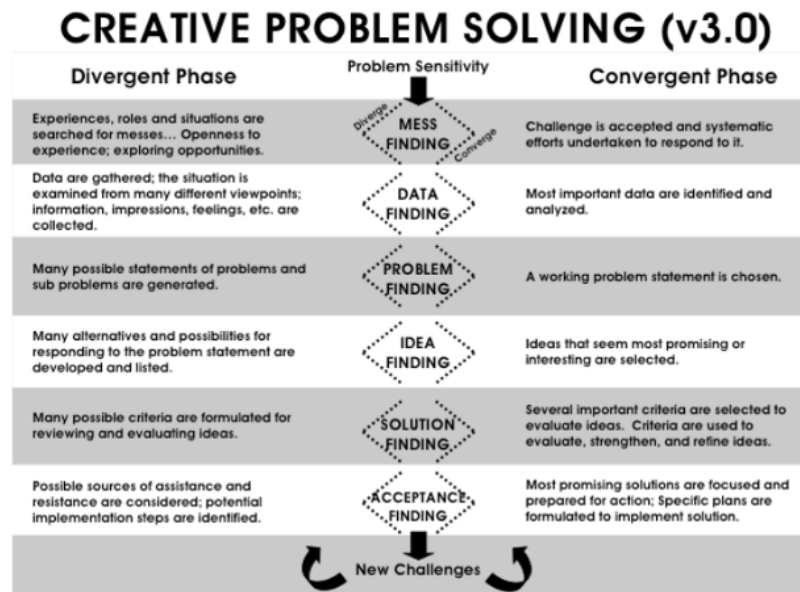


Figure 2.6: Osborn and Parne's six-phase model (Isaksen and Treffinger 2004:83)

The six phases can be grouped into three components for problem-solving: understanding the problem (mess-finding, fact-finding, problem-finding), generating ideas (idea-finding), and planning for action (solution-finding and action-finding) (Isaksen and Treffinger 2004: 88). This model creates an “on-going, dynamic balance between creative and critical thinking, or divergence and convergence” and many variations of it have evolved over the years (Isaksen and Treffinger 2004: 88).

### Petty's model

The model proposed by Geoffrey Petty (1997) seems particularly applicable to graphic design education, especially in terms of enhancing graphic design students' creativity (de la Harpe 2006: 156). Petty's (1997: 13) model of creativity has six phases, each requiring a specific 'mindset' suited to one's creative potential. The phases, inspiration, clarification, distillation, perspiration, evaluation and incubation “...are not always sequential” (see table 2.2) (Petty 1997: 15 Moseley *et al.* 2005: 122). Although Petty was writing in the 1990s, his work is still considered current.

Table 2.2: Petty’s six phases of the creative process and the mindsets required (Petty 1997: 15; Moseley *et al.* 2005: 175)

Phase	Description	Mindset
Inspiration	Research and generate ideas	Spontaneous, experimental, intuitive and risk-taking
Clarification	(Clarifying) Focusing on the goal	Strategic, unhurried and logical, not afraid to question
Distillation	Deciding which ideas to work on	Positive, strategic, judgmental and optimistic about the potential of the ideas
Incubation	Leaving the problem and working alone for some time to let it marinate	Unhurried, trusting that a way forward will emerge, forgetful
Perspiration	Working determinedly on the best ideas	Uncritical and intrepid about ideas: strategic about choices
Evaluation	Review work and learn from it	Self-critical, analytic, positive and willing to learn

In graphic design, creative tasks require a great deal of flexibility between the phases of creativity, which makes this model more appropriate to the field than others (de la Harpe 2006: 157). It is flexible in that the six phases of the creative process are not in chronological and linear sequence in comparison with the other models of creativity because Petty’s phases are “...interwoven ... encountered many times during the creative process...” (de la Harpe 2006: 157). Incubation can occur from inspiration onwards to perspiration (see table 2.2), whereas distillation can be “... employed in earlier and later phases of the creative process...”; this flexibility makes it the most applicable and effective model for graphic design (de la Harpe 2006: 157). Each phase has tools and mindsets to work with and in for optimal performance (Petty 1997: 21).

Experts in the creative field, such as professional designers, often adapt creative models, finding out how they work, and how they are “most creatively productive on a personal level” (Griffin and Morrison 2010: 6) for them as individuals. Individuals need to learn their creative process, which is easier for an expert creative, but students can use the traditional and Petty’s models, which are more applicable to graphic design, to start with. As they gain experience they can deviate from these models, taking shortcuts because they would now know how to do things better. Initially, they need to learn and understand the process and not so much the outcome. The emphasis will be on following the process, which “integrates cognitive aspects of creativity with social-psychological aspects that are needed for creative ability” (de la Harpe 2006: 156).



Students' current practice and creative process, from pretesting observation, are included for comparison with the literature in chapter 4, section 4.2.3). This reveals the possibilities at DUT. Petty's model divides evaluation and distillation into two separate steps, while Osborn and Parne's model regards the selection process as part of the final solution-finding phase (de la Harpe 2006: 168).

These models help students and designers to develop ideas by connecting to the unknown with divergent thinking while organising various ideas in structured ways using convergent thinking; in other words, using these two ways of thinking (Guilford quoted in MacKinnon 1992: 76, and Isaksen and Parnes 1992: 438, both cited in de la Harpe 2006: 30, 122, 155). In this study, a literature review was done to examine the potential of the models of creativity and compared it against graphic design students' current practice at South African tertiary institutions.

This study focused on Petty's model of creativity (de la Harpe (2006: 156; Petty 1997: 19) because it is related to "artistic problem solving", taking into account personal motivation, both intrinsic and extrinsic, "...the creative environment...the practical execution of a creative task" and the "mindsets" required for each phase, which the other models do not consider (de la Harpe 2006: 156) as they focus on the cognitive dimension of a creative process.

#### **2.4.1.2 Creativity in graphic design**

Generation of new ideas as part of creativity is an essential skill in the design industry (Hokanson 2007: 353). Conceptualising new ideas is a skill that can be taught to students who are learning graphic design. "In teaching a skill, the emphasis should be on active learning and extensive practice, and this applies equally to creativity" (Hokanson 2007: 353). As noted earlier by de la Harpe (2006: 2), discussion on and assessment of curricula in tertiary institutions historically focused on the student's final design outcome rather than the processes of creativity and originating ideas. Similarly, Hokanson (2007: 353) asserts that lecturers assume that when students work in the design studio, this will automatically enhance and develop their creative abilities. This assumption is questionable because it assumes that a graphic design student will miraculously acquire creative thinking skills and become creative simply by working in the studio on "the execution of creative task-oriented practical projects" (de la Harpe, 2006: 2). However, students could learn and grow by being in the company of like-minded peers working in the studio, seeing their examples, and discussing problems together, while challenging one another to excel; bearing in mind that students need to apply themselves for this process to be

effective. Hence, many factors need to be considered if design students are to acquire the skills required to be successful in the studio.

Teaching about creativity is slightly different because it is a thinking skill, and skill is learned through practising; "...skills have to be practised to be developed" (Torrance 1972: 2). Hence, when a student starts learning, they need to follow the correct methodology from the outset that will enable them to develop their creative thinking ability, which in turn enhances their creativity. Creativity and thinking cannot be taught directly like other subjects or topics, which makes teaching students about creativity and thinking skills difficult. Most pedagogical methodology does not encourage the expression of creative thinking and imagination (Kampylis and Berki 2014: 6,8; Hokanson 2007: 353). Even though creativity is a complicated skill to impart, there are tasks which might enhance one's creative ability. However, this requires focus, and hard and diligent work (Christensen 2014; Hokanson 2007: 353).

In identifying the important curricular components to teach creativity, Bull *et al.* (1995: 83-89) found that a conducive environment should be established in which students feel safe and free to explore their creative potential, experiment and not suffer from fear of failure

*"This exploration should lead the student to openness to the creative experience, internal aptitude, and external environment. This openness, in turn, promotes curiosity and inquisitiveness, leading to insight and innovation."* (Bull *et al.* 1995: 83-89)

Hokanson (2007: 354) observed that subjects and courses that focus on structured formal brainstorming techniques to develop creative skills yield better results than those that use free "...exploration or creative expression..." where students have the creative licence to do whatever they wish. "The largest gains in measured creativity occurred through structured techniques such as critical thinking, convergent thinking and constraint identification" (Hokanson 2007: 354).

*"Convergent thinking involves the attempt to solve problems in a traditional manner, whereas divergent thinking finds unconventional approaches."* (Törnqvist 2011: 11)

Divergent thinking is necessary to conceptualise new ideas, while convergent thinking is used to determine the most useful or appropriate solution (de la Harpe, 2006: 122). Graphic design makes use of both divergent and convergent thinking, in which students use the creative process to solve design problems through ideation. Creating new patterns and associations is key to generating new ideas. Hence, design students need to engage with this perspective of learning about creativity, which is likely to enhance their problem-solving skills.

### 2.4.2 Originality

Originality is a component of creativity, and both are among the learning outcomes required of graphic design students at DUT. The word 'originality' comes from 'original' which Sherwin (2011) defines as “the freshness of aspect, design, or style” or the “power of independent thought or constructive imagination.” Originality is the ability to be independent, creative in thinking and to exercise “...constructive imagination” (Dictionary.com 2019a; Merriam-Webster 2019). If one applies Sherwin's (2011) definition of original art to graphic design, it would be design work “that has not been received from others nor ... copied based on the work of others.”

The concept of originality has been vigorously challenged by several authors. Cullinane (2013) argues that it is not possible to create original work in that it involves rearranging elements that already exist into new combinations. Sherwin (2011) concurs and takes a “philosophical standpoint” that design and art can never be completely original, because we build from what we see around us in the world and we are part of a “living visual history”. We borrow from and adopt what we see and apply it to our work. Either by inspiration or the mere fact of our lives as social beings, in interacting, ideas rub off on one another and are “consciously or unconsciously” influenced by images or previous designs (Sherwin 2011).

The Bible argues that “there is nothing new under the sun” (Ecclesiastes 1:9) and many authors agree that “*Nothing is original...*” (Horberry 2009: 57; Sherwin 2011; Lethem 2007; Kleon 2012: 7) Indeed, writing in MovieMaker Magazine, Jim Jarmusch (2013) states: “Nothing is original. Steal from anywhere that resonates with inspiration or fuels your imagination” (MovieMaker Magazine #53 - Winter, January 22, 2004).

Students that read this statement by Jarmusch might not understand it, because it does not refer to an academic setting in which students might fall prey to plagiarism, and where it is taken much more seriously. Hence, students should be taught more about the academic aspect of plagiarism so that they are knowledgeable about the difference between the two realms. Outside academia, some practices are acceptable, whereas in academia plagiarism is unacceptable and has severe consequences. Hence, students in academic settings should be highly motivated to produce original work.

It is the researcher's contention that originality starts with mixing and matching ideas, and achieves original, innovative and outstandingly creative combinations. One of the difficulties

confronting today's students is that so much creative work exists that it can be extremely challenging to be sure if one's work has any originality or subconsciously plagiarises the work of others.

### **2.4.3 Plagiarism**

This sub-section defines plagiarism, examines textual and visual plagiarism, provides examples of visual plagiarism and types of plagiarism, examines why students plagiarise, and discusses acceptable plagiarism.

Plagiarism became an issue during the 19<sup>th</sup> century when ideas such as individuality and copyright came into play, and it was considered unethical to profit from someone else's ideas (Pemberton 2000: 83; Woodmansee and Jaszi 1999: 266). It appears that plagiarism has affected the learning process of graphic design students in South African tertiary institutions. If students plagiarise, they end up short-changing themselves and not learning as much as they could.

Some authors who have written on the topics of plagiarism, creativity and originality may not have dealt with students from a wide variety of backgrounds. Students from similar backgrounds would be likely to have similar levels of cultural knowledge, perceptions and learning processes. This is not the case among graphic design students in South African tertiary institutions because South African students come from a variety of backgrounds. Due to varying levels and processes, it is important to distinguish between copying and plagiarism. According to the Lexico dictionary (2019a), a copy means "...a thing made to be similar or identical to another; reproduce or imitate the style or behaviour of ...". Hence when someone copies, they 'reproduce', mimic or imitate another's work without claiming it. In contrast, when one plagiarises, one copies but goes further by taking ownership, claiming the work as one's own. Swanson (2005: 56) emphasises that "...copying is not plagiarism." Plagiarism carries no attribution to the original, and the goal is "passing off of someone else's creation as one's own" (ibid).

While there are numerous definitions of plagiarism, the common thread among various authors is using someone else's idea without attribution (Belter and DuPre 2009: 259; Colnerud and Rosander 2009: 506; Hard *et al.* 2006: 1059; Park 2003: 472; Wang 2008: 743; Williams, Nathanson, and Paulhus 2010: 294, all cited in Fish and Hura 2013: 35).

#### **2.4.3.1 Textual and visual plagiarism**

In modern times, it is easy to find visual and textual information online, and it is also easy to fake things. Technological advances have made it much easier to copy someone's work (Earls 2015: 8). McMillan and Weyers (2013: 3, 4) note that, while the Internet offers a wealth of information that assists students' learning, it also tempts them to plagiarise.

Plagiarism involves copying more than words; it also encompasses "...images, graphs, algorithms, tables, and ideas" without citing or crediting the original author (Jharotia 2018: 1). Hence, both textual and visual work can be plagiarised. Textual plagiarism occurs when one copies text whereas visual plagiarism involves the use of images. It is easy to curb because a student can reference the textual source, whereas with graphic design there may be no place one can credit or reference the source if all that is seen is the final design (Blythman *et al.* 2007 cited in Garrett and Robinson 2012: 26).

Furthermore, with visual plagiarism, the lines of demarcation between influence and plagiarism are blurred and hard to distinguish (Wallen 2013). Economou (2011: 80) notes that procedures are available for students to avoid plagiarism in text assignments, but in graphic design, there is no such standard approach. Much work remains to be done in the visual arts to "...develop policies that can deal with attributes of the discipline" (Economou 2011: 80). Clear policies could assist graphic design students to navigate the grey areas of plagiarism and originality. Judge (cited in Wallen 2013) argues that borrowing from someone else's work as a way of improving one's work is not plagiarism. From this perspective, the lines are not clearly drawn. The notion of borrowing ideas to improve one's work can cause confusion among students on the differences between inspiration, influence, copying, and plagiarism. Bradley (2013 cited in Noh *et al.* 2016: 2, 3) notes that another factor that has contributed to visual plagiarism is a "lack of awareness in drawing the border between being inspired and copying" and that in some academic communities, students lack an understanding of plagiarism.

Institutions have adopted policies and tools to curb both textual and visual plagiarism. Noh *et al.* (2016: 2) claim that visual plagiarism is increasing among graphic design students, and that it could cause major damage if students are not held accountable. Universities in the UK and elsewhere have adopted plagiarising detection software to "...counter-act plagiarism" (Garrett and Robinson 2012, McMillan and Weyers 2013: 19), as have South African institutions. Software like Turnitin, Grammarly, Viper, iThenticate, Copyleaks and Safeassign is designed

for textual plagiarism while TinEye and Google image reverse search are used for visual plagiarism (McMillan and Weyers 2013: 21; Kane 2016; Adams 2015; Jharotia 2018). Textual plagiarism software searches by matching the “...incidence of strings of the same or similar words ... in...” a document, against a large “...database of sources...”, highlights instances that match the sources, and assigns the work a “plagiarism score” (McMillan and Weyers 2013: 19). Rewording and paraphrasing can reduce the ‘plagiarism score’; thus anti-plagiarism software does not stop plagiarism, but minimises and manages it.

#### **2.4.3.2 Types of plagiarism**

Many types of plagiarism have been described, but for the purposes of this study, the focus was on mosaic, accidental and acceptable plagiarism.

##### ***Mosaic plagiarism***

Also known as patchwork plagiarism, mosaic plagiarism occurs when a student copies “... phrases, passages and ideas...” from various sources and combines them “...to create a new text” without citing the sources (Streefkerk 2018). This mainly occurs in text work, where it is easily detectable with plagiarism software (Streefkerk 2018). In visual assignments, mosaic plagiarism refers to students using concepts from other designers. They might seek to avoid the effort required to produce original, creative ideas by using other designers' work instead of using it as a source of inspiration. This kind of visual plagiarism is detectable using software like TinEye.

##### ***Accidental plagiarism***

Porter (2010b cited by Garrett and Robinson 2012: 26) notes that some students plagiarise unintentionally. This often occurs when students are starting out on their academic journey and need to be taught the correct way to cite and reference work. In this case, students lack understanding of what is required of them (Macmillan 2014). They may also reproduce others' work unconsciously, remembering designs they have seen elsewhere.

##### ***Acceptable plagiarism***

Suggesting that there is acceptable plagiarism raises eyebrows; how can it be acceptable? Economou (2011: 82) notes that “creative practices of copying and combining pre-existing...” work has “...challenged the boundaries of... originality.” Graphic design students' “acceptable and unacceptable practices of...copying visual materials may become a minefield” for new students to navigate (Economou 2011: 81). Knowing the grey areas comes with understanding

plagiarism policies and professional experience, and is based on one's discretion, which one picks up while learning to design. This sub-section discusses acceptable plagiarism, appropriation, remixing and mix+matching ideas in design.

Appropriation is the creative practice used in visual arts when elements are 'borrowed' to create new work (Sahiner 2007: 1 cited in Economou 2011: 82). This is also applicable to graphic design when a designer borrows concepts and ideas, but it is a thin line and the inexperienced designer might end up plagiarising. This practice is questioned in that it lacks 'originality' and is considered ethically incorrect by some (Sahiner 2007:1 cited in Economou 2011: 82). It is debatable whether it is legitimate or mere plagiarism, but many designers and artists have used it to come up with remarkable work.

Appropriation is a risky concept for second-year graphic design students in South African institutions because it implies awareness of the original context and how the student is changing it for their context, which most second-year students would not have. "The problem is that appropriation is theft" (Vierling 2018), "borrowing without asking for it..." or even giving attribution of the source (Vierling 2018) (See figures 2.7 and 2.8 for an example of an appropriated poster of Herbert Matter (1934) by Paula Scher (1984)) The context would be different from that of a design student's context. In this case, Scher received permission to use Herbert Matter's work from his widow, which most students would not know about. All they see is a famous designer appropriating someone's ideas; hence, it must be acceptable for them to do the same.



Figure 2.7: Herbert Matter's original work (Meggs 2006: 483)

Figure 2.8: Scher's work (Meggs 2006: 483)

<sup>1</sup>The term "appropriation" is also "...used to describe how post-colonial societies take over ... aspects of ... imperial culture..." (Ashcroft *et al.* 2007: 15) and repurpose it in and for Africa. "Cultural appropriation" is the opposite, where individuals in the "First World" steal ideas from "Third World" countries, "...taking artistic expression for profit" and not giving credit for where the original idea came from (Vierling 2018). DUT second-year students might find themselves in all these situations. It is hard for a student to learn this because they would need to know about graphic design history, theory and criticism which they would not have been exposed to yet. Their work would still be plagiarism.

Kleon (2012) notes that "mismatching" helps one to come up with different combinations of ideas. Linking them together can result in an original idea. "If you have one person you're influenced by, everyone will say you're the next whoever but if you rip off a hundred people, everyone will say you're original!" (Panter cited in Kleon 2012: 36). Hence people remix to come up with new concepts.

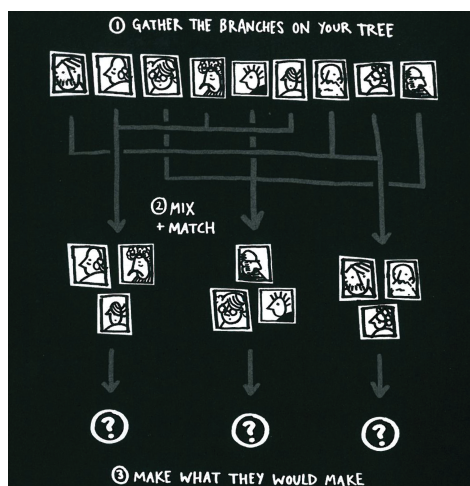


Figure 2.9: Mix + matching, integrating other's ideas (Kleon 2012: 38)

GOOD THEFT	BAD THEFT
HONOR	DEGRADE
STUDY	SKIM
STEAL FROM MANY	STEAL FROM ONE
CREDIT	PLAGIARIZE
TRANSFORM	IMITATE
REMIX	RIP OFF

Figure 2.10: Good theft vs bad theft (Kleon 2012: 38)

Plagiarism may be acceptable when one uses existing work as a source of inspiration. When a student looks at one example of visual work and uses only that to create their own, instead of

<sup>1</sup> Post-colonial societies take over those aspects of the imperial culture like language, forms of writing, film, theatre, even modes of thought and argument such as rationalism, logic and analysis (Mambrol 2017). Some post-colonial societies use English a medium of expression for example these regions make use of the prevailing language and its conceptual forms to try to interpret vastly different cultural experiences into the dominant ways of representation in order to reach as many people as possible.



using it as a source of inspiration that they develop according to their process, they copy the design work. See figure 2.10 above on what constitutes good (remixing) and bad (plagiarising) theft. When a student looks at nine sources of inspiration and uses three in “mixing + matching” (See figures 2.9 and 2.10 above) to construct their work, inspired by the three images but based on their perspective, it is not considered as plagiarism but inspiration (See figure 2.11).

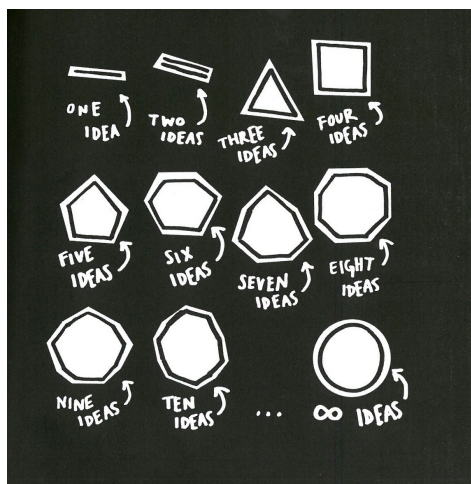


Figure 2.11: Generating ideas (Kleon 2012: 44)

If students are to avoid plagiarism, they must be given clear guidance on what is and is not acceptable. Allowing them to think that only a slight difference from the original will do, is not acceptable. While one’s understanding of plagiarism is based on one’s discretion, students need to learn what discretion involves. First-year students will find this issue more difficult than third-year students. Hence, students need to be taught what plagiarism is in line with ideation. This will enlighten them on what has been done before and they will be able to move forward.

#### 2.4.3.3 Why do students plagiarise?

Textual and visual plagiarism are major concerns within academic circles. In order to excel academically and in life, students should ask questions like: is this work original? Is it cited? What percentage plagiarism is acceptable? McMillan and Weyers (2013: 16, 17) lament that plagiarism is a global problem caused by different pressures that students encounter, namely “...social, economic and academic...” One might think that students plagiarise because they are lazy, but closer analysis reveals that it is a more complex issue (Evering and Moorman 2012: 38). Students plagiarise because it is “...easier, faster and... (they appear) more fluent...” in completing their work, and receive better grades (Fowler *et al.* 2007: 105). Dawson’s (2004) study that involved a sample of 88 students at Curtin University in Australia, found that students plagiarise due to:

- I. the difficulty of assignment topics,

- II. poor time management,
- III. ignorance, unawareness,
- IV. inadequate referencing skills,
- V. laziness,
- VI. a language deficit,
- VII. pressure,
- VIII. fear of failure and just cheating.

The purpose of assignments is putting in the work and engaging with the material, rather than grabbing it online, which is what students may do (Dculibrary 2013). In some cases, students do not realise that they need to take their time to complete assignments. The sub-section below elaborates on why students plagiarise.

### **(1) Information overload, digitisation and the Internet**

The information age offers “...freeware, shareware utilities, books, documents, images, graphics, fonts, music and movies” that are all easy for students to access and use (Economou 2011: 80). Several authors have highlighted that almost infinite access to information makes it easier to plagiarise (e.g., Evering and Moorman 2012: 37). “Because there are so many ways to access information and often multiple authors of that information, lines of ownership are blurred” (Moorman and Horton 2007 cited in Evering and Moorman 2012: 37). The way Millennials view plagiarism is different from how university administrators view it since they have grown up with technology. They feel there is no such thing as ownership of ideas (Evering and Moorman 2012: 38). Because they believe that ideas do not belong to anyone and that information is easily accessible and free, these students may enter academia with perceptions of academic honesty that differ from those who believe that authenticity in academia is worth it (Zyl and Thomas 2015: 1). According to McCabe (cited in Evering and Moorman 2012: 37), students believe that “...if the information is on the Internet, it is public knowledge and does not need to be...” referenced. Allen (2003:3 cited by Economou 2011: 81) adds that there is a misconception among “...the younger generation that everything on the internet is ‘free’.”

Many graphic design students access and replicate digital information unconsciously every day, using a computer as a tool to connect to the Internet. Stock images, various web resources, portfolio showcases, vector graphics and numerous other sources are easily accessible for designers to draw inspiration from and use in their design process. This has blurred the boundaries between the tools of production and consumption for designers. It causes problems in teaching graphic design when students use these sources not as inspiration but as their own

final executed work, or the work submitted has a strong resemblance to the referenced work (Economou 2011: 81).

## **(2) Not concerned about it**

It seems that some students are only concerned about passing. According to Evering and Moorman (2012: 38), students' "lack of interest may prompt them to plagiarise just to get the task done, or their lack of understanding of how to do the assignment may cause them to plagiarise". Students may not be concerned about plagiarising: to them, it is all about maintaining the average grade and getting the work over and done with. They need to be active and engaged in ways that will make them understand what assignments require so that they are concerned about the assignment and able to ask questions, thereby learning.

## **(3) Students do not know**

Another reason why students plagiarise is that they are unaware of it or feel there is nothing wrong with it (Cheema *et al.* 2011: 667; Macmillan 2014; Garrett and Robinson 2012: 26). Noh *et al.* (2016: 5) state that students "are not generally aware of plagiarism even though it is written in the university's academic rules and regulations booklet." Porter (2010b cited by Garrett and Robinson 2012: 26) concurs that some students plagiarise unintentionally. If students were aware of plagiarism, it would be intentional. This highlights the need for institutions including DUT to make students aware of plagiarism and to emphasise its consequences.

## **(4) Fear of failure**

Another reason why students plagiarise is that they are afraid of failing. Students who are desperate to pass and feel unable to come up with ideas or good enough ideas (Dawson 2004) may plagiarise in order to avoid failing. Pressure from home, and not wanting to disappoint their parents, pushes them to find an easy way out.

## **(5) Poor time management**

Macmillan (2014) posits that another reason why students plagiarise is poor time management skills. If they start late on their assignments, they may plagiarise to submit them on time.

## **(6) Laziness**

Dawson (2004) suggests that some students plagiarise because they are too lazy to think, and it is easy to copy. They may find it “tedious and annoying” and too much effort to cite work (Dawson 2004). He further highlights that some students feel that, if the work is easily available, why not use it (Dawson 2004). Evering and Moorman (2012: 38) concur that laziness is one of the reasons why students plagiarise. Not only is it easy, but they believe they can get away with it. To encourage students to avoid plagiarism, they need to understand the level of creativity that lecturers expect from them. The following section discusses theories of creativity.

## 2.5 Theories of creativity

Researchers have developed several theories, including mental illness, psycho-analytical, humanistic, psychoticism, addiction, investment and associative (Stephen 2013), to understand the practices and explain the “mechanisms underlying creative thinking” (Weisberg in Sternberg 1999: 226). These theories are described in table 2.3 with brief descriptions of their propositions.

Table 2.3: Theories of creativity (Author's own, based on Stephen 2013; Sternberg 1999: 10; Mednick 1962: 220; Burbage 2016)

Theory	Description
<b>Mental illness theory of creativity</b>	Posits that for an individual to be creative, some form of mental illness needs to be present, but it should not be severe. Disorders associated with this theory include bipolar, schizophrenia, manic-depressive disorder, major mood swings and different levels of depression (Stephen 2013; Burbage 2016).
<b>Psychoanalytical theory of creativity</b>	Suggests that individuals are creative as a reaction to difficult circumstances or repressed emotions (Stephen 2013; Burbage 2016).
<b>Humanistic theory of creativity</b>	Proposes that for someone to be creative the six basic needs have to be met first, and the creative individual emerges following self-actualisation (Stephen 2013; Burbage 2016).
<b>Psychoticism theory of creativity</b>	Creativity is viewed as linked to psychosis or madness; hence, this theory claims that creative individuals have psychotic tendencies which form the foundation of creative personalities (Stephen 2013; Burbage 2016).
<b>Addiction theory of creativity</b>	Notes that addiction to substances (alcohol and drugs) may cause creativity in some individuals (Stephen 2013; Burbage 2016).

<b>The investment theory of creativity</b>	Creative individuals “buy low and sell high” when it comes to ideas. Buying low involves pursuing unknown or out of favour ideas which have growth potential (Sternberg 1999: 10).
<b>Associative theory of creativity</b>	Creative thinking is a process that involves the rearrangement of already associative elements into new combinations (Mednick 1962: 220).

Some of these theories have been heavily criticised as ill-defined, open-ended, impairing creativity, the result of faulty research, or as ignoring individuals’ biological and social aspects. The current study drew on Mednick’s associative theory of creativity (Stephen 2013; Mitch Medical 2022). Because people in a broad range of fields have benefited from the Mednick’s associative theory to increase their creative output.

### **2.5.1 The associative theory of creativity**

Sarnoff Mednick (1962) developed the associative theory of creativity (1962: 220) that is not directed at any specific field, but seeks to explain the generic features that underlie all creative thought. Benedek and Neubauer (2013: 273) state that the theory explains how creative ideas are generated and why creative people are prone to continue channelling creative ideas. Mednick (1962) posits that “the ability or tendency which serves to bring otherwise mutually remote ideas into contiguity will facilitate a creative solution”. He notes that problems can be solved creatively by means of “three processes: serendipity, similarity or mediation” (Fasko 1999: 135). This theory is still used in recent literature such as Altarriba, Leblebici-Başar, and Vitrano (2021) and Beaty, Silvia, Nusbaum, Jauk and Benedek (2014).

#### **2.5.1.1 Serendipity**

The Oxford Learner’s Dictionary (2020) defines serendipity as “the fact of something interesting or pleasant happening by chance”, while Your Dictionary (2020a) defines it as “an instance of making fortunate discoveries by accident.” This means that one makes a discovery, or in design, a person produces creative ideas out of the blue that solve the creative problem currently at hand. From Mednick’s (1962: 221) perspective, in creative thinking “the requisite associative elements may be evoked contagiously by the contiguous environmental appearance (usually an accidental contiguity) of stimuli which elicit these associative elements.” The environment is key in using the stimulus to serendipitously come up with creative solutions. X-rays, penicillin and other inventions are attributed to serendipity (Mednick 1962: 221).

#### **2.5.1.2 Similarity**

Similarity occurs when things look or are the same (Cambridge 2020a). The required associative elements may be induced because of similarities “...of the associative elements or the similarity of the stimuli eliciting these associative elements” (Mednick 1962: 221). This is mainly encountered in creative writing which makes use of “homonymity<sup>2</sup>, rhyme and similarities” (Mednick 1962: 221), to come up with creative solutions.

### **2.5.1.3 Mediation**

Mediation is defined by the Cambridge (2020b) Dictionary as “the process of talking to two separate people or groups involved in a disagreement to try to help them to agree...” However, Mednick applied it to creative problem-solving. “The requisite associative elements may be evoked in contiguity through the mediation of common elements” (Mednick 1962: 222). Ideas may be inspired when other ideas are in contact or sequential, or close to each other (associative elements) through the process of bringing different ideas and elements together. This enables one to find a solution to a problem, which one would not otherwise have thought of.

### **2.5.1.4 Associative hierarchies**

According to Benedek and Neubauer (2013: 273), “Mednick assumed that creative individuals show higher ability to access mutually remote associative elements, which can be combined to form creative solutions.” Associative elements are essential; without them, a designer will not be able to mix, match and develop creative solutions (Mednick 1962: 222). The time taken and the probability of coming up with creative solutions will be influenced by one’s organisation of the associations (Mednick 1962: 222). Mednick (1962: 222) proposed that creativity is based on an individual’s “associative hierarchy”. For any concept, there is a set of associations which can be arranged in order of their associative strength (Benedek and Neubauer 2013: 273). When one encounters a problem or is trying to come up with a creative solution, individuals who are restricted come up with stereotypical associative combinations, indicating a steep slope in terms of the associative hierarchy. Mednick notes that a “...person with steep associative hierarchies being presented with the concept ‘table’ might be restricted to overly dominant responses such as ‘chair’ (see figure 2.12) (Benedek and Neubauer 2013: 275), whereas “...a person with flat associative hierarchies being presented with the concept ‘table’ is more likely to retrieve more remote associative responses such as ‘leg’ or ‘food’ (see figure 2.12) (ibid).

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<sup>2</sup> Homonymity occurs when “each of two or more words ... (have) the same spelling or pronunciation but different meanings and origins”. For example, the word book can mean a reading book and booking a reservation or a room (Lexico Dictionary 2020b; Your Dictionary 2020b)

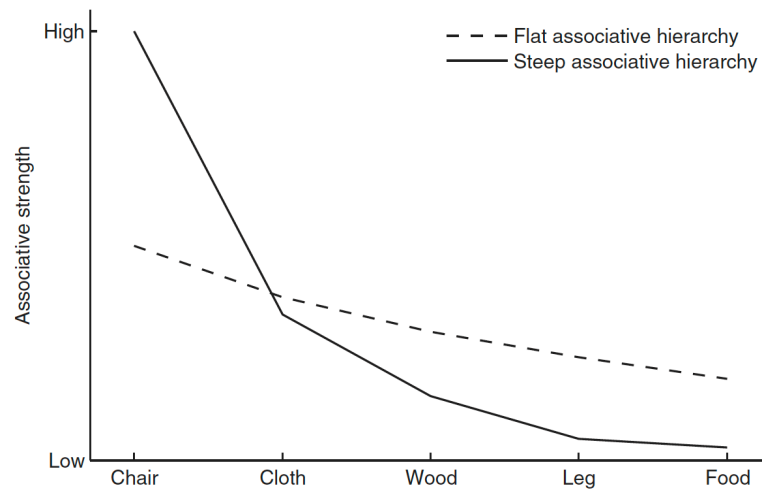


Figure 2.12: Associative hierarchies for the concept ‘table’ (Mednick 1962: 223)

Hence, highly-creative individuals have a flatter associative hierarchy than those with low levels of creativity (see figure 2.12). Mednick assumed that creative individuals with flat associative hierarchies would initially generate associations at a lower rate due to the lack of highly dominant responses; but they would respond more steadily and thus in the long run produce an overall higher number of responses (Benedek and Neubauer 2013: 275). Creative individuals had “easy access to unusual responses while the not so creative individuals had a steep associative hierarchy making it difficult to emit infrequent responses” (Brown 1973: 429). Thus, highly creative individuals have more associative abilities than less creative individuals (Reid and Rotfeld 1976: 25).

According to Cropley (2000: 8), Reid and Rotfeld (1976: 25) and advertising greats, Leo Burnett, Tom Dillion and Hanley Norins the associative process is central to advertising creativity. Although Reid and Rotfeld were discussing the associative theory in 1976, the researcher believes that it remains relevant to advertising and creativity because several authors (Cropley 2000: 8; Oaps 2008) still refer to it in advertising and “advertisers have also recognised that the associative process is central to advertising activity” (Reid and Rotfeld 1976: 25). The person with the highest associative ability and a positive attitude to creating commercials is likely to be the most creative individual in the agency because he/she develops the most effective, problem-solving advertising communication. “To assist this creativity, relevant triggers are needed in which individuals with high associative skills produce more creative advertising” (Oaps 2008: XVI). These comments highlight the importance of the

associative process in advertising as the cornerstone for creativity, which is also required of graphic design students.

## **2.6 Graphic facilitation**

Internationally, graphic facilitation is commonly used for its problem-solving capabilities within the business world. It helps teams and organisations to accomplish goals (Hautop and Orngreen 2018: 54; Muller, Wildman and White 1993: 64). Evidence could not be found to substantiate the use of graphic facilitation to teach graphic design in South Africa. Graphic facilitation is inspired by the practice of “design sketching” incorporated by both architects and designers (Hautop and Orngreen 2018: 57). Design sketching is a quick technique that is used to easily convey ideas graphically on paper as rough drawings so that a designer can think about basic combinations before committing to precise connections and exact shapes.

Graphic facilitation has also been widely used as a conceptual methodology to capture significant aspects of work from the perspective of the employee for the past ten years (Muller, Wildman and White 1993: 64), and thus for solving problems (see figure 2.11). Several authors also note that it can be used for conflict resolution in companies, to generate ideas and solve problems (Ball 1999), and to give marginalised employees a voice (Hautopp and Ørngreen 2018). It thus follows that it could assist students in finding their voice.

Graphic facilitation has previously been used to solve problems in three different contexts for a total of 20 different purposes (see table 2.4).



Table 2.4: Previous uses of graphic facilitation\*

Settings	Purposes	
Meetings	Educational brainstorming	Strategic planning
Workshops	Sharing ideas	Personal planning
Conferences	Mapping-out ideas	Group processes
	Team building	Political processes
	Visual thinking	Contemporary art practices
	Capturing ideas	Recording raw data
	System thinking	Presenting data
	Group discussions	Capturing important work
	Conflict resolution	Capturing meaningful work
	Helping people to think creatively	Helping people to think freely

Graphic facilitation makes use of visuals and text to help a group to work together, and the facilitator illustrates what people are sharing in a session (Bailey 2011: 14). Capturing “...ideas as they evolve” is a powerful technique to achieve a group purpose (Bailey 2011: 14). The group offers a real world view and their ideas are graphically projected by the facilitator, illustrated in real-time on a large sheet of paper on the wall (Ball 1999; Valenza and Adkins 2009: 3). Several authors note that graphic facilitation entails capturing, recording and organising a group’s ideas using graphics, icons, texts, and phrases for everyone to see (Ball 1999; Bailey 2011: 14 Valenza and Adkins 2009: 38). Ideas as icons are recorded “in context with other ideas” (Valenza and Adkins 2009: 38). These words and icons are the key elements that represent the ideas harvested in graphic facilitation. Graphic facilitation also makes use of words, phrases, titles, topics, quotes, and buzzwords in the form of graphic symbols. It employs “low-tech” material, such as felt pens, and large (4-foot-high and 10-to-15-foot-long) sheets of butcher paper (Ball 1999; Valenza and Adkins 2009: 38). If “a picture is worth a thousand words”, visual representation of a word can say more than just noting down the word (Bailey 2011: 14; Barnard 1921). It helps “...add colour..., (feedback, interacting) sound(s) to gatherings... (and) ...enhances participants' learning because it provides content that is considerate of multiple views” (Congleton 2011: 21).

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\* Ngcoya 2019; Koberidze & Tsereteli 2019; Muller *et al.* 1993; Valenza & Adkins 2009; Ball 1999; Mendonca 2016; Bailey 2011; Sibbet 2001; ILT Brief 2 2011: 5.



Figure 2.13: What is graphic facilitation imagine think? (Xiao 2013)

Graphic facilitation has been used in many contexts because it helps to gather, plan, record, and share ideas, and assists participants to think freely and creatively (Ball 1999; Bailey 2011: 14; Valenza and Adkins 2009: 38).

Bailey (2011: 14) notes that graphics have been used since time immemorial. Currently, educators make use of blackboards, interactive whiteboards and other media to share ideas with students. Hence, graphic facilitation, especially symbolic graphics, is deep-rooted in humans and should also be impactful for graphic design students in South African tertiary institutions like DUT. Graphic facilitation is like sketch noting where practitioners listen to a group and come up with engaging visuals and content that reflect the key ideas under discussion (Mendonca 2016: 129).

### 2.6.1 Advantages of graphic facilitation

The literature indicates that graphic facilitation helps participants to remember the workshop and to relate to the visual information provided since it promotes retrieval of knowledge while enhancing large group experiences. Appealing to the visual sense also helps to create a space where often-unheard voices can be expressed (Espiner and Hartnett 2016: 46). Given that it enables marginalised employees to voice their thoughts, it could do the same for students. The advantages of graphic facilitation are highlighted in table 2.5.

Table 2.5: Advantages of graphic facilitation \*

<b>Advantages</b>	<ul style="list-style-type: none"> <li>- Helps ideas to come to life in front of the audience</li> <li>- Enables individuals to co-create and work with visual presentations</li> <li>- Promotes easy recollection</li> <li>- Helps with effective visualisation</li> <li>- Makes teams feel that their ideas are valued</li> <li>- Brings information closer to the participants</li> <li>- Helps the participants to remember and use the shared information</li> <li>- Presents ideas in relation to other ideas</li> <li>- Preserves a selective record of the work</li> <li>- Assists conceptual and content mapping</li> <li>- Enhances understanding and comprehension of the interrelationship of ideas</li> <li>- Graphical thinking does not require a participant to know a word</li> </ul>
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## 2.6.2 Disadvantages of graphic facilitation

A number of disadvantages of graphic facilitation have been identified, with cognitive, emotional, and social challenges being the most serious in that people might not understand what the presenter is saying, the drawings might be oversimplified, and cultural differences might cause misunderstanding (Bresciani and Eppler 2018 cited in ILT Brief 2 2011: 5).

Cognitive challenges arise when the graphic facilitator's mental processes do not match those of the audience (Bresciani and Eppler 2018 cited in ILT Brief 2 2011: 5). "...Cryptic encoding, implicit meaning, inconsistency, over-complexity, over-simplification and redundancy" are among other cognitive problems (ILT Brief 2 2011: 5). Participants may also pose further cognitive hurdles by refusing to read or engage in the facilitation. Text and visuals can prove problematic since people interpret them differently. Emotional problems may also arise if the facilitator uses disturbing, dull, or unattractive imagery. Hierarchy, the exercise of authority, changes in turn-taking, uneven involvement, and cross-cultural disparities are examples of the social challenges that might occur (ILT Brief 2011: 6). Such disadvantages affect nearly everyone, especially in business, educational, small group, wraparound, and conflict resolution facilitation. Bailey (2011: 14) emphasises that the way information is presented, and the technique used to help a group to quickly assimilate are key for successful graphic facilitation.

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\* Ngcoya 2019; Koberidze & Tsereteli 2019; Muller *et al.* 1993; Valenza & Adkins 2009; Ball 1999; Mendonca 2016; Bailey 2011; Sibbet 2001; ILT Brief 2 2011: 5.

### 2.6.3 Graphic facilitation workflows

In a graphic facilitation workshop, there are two roles: participants and a facilitator. The graphic facilitator sometimes uses pre-made templates which may be loose and free-flowing or tightly structured (Ball 1999). A range of materials is used to note ideas using words and graphic icons on paper. The graphic facilitation literature search revealed ten graphic facilitation workflows (see table 2.6).

Table 2.6: Graphic facilitation workflows\*

<b>Workflow 1</b> (Koberidze & Tsereteli 2019)	<ul style="list-style-type: none"> <li>- Planning</li> <li>- Implementation</li> <li>- Evaluation</li> </ul>	<b>Workflow 2</b> (Valenza & Adkins 2009: 42)	<ul style="list-style-type: none"> <li>- Participants vocalise ideas</li> <li>- Ideas are noted symbolically on large sheets of paper</li> </ul>
<b>Workflow 3</b> (Bailey 2011)	<ul style="list-style-type: none"> <li>- Briefing by the client</li> <li>- Planning the workshop</li> <li>- Finalise workshop</li> <li>- Prepare output report for future reference</li> </ul>	<b>Workflow 4</b> (Muller <i>et al.</i> 1993)	<ul style="list-style-type: none"> <li>- Plan with the participants</li> <li>- Develop a working session plan</li> <li>- Set up the physical working site</li> <li>- Start session</li> <li>- Encourage participants to talk by asking questions</li> <li>- Note down ideas with simple images, shapes, and text</li> </ul>
<b>Workflow 5</b> (Ngcoya 2019)	<ul style="list-style-type: none"> <li>- Obtain topic</li> <li>- Prepare workshop template with/ without the group</li> <li>- Start the workshop</li> <li>- Break the group into smaller groups</li> <li>- Ask the group to contribute visually on the whiteboard/paper</li> <li>- Reflect on the workshop</li> <li>- Close workshop (Redraw on clean paper, expand, and filter what is important)</li> <li>*the process is important</li> </ul>	<b>Workflow 6</b> (Ball 1999)	<ul style="list-style-type: none"> <li>- Understand the subject matter</li> <li>- Plan</li> <li>- Pre-make templates (create icons based on the subject matter)</li> <li>- Facilitate meeting</li> </ul>
<b>Workflow 7</b> (Gadsby 2021) For digital facilitation	<ul style="list-style-type: none"> <li>- Find the right graphic recorder tools</li> <li>- Identify in advance the best times for using graphic recording in your agenda</li> <li>- Align with the facilitator</li> <li>- Ways of sharing the graphics during the meeting</li> </ul>	<b>Workflow 8</b> (Mendonca 2016: 136)	<ul style="list-style-type: none"> <li>- Dialogue between participants</li> <li>- The graphic facilitator actively records participants' dialogue in real-time</li> <li>- Participants clarify or respond to any misrepresentation</li> <li>- The graphic facilitator amends accordingly</li> <li>- Workshop ends</li> </ul>

\* Koberidze & Tsereteli 2019; Valenza & Adkins 2009: 42; Bailey 2011; Muller *et al.* 1993; Ngcoya 2019; Ball 1999; Gadsby 2021; Mendonca 2016: 136; Tyler, Valek and Rowland 2005: 140-1411; Gharbo 2020

	<ul style="list-style-type: none"> <li>- Test the technology ahead of time</li> <li>- Consider images that are powerful vs. sensitive</li> <li>- Invite interaction!</li> <li>- Leverage the chat</li> <li>- Have a strategy for capturing breakouts</li> <li>- Walk through the graphics</li> <li>- Mail the images to the participants</li> </ul>		<ul style="list-style-type: none"> <li>- The graphic record is shared after the workshop with every participant</li> </ul>
<b>Workflow 9</b> (Tyler, Valek and Rowland 2005: 140-1411)	<ul style="list-style-type: none"> <li>- The workshop is framed by a progression of questions that suit the workshop participants and the topic at hand</li> <li>- Graphics are captured from the discussion.</li> <li>- Graphics are used to sway the participants in the prescribed direction</li> </ul>	<b>Workflow 10</b> (Gharbo 2020)	<ul style="list-style-type: none"> <li>- Work from left to right back and forth</li> <li>- Summarise and connect ideas with concepts from conversations</li> <li>- Concepts are translated into large scale hand-drawn visuals</li> <li>- Work in real-time in the workshop (spelling mistakes, etc., are ignored)</li> <li>* Sometimes visual summaries are created after meetings or events</li> </ul>

These workflows in table 2.6 have different phases, but their outcomes are the same: capturing ideas, discussing and solving problems, and engaging the participants. Similarly, researching the materials and what graphic facilitation entails gave the researcher a better understanding of how graphic facilitation workshops are conducted. These workflows are the essential steps and procedures for conducting a successful graphic facilitation workshop. All the workflows include a briefing stage where the facilitator is briefed before starting a graphic facilitation session, which they then research (Ngcoya 2019). The facilitator then creates a visual library where images are broken up into “icons or visuals (which would be) easily available for later use” (Ngcoya 2019). The visual library can be a small book or A4 pages where words are noted together with the icons that best represent them. If necessary, the facilitator can search online for ready-made icons, and select those that best fit the context and can be drawn quickly (Ngcoya 2019). Later, a template based on the workshop topic is created for the workshop, either with or without the participants, depending on the brief.

A template may be a chart, a visual aid or something that has been prepared by the facilitator ahead of time, that the workshop participants use within the workshop as a graphic tool to record group work (Grocholl, Jershov and Orav 2016: 38). Templates may also be created within the workshop, although some workflows start the workshop without creating any templates in advance. The physical site of the workshop is then set up and the workshop commences. The graphic facilitator may produce a report on the workshop after it has taken place.

#### **2.6.4 Group graphics**

David Sibbet developed group graphics which are “...graphic facilitation concepts...” with “...archetypal templates and an icon language” (Ball 1999; Congleton 2011: 7). Sibbet (2001: 3) explains that he used grammar for visual language, which he derived from a focused investigation of visual thinking from a process perspective inspired by Young’s “Theory of Process” (ToP). According to Sibbet (2001: 4), graphics are traditionally static artefacts comprised of a combination of lines, colours, spatial relations and patterns of connection. One focuses on the fundamental quality of the graphics, the process of how the graphic came to be, and the process one needs to go through to understand it. The two key points are:

1. How do we look at things visually?
2. What’s the process by which people scan, focus, drill-down and zoom?

This is the same concept or process used by graphic designers in visual communication to create signs and symbols and make use of semiotics (Davis 2012: 104; Guiraud 1975: 1; Hembree 2006: 16; Fiske 2010: 38). A graphic designer employs the same thinking when making either signs or symbols:

1. What is this sign going to stand for?
2. Will the target audience be able to interpret it? How? and in what condition?

Sibbet (2001: 4) realised that it was important to understand all the properties of the process because a graphic facilitator uses active ingredients to help the group effectively. The Group Graphics Keyboard emerged from Sibbet's (2001: 4) thinking (see figure 2.14).

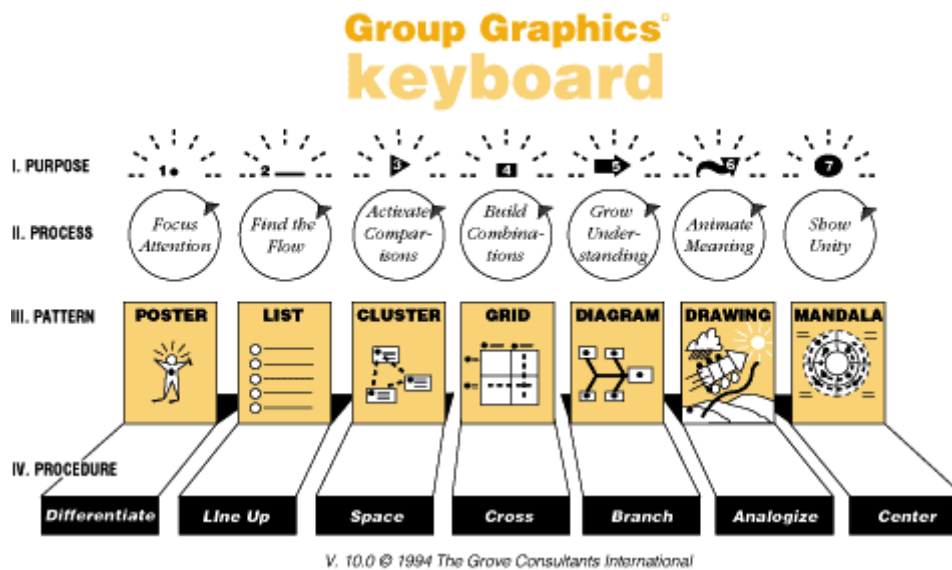


Figure 2.14: Group graphics keyboard 12<sup>th</sup> version (Sibbet 2001: 4)

The Group Graphic Keyboard consists of seven fundamental types or categories, namely, poster, list, cluster, grid, diagram, drawing and mandala. Based on Young's theory, Sibbet (2001: 4) noted that the most fundamental element in any process is the potential of the graphic. A dot or point (a bullet point) doesn't say much, but it attracts one's eye which is key to graphic facilitation. '**POSTER**' is also key in getting the viewers' attention, normally with one central, eye-catching image which is achieved by placing "an icon on a blank piece of paper" (Sibbet 2001: 5). Cognitive scientists have noted that our most basic visualisation processes are driven by orientation or 'intention'. This normally occurs because when perceiving what a visual means, the cognitive act is snagged by the difference of the marks (lines, shapes and strokes) forming the visuals while focusing on something else (Sibbet 2001: 5).

The second fundamental process is the '**LIST**'. Most people do not think it is an actual graphic, but a "format that flows linearly" (flow of information) (Sibbet 2001: 5). A line helps to connect two points, so that when one looks at a line the eye moves from one point to another, akin to when a viewer is linking their psyche from one thought to another (Sibbet 2001: 5). Sibbet (2001: 5) found that the "line quality and body movement express the emotional quality of a meeting" whereas, "colour also expresses a feeling." Hence, it is key for the facilitator to use coloured lines to engage participants and put them at ease. This element is about finding the flow.

In mathematics, three lines make a plane, and three lines connecting one another make a triangle. Three sticky notes on a chart will compel the viewer to understand the relationship

between them (Sibbet 2001: 5). This is called a '**CLUSTER**' map (Sibbet 2001: 6), the third fundamental process. Placing the sticky notes next to each other activates group thinking because the human brain always tries to connect things that are next to each other. This shifted Sibbet's (2001: 6) thinking in that it is not just about "...displaying but the interaction of the display with the viewer." Hence when the viewer sees the display, he/she makes connections that he/she would not have thought of, which can give one a bird's eye view and potentially, new insight that may assist in solving a problem. This element activates comparisons.

The fourth fundamental process is '**GRIDS**', the arrangement of elements within a page. Calendars, books, charts, maps, magazines and spreadsheets (Sibbet 2001: 6) all use grids. The brain thinks in related categories especially when it concludes that, "crossing categories and seeing systematic relationships is the process supported by a grid" (Sibbet 2001: 6). This is key to group graphics in that it is the most constraining format, since filling in the spaces is very difficult unless the distinctions between categories are clear. Sibbet (2001: 6) searched for patterns within graphic communication based on what Young had seen. Young's ToP "...integrated (a) set of tools for understanding the evolution of life and consciousness in many fields of study" (Sibbet 2003). "Young saw the process through nature building on one itself in a nested way" which he asked Sibbet to apply within his field (Sibbet 2001: 6). Sibbet applied Young's ToP in "...graphic communication and found... the simpler formats like posters and lists become the basis for the more complicated cluster and grid charts" (Sibbet 2001: 6). "It is possible to have lists in clusters, and (also place) lists and clusters (with)in grids." (Sibbet 2001: 5). The grids help to build comparisons. Based on Young's ToP, "Atoms become molecules and crystals and they can be broken and regain freedom...", which is key because:

*"When matter finds the combinatory rules at the molecular level, it can then turn back towards freedom through the evolved structure of plants, animals and humans." (Sibbet 2012: Appendix)*

"All plants have branching patterns..." which Sibbet (2001: 5) noted are part of Young's scheme. The fifth fundamental process is '**DIAGRAMS**' likened to plants branching out. This concept is borrowed from Tony Buzan's Mind Mapping, which explores the furthest reaches of one's "...current thoughts in search of a new centre to replace the old. And in due course, this new centre will itself be replaced by a new and even more advanced concept" (Buzan and Buzan 1994: 160). According to Sibbet (2001: 5), the human brain is uniquely set up to arrange things in branching patterns. Branching diagrams are freer than grids but they can be more complex to assimilate and understand in that a lot of information "...can branch anywhere (and) not just in a cell" (Sibbet 2001: 6). This helps to grow one's understanding of the topic at hand.



The next evolutionary stage in Young's scheme is occupied by animals and is based on their movement, animation (Sibbet 2001: 7). Young highlighted that animation involves the movement of people in graphic facilitation within the workshop, since the facilitator and participants move around and about while drawing. Sibbet (2001: 7) emphasises the animation of how the facilitator moves in front of the audience when he/she "...add(s) analogy and graphic metaphor to a graphic display". "Conceptual animation occurs when the graphics themselves symbolically point at something that the viewer already knows and the viewer projects movement back into the graphic" (Sibbet 2001: 7). The facilitator's movement grabs the participants' attention, engaging them as the workshop progresses.

**'DRAWINGS'** are the sixth fundamental process that simplifies complex concepts with the potential to catalyse new insights during a graphic facilitation workshop. Through an interpretive approach using elaborate drawings and illustrations, the work comes alive within those visual constructs (Sibbet 2001: 7). This helps to bring meaning to life by animating it.

The seventh and final fundamental process is the **'MANDALA'** which are circular drawings that act like a universal symbol of wholeness and unity (Sibbet 2001: 7). This is the holistic view of everything in which the mind has to figure out how everything relates. It requires the most insight. Sibbet (2001: 7) notes that a pattern of ultimate complexity and inclusiveness would conclude the group graphics.

According to Sibbet (2001: 7), these seven fundamental processes have been tested by hundreds of practitioners and if the need arises, new ones will be added. "All graphic patterns are one or a combination of these fundamental processes" (Sibbet 2001: 7). Every graphic facilitator should appreciate these concepts, which can simplify their work when conducting facilitation. The facilitator captures and "...illustrates the connections among and the flow between ideas" in the workshop with the participants (Ball 1999). Graphic facilitation is not just about making pleasing visuals; the facilitator has to apply his/her listening and drawing skills while working, bearing in mind that synthesising and the representation of ideas are essential to the whole process (Mendonca 2016: 130).

According to Bailey (2011: 14), graphic facilitation works because everyone in the workshop sees and hears the subjects under discussion, and it helps the participants to reach agreement. Engaging with every participant allows them to speak their mind. Individuals also feel

personally involved because they see “...their own words and thoughts reflected...” (Tyler *et al.* 2005: 145 cited in Congleton 2011: 9).

Depending on the number of participants, the participants in a graphic facilitation workshop can be divided into smaller groups, or they can circle the charts where they then discuss and contribute. To keep everyone engaged and to make their contribution valued, participants are asked to draw on the charts. They can laugh at how funny the drawings are, keeping the atmosphere welcoming and light. The participants also remain engaged “because they can see their contributions being fed in and are valued as they see themselves as part of the process and feel listened to” (Koberidze and Tsereteli 2019).

## **2.7 Potential and identification of a gap in the literature**

As highlighted earlier, visual plagiarism is ill-defined and many grey areas need to be clarified for students to understand it. Although students plagiarise for many reasons, they should be taught the concept of plagiarism; hence, teaching graphic design students at DUT about the creative process, visual ideation, communication theory, semiotics, and originality might help them to avoid plagiarism. This issue required further investigation since extensive searches did not reveal any studies on the use of these techniques to help students to shun plagiarism.

Graphic facilitation has been used since 1970 (Hautop and Ørngreen 2018: 59) for problem-solving and ideation, and these three elements should work together to enhance students' engagement and learning. This could help local students to be less prone to plagiarism, which this study sought to understand. Plagiarism can be dealt with in several ways; for this project and context, the researcher proposed ideation using graphic facilitation as a possible solution.

## **2.8 Summary**

This chapter reviewed the literature on learning theory and constructivism, Mednick's theory of creativity, originality and plagiarism. It identified a gap in the literature in that visual plagiarism is ill-defined for graphic design students, and little researched in South Africa. There is a need for more research on the impacts of graphic facilitation (Hautop and Ørngreen 2018: 59; Congleton 2011: 10) in this learning context. A literature search on the use of graphic facilitation in teaching design or learning graphic design produced no results, suggesting a further gap. The literature on graphic facilitation is discussed in chapter 4 in the context of the workshops; previous use, material, elements, resources for graphic facilitation, and the disadvantages and advantages. Hence more research is also required on how creativity and

ideation could be encouraged through graphic facilitation; it is this gap that this study sought to fill.

The following chapter presents the action research methodology employed for this study, influenced by Mednick's (1962: 220) associative theory of creativity, Emmert and Donaghy's (Davis 2012:17) model of communication, semiotics, and Petty's (1997: 15) creative process to encourage creativity and ideation through graphic facilitation. This involved students participating in active ideation sessions and brainstorming.

# **Chapter 3**

## **Methodology**

### **3.1 Introduction**

The literature review helped the researcher to gain an understanding of current knowledge and debates relevant to the topic and, in turn, to identify gaps in the literature. This chapter focuses on the methodology employed to conduct the study. It discusses the research paradigm, the research design and the data collection methods employed in the action research Cycles 1 through 3, as well as data analysis procedures, and ethical considerations. The chapter discusses issues of trustworthiness, that is ensuring credibility, reliability, dependability, transferability, and confirmability as well as bias and how it was minimised. The delimitation and limitations are discussed and the chapter concludes with a summary.

### **3.2 Research objective**

This study investigated the applicability of graphic facilitation for ideation in graphic design within South African tertiary institutions. It aimed to develop and recommend an ideation process that could be adopted by second- and third-year graphic design students to reduce visual plagiarism.

The critical research questions were:

- i. What is the applicability of graphic facilitation in a tertiary graphic design setting?
- ii. What ideation processes are currently employed by the participants?
- iii. To what extent are students interested in developing creative new ideas, and aware of the importance of such ideas?
- iv. What are the benefits of adopting graphic facilitation?
- v. How can plagiarism be investigated in the ideation process through the use of graphic facilitation?

### **3.3 Theoretical framework**

The theoretical framework for this research was based on the associative theory of creativity (Mednick 1962), the Emmert/Donaghy model of communication (Davis 2012: 17) and Petty's creative process (Petty 1997). As discussed in the literature review, these theories assisted the analysis of the data gathered during the workshops and interviews. While graphic facilitation and ideation are seemingly unrelated, the researcher identified a potential link that could assist

students to learn to follow the creative process and tackle plagiarism. Furthermore, graphic facilitation may assist students in applying the creative process and becoming more creative. The Emmert/Donaghy model of communication (Davis 2012: 17) and the associative theory of creativity (Mednick, 1962) were used to assess the originality, appropriateness of the context, and feedback of ideas generated by the students. Petty's creative process (Petty 1997) was employed to assess if students followed the creative process and completed the essential ideation processes. Table 3.1 provides a summary of the theories and how they were applied in this study.

Table 3.1: Theories guiding the study (Author's own)

Theory	Use
Associative Theory of Creativity (Mednick 1962)	Evaluation of the uniqueness and number of ideas/concepts derived from associations made by the students
Emmert/Donaghy Model of Communication 1981 (Davis 2012:17)	Evaluation of the effectiveness of the context and feedback of the ideas generated as messages that communicate effectively to the intended audience
Petty's Creative Process (Petty 1997)	Evaluation of whether students followed the creative process and the required ideation steps

### 3.4 Research paradigm

A research paradigm is a worldview that encompasses “a basic set of beliefs that guide action”, that the researcher brings to the study, leading to the identification of the most suitable research approach, and guiding the nature of enquiry based on ontological, epistemological and methodological assumptions (Bailey 2007; Blanche *et al.* 2006:6; Creswell 2014:35).

The researcher adopted an action research methodology within an interpretive paradigm, making use of qualitative methods. The nature of knowledge and the relationship between the students and the researcher helped the researcher to position himself in the research context so that he could discover what is unknown, given what is known. This chapter elaborates on the methods the researcher used in looking for human knowledge. Having investigated research methods for educational practice, action research was found to be suitable. Furthermore, the researcher works within the context where students work on assignments, and where incidents of visual plagiarism and the use of the creative process occur in the researcher's natural setting. The researcher also researched students' worldviews in their natural setting so as to better understand their perceptions and why they work the way they do.

Given that the researcher needed to test and iterate (investigate, implement, reflect and refine), the action research method was most suitable to investigate the usefulness of graphic facilitation and student visual plagiarism. It assisted the researcher to take control of both personal and professional development, and it was vital in that it enhanced the reflective teaching process, raising awareness and enabling instantaneous application of the findings in every iteration. An action research methodology within an interpretive paradigm is widely used in educational research to “understand what happens in social situations and negotiate meanings” (McNiff and Whitehead 2011: 46). Likewise, this study was situated within an education setting to improve learning and teaching practice.

The interpretive paradigm holds the ontological belief that there are multiple realities which are socially constructed (Bailey 2007; Kivunja and Kuyini 2017). It assisted the researcher to understand the participants' daily experiences and increase understanding of their problems in their natural setting since the researcher was interested in the meanings the participants attached to these events (Blanche *et al.* 2006; Bailey 2007). The researcher viewed his relationship with the participants as an empathetic one and thus took their personal feelings, tastes and opinions into account. The interpretive paradigm allows the researcher to understand the universe from individuals' subjective experiences. It utilises methodologies that help to clarify the subjective reasons behind social actions (Antwi and Kasim 2015); it thus enabled the development of interventions that made use of the students' understandings and preferences. The key characteristic of this paradigm is that it assesses and refines interpretive theories (as in table 3.1 above) with the epistemological belief “...that what is learned in research does not exist independently of the researcher...”, and also acknowledges the tendency to bias (Bailey 2007: 54). The researcher learns from the participants, bearing in mind at every stage the bias he/she might bring in interpreting what is occurring around the participants (Bailey 2007: 53).

The interpretive paradigm was used to understand the ideation processes that graphic design students go through by interacting with and observing the students within their environment, which is the usual methodology of an interpretive paradigm (Bailey 2007: 53). In this study, the researcher sought to move into the students' reality to view the world from their understanding, based on the research strategies in table 3.2 (Bailey 2007: 53).

Table 3.2: Research strategies (Author's own)

Research focus area	Research discussion points
Research paradigm	Interpretive paradigm
Research method	Interviews Observation
Research approach	Qualitative method
Research design	Action research Qualitative
Sampling method	Purposive sampling
Research instruments (Tools used to collect data)	Observation sheets Semi-structured interview question guide Graphic Facilitation Workshop Design briefs Ideograms
Data analysis	Thematic analysis

### 3.5 Research approach

The researcher adopted a qualitative approach. Qualitative research involves an interpretive and naturalistic approach to the world, in which the researcher studies things in their natural settings, attempting to make sense of and interpret a phenomenon in terms of the meaning people bring to it (Denzin and Lincoln 2005, cited in Flick 2007). Thus, qualitative research designs tend to be “more open, fluid and changeable and ... not defined purely in technical terms” (Blanche *et al.* 2006: 35). They enable a more responsive approach to changing human circumstances. Scholars note that qualitative research focuses on studying a complex phenomenon and aims to bridge a “power gap” between the research participants and the researcher (Leedy and Ormrod 2005: 133; Kumar 2014: 104)).

The ‘power gap’ refers to the perception that the researcher has more control over the project than the participants, in this case, students. This gap exists in that the researcher says what will happen, and the students have to go along with his decisions or else not participate, which is the case in a normal lecture setting. In this case, the graphic facilitation workshop setting was a friendly one, and was more relaxed than a straightforward lecture situation. Rather than a hierarchy where the facilitator is superior to students, the researcher aimed to provide a more equal setting, in which the students and researcher were more at the same level. The relationship between students and lecturers is fairly informal in a graphic design learning environment, but

a power gap still exists; it is smaller between students and a researcher/tutor. The study of design is more open, fluid, changeable and informal

### **3.6 Population**

The research population “...is the larger pool from which...” the study’s “...sampling elements are drawn and to which we want to generalise...” the research findings (Blanche *et al.* 2006: 133). The population for this study comprised of both students and lecturers, from which a sample of the individuals from whom the data was gathered was selected. The student population comprised 89 second- and third-year graphic design students (54 males and 35 females) at DUT. The demographic characteristics of the student sample were:

- I. 10-18 participants
- II. Aged 18-25
- III. Second- and third-year Graphic design students at DUT
- IV. Any nationality
- V. A breakdown of the student sample is elaborated in section 3.7 and tabulated in table 3.3

The lecturer population comprised of ten Graphic Design lecturing staff at DUT (three Black, four White and three Indian with six males and four females). The characteristics of the lecturers' sample were:

- I. 5-10 participants
- II. Aged 30 – 55
- III. Second- and third-year Graphic Design lecturers at DUT
- IV. Lecture graphic design students
- V. Know what students have been taught
- VI. Know what is required of students
- VII. Know the type and quality of work students submit
- VIII. Know how students think and execute their work
- IX. Are familiar with the graphic design curriculum

### **3.7 Sample and sampling technique**

Sampling is the selection of research participants who are representative of an entire population. It involves decisions about which people, settings, events, and/or behaviours the researcher wants to investigate (Blanche *et al.* 2006: 49; Explorable 2019; Thomas 2017: 141). Sampling is necessary because the researcher cannot test everyone in a population. A representative



sample is selected from the entire research population to enable the findings to be generalised to it (Flick 2007; Explorable 2019).

Purposive sampling was used to select a sample from the student and lecturer populations. This is a non-probability sampling method where the researcher deliberately selects participants who are representative of the entire population based on certain criteria (Blanche *et al.* 2006; Gray 2009; Kumar 2014). It enabled the researcher to select a sample made up of students in a particular class who were willing to participate. Purposive sampling is mainly used when the researcher wants to focus on an area of knowledge or learning that the research population is expected to know about, thereby helping to identify the most relevant potential participants.

The sample was drawn from the student population of 54 male and 35 female second- and third-year graphic design students at DUT. The lecturer sample comprised of five (two males and three females) second and third-year graphic design lecturing staff aged 25 to 53. They were selected because they lecture second- and third-year graphic design students. Participation in both groups was voluntary. Eighteen students took part in Cycle 1, of which ten were in second year and eight in third year. Third-year students only participated in Cycle 1 since it was the first semester which theoretically made them second-year students and enabled the researcher to gain an overview of students' graphic design practices. There were ten second-year student participants in Cycle 2, with no third-year students part of the sample for this cycle. Twelve second-year students took part in Cycle 3. The total number of participants who participated is elaborated in table 3.3.

Table 3.3: Research sample size and population breakdown (Author's own)

Cycle		2 <sup>nd</sup> year	3 <sup>rd</sup> year	Sample size	Population
1	Students	10	8	18	89
2	Students	10	0	10	89
	Lecturers			5	10
3	Students	12	0	12	89
	Lecturers			3	10

A different group of students participated in Cycle 3. Had the researcher used the same students for the second workshop (Cycle 3), they would have had preconceived ideas about the graphic facilitation workshop and the design brief since it would have been the second time they participated, thereby biasing the research findings and results (see chapter 4). This would not

have been effective in providing a way to analyse the data and draw conclusions on the applicability and effectiveness of graphic facilitation in helping students ideate. It would have been impossible to substantiate what the students had learned and applied in the research results; hence the use of two groups of students. Action research aims to demonstrate how the researcher's treatment improves the situation; however, in this case, a workshop was conducted before students worked on a graphic design assignment and interviews were conducted.

### **3.8 Research design**

A research design is the procedural-cum-operational action plan to conduct a study (Creswell 2013: 49; Kumar 2014: 122). The research plan, which is the “...overarching plan for the collecting, measuring and analysis of data will help describe, (and) address the purpose of the study and the questions being addressed” (Gray 2009: 132). It assists in selecting appropriate, relevant techniques for data collection, and choosing the sampling method and tools for analysis (Gray 2009: 132). The research design is a strategic framework for action that serves as a bridge between the research questions and the execution or implementation of the research (Blanche *et al.* 2006: 34). In this study, the observation, workshops, and semi-structured interviews were designed and planned based on rationales that were justified at every stage of the research, helping to answer the research questions (Kumar 2014: 123; Blanche *et al.* 2006: 34). The rationale for the choice of the research instruments was as follows:

- a) Observation enables comprehensive understanding of a phenomenon (visual plagiarism among students)
- b) Workshops present a new subject, urge students to illustrate and encourage the use of a certain idea (Petty's creative process and Graphic facilitation)
- c) Interviews help to investigate participants' (students') thoughts, feelings, and opinions about a phenomenon (the creative process and graphic facilitation and gathering data)

This is further discussed under section 3.9 Data Collection Instruments on page 63.

There have been several incidents of visual plagiarism in the Graphic Design department at DUT, and they are increasing in frequency among graphic design students. Knudsen and Zama (2019 personal interviews, 1 June), lecturers within the department, expressed concern about these incidents, and noted that students focus on execution of the final design work rather than on the process of originating creative ideas and solving communication problems before commencing the research. While graphic facilitation has been used internationally and locally

for problem-solving in the business world, to the best of the researcher's knowledge, it has not been applied to graphic design education. The research was designed to take account of these features.

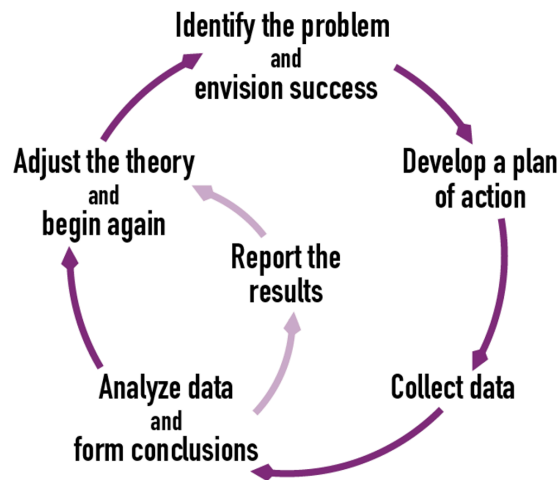


Figure 3.1: Action research spiral adapted from Kolk (2009:15).

Action research is a form of research design that involves research, collaboration, action, and participation, which occur simultaneously (Coghlan and Brannick 2004 cited in Gray 2009). It makes use of an iterative spiral of research cycles encompassing four phases, namely, planning, acting, observing and reflecting (Kemmis and Mc Taggart 1999 cited in Stringer 2007: 8). Numerous authors have described action research using different phases in the cycles (McNiff and Whitehead 2011: 10; Kemmis and Mc Taggart 1988; Stringer 2007: 9), all emanating from Lewin's "plan, act, observe and reflect" highlighted above. The researcher followed Kolk's (2009) model that comprises a six-phase research cycle, as follows:

1. problem identification and perceived ideal situation,
2. action plan,
3. data collection,
4. data analysis and interpretation,
5. reflect and iterate (adjust the theory),
6. report results.

In this way, action research helps to generate new knowledge that is necessary to transform situations by applying results that work. It is a participatory process in which everyone involved takes responsibility for the part they play (Greenwood and Levin 2007). It hinges on collaboration between the researcher and practitioners (in this case, lecturers and students) where they analyse the world and try to change it (Greenwood and Levin 2007: 3; Gray 2009: 30, 312; Mackenzie *et al.* 2012). The epistemological assumption underpinning action research

is that knowledge is uncertain, and its creation is a collaborative process, which tied in with the focus of this study (McNiff and Whitehead 2011: 30-33).

Action research was appropriate for this study that sought to understand students' interpretations of visual plagiarism, ideation and the effectiveness of graphic facilitation, and the cyclic nature, and to test and revise interventions. While other methods exist that could cover testing, action research is the only methodology suitable to help solve the problem and answer the research question. The action phases are tabulated in table 3:4.

Table 3.4: Action phases followed for the research (Author's own)

	<b>Problem identification and perceived ideal situation</b>	<b>Action Plan</b>	<b>Data Collection</b>	<b>Data analysis and interpretation</b>	<b>Reflect and iterate (adjust theory)</b>
<b>Cycle 1</b>	Students have increasing visual plagiarism issues. Envisioned ideal: increase in original creative design work, and students avoiding visual plagiarism.	Observe students' current practice working on assignments (reconnaissance)	Observe students' current design practice	*Students work haphazardly and inconsistently, not following any set creative/ ideation process	Students might be working haphazardly because they might not know what a creative process is or how to work through it, thereby being prone to visual plagiarism
<b>Preparation for Cycle 2</b>	Graphic facilitation workshop development Pretesting interview questions for graphic design lecturers and students Creation of six ideograms of Petty's creative process				
<b>Cycle 2</b>	Students work haphazardly on assignments and tend to plagiarise. Graphic facilitation has not been applied in a graphic design education setting. Envisioned ideal: Students following Petty's or other predetermined	Graphic facilitation workshop for students to work on a design brief encompassing Petty's creative process. Students observed in the workshop.	Students' ideas: Semi-structured interviews with workshop attendees. Semi-structured interviews with graphic design lecturing staff	* Students' instruction in the creative process is not emphasised; hence, misconceptions of graphic design terminology, theoretical concepts and visual plagiarism issues. Graphic facilitation helped	Since it was noted earlier that students work haphazardly it was found that students might not understand design theoretical concepts which might result from the lecturers' instruction on ideation

	creative processes and being less prone to plagiarism			students come up with ideas.	
<b>Preparation for Cycle 3</b>	Refinement of interview questions for Cycle 3 Emphasis on students grasping graphic design terminology and concepts				
<b>Cycle 3</b>	Misconceptions of graphic design terminology, theoretical concepts, and tendency of visual plagiarism. Envisioned ideal: students understand and can apply design terminology and theoretical concepts.	Graphic facilitation workshop encompassing creative process ideograms, helping students understand graphic design terminology, theoretical concepts and visual plagiarism. Students observed in the workshop.	New students' ideas; amended semi-structured interviews with new workshop attendees. Amended semi-structured interviews with the same graphic design lecturers	*Students were better able to generate superior ideas and learnt the graphic design creative process concepts from the workshop. Their understanding of concepts and terminology improved.	Students grasped the ideation process. Hence, graphic facilitation was effective in reducing cases of visual plagiarism.

The researcher noted several instances of visual plagiarism in graphic design students' work, and lecturing colleagues complained of the frequency of these cases (see page 2, section 1.2). In Cycle 1 the problem was identified as the rise in cases of visual plagiarism amongst graphic design students, and the envisioned ideal situation was an increase in original creative design work and students who are less prone to plagiarise. The researcher developed a plan of action which was executed by observing second-year graphic design students at DUT working on design assignments in their studio time (14<sup>th</sup> of June 2020). This activity helped to uncover the students' current knowledge, meaning, value, and understanding of ideation and visual plagiarism (page 79, section 4.2 below). The findings from the observation were analysed. Students might face a disequilibrium when learning, fail to assimilate concepts they are learning, and settle into their comfort zone and look for the easy way out, thereby falling prey to visual plagiarism. Furthermore, inconsistent ideation or creative processes might lead to plagiarism.

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\* See chapter 4 for a full discussion on the findings.

Based on these findings, the researcher adjusted the action plan for Cycle 2 to establish why students work haphazardly and how to help them avoid visual plagiarism. In preparation for Cycle 2, the researcher developed a plan with three interventions: firstly, he developed a graphic facilitation workshop; secondly, he created six ideograms for the different stages of Petty's creative process; and lastly, he created and pretested the interview question guides for the lecturing staff and students.

As highlighted in the literature review (page 38, section 2.6), graphic facilitation was initially used to solve problems within a business setting. The creative process, especially ideation, is used by students and graphic designers to solve design problems. Graphic facilitation and ideation are two unconnected concepts; however, the researcher identified a promising link, which might solve the plagiarism issue and help students to learn to follow the creative process. Graphic facilitation might help students to apply the creative process and become more creative.

To develop a useful model for the workshops, the researcher synthesised the different graphic facilitation workflows from the literature into the one used in this study. The workflow implemented by the researcher was as follows:

- Research the creative process and visual plagiarism
- Plan the workshop
- Create a visual library of icons to use in the workshop
- Set up the physical site for the workshop
- Explain briefly to the students
- Start and conduct the workshop
- Close workshop
- Reflect on workshop
- Compile an output report

Secondly, the researcher created ideograms for each of the six phases of Petty's (1997: 15) creative process (see figure 3.2). Ideograms are graphic symbols that represent an idea or concept: an 'idea' icon (Haldemann 2014). Of the six phases of Petty's (1997: 15) creative process, as highlighted above (page 22, section 2.4.1.1), this research focused on the generation of ideas within ideation. The creative process of generating, testing, and iterating ideas that leads to problem-solving solutions is known as ideation (see chapter 2). The generation of ideas

within ideation is covered by three phases (inspiration, clarification and incubation) in Petty's creative process.

These ideograms were used to reiterate the creative process and help students to understand which part of the process was being focused on in the workshop. They were also used to help students to understand the six phases of the creative process.

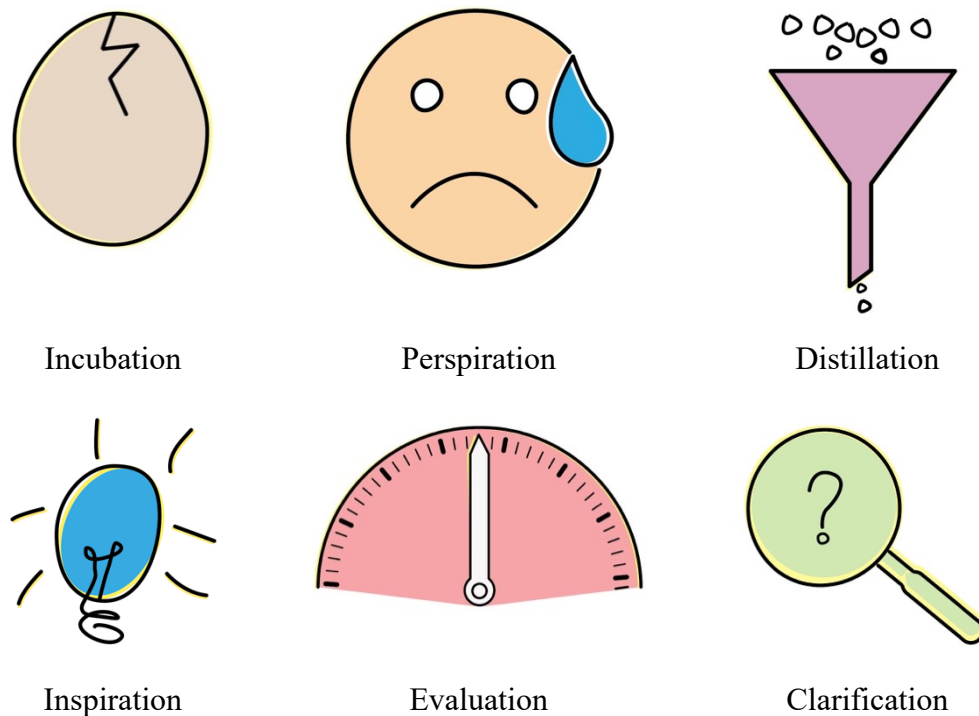


Figure 3.2: The six ideograms of Petty's creative process (Author's own)

Lastly, interview question guides were created and pretested in interviews with the students on the 30<sup>th</sup> of May 2020 and lecturers on the 1<sup>st</sup> of June 2020. In pretesting, the questions in an interview guide "...are tested on members of the target population, to evaluate the reliability and validity of the research instrument..." before using it (Hu 2014). These question guides investigated how effective the workshop was, and the students' new perceptions of the concepts of visual plagiarism, the creative process and ideation. Similarly, the interviews with lecturers sought their new opinions on the students' work and understanding of the concept of visual plagiarism; how the students benefited from the workshops; and how much students' work improved after the workshop.

Students' instruction in the creative process is not emphasised in their course; hence, misconceptions exist of graphic design terminology, theoretical concepts and visual plagiarism

issues. The design terminology and theory are generally taught separately from the ideation/creative process. As per Vygotsky's theory, when students are learning they are in disequilibrium; likewise, when teaching theory and ideation, which are two different concepts, the connection needs to be made, and if students cannot integrate the two, they might decide to take the easy route, retreat into their comfort zone and fall prey to visual plagiarism.

In Cycle 2 the problems were: students work haphazardly on assignments; they are prone to visual plagiarism, and graphic facilitation has not been tested in a graphic design education setting. As per the plan of action, the researcher conducted a graphic facilitation workshop for participants to work on a design brief, making use of the ideograms for Petty's creative process. The students' interviews were conducted on the 2nd of October 2020 soon after the first workshop at DUT City Campus, Room CA0104C, whereas the lecturers were interviewed on different dates on the 8th, 10th, 13th, 14th and 22nd of October 2020. The interviews were transcribed, and the data were analysed. Misconceptions regarding graphic design theoretical concepts and terminology were not what this research set out to solve; rather, the project focused on how these misconceptions may lead students to plagiarise and how they can be assisted through graphic facilitation. The researcher underwent another period of reflection before the planning of Cycle 3.

Based on the findings from Cycle 2, the researcher adjusted the theory to help students to grasp graphic design terminology and concepts as they relate to visual plagiarism; hence, an intervention was implemented before Cycle 3. The intervention planning consisted of refinement of the interview questions for Cycle 3 (see Appendix E) and emphasising graphic design terminology and concepts to the students. This aimed to assist them to grasp the graphic design terminology and concepts during the workshop. After the workshop, when students had worked on and submitted a design assignment, their lecturers were interviewed to establish if the students' understanding of these concepts had improved and if they demonstrated them in their design work.

In Cycle 3 the problem was that students still had misconceptions of graphic design terminology, and concepts, and remained prone to visual plagiarism. The action plan provided for a second graphic facilitation workshop encompassing creative process ideograms to help students understand graphic design terminology and concepts. The process used in Cycle 3



might seem similar to Cycle 2 but a different group of students participated in Cycle 3. The second workshop was conducted on the 19<sup>th</sup> of November 2020 at DUT City Campus, Room CA0104C. During the course of the workshop, photographs were taken by a student, and the researcher observed the students participating in it. This data was later used in the study. Following the workshop, interviews were conducted for 30 minutes per student in the same venue.

The semi-structured interviews with the lecturers were conducted on the 13<sup>th</sup> and 15<sup>th</sup> of December 2020 and the 12<sup>th</sup> of January 2021 on Microsoft Teams. These interviews were held after the students had worked on and submitted a design assignment. The data from the interviews were transcribed and students' ideas from the workshop were analysed.

### **3.9 Data collection instruments**

Several qualitative instruments were used to gather data for the study, including qualitative observation sheets, semi-structured interview guides, ideograms and workshops.

#### **3.9.1 Observation**

Observation involves the researcher watching and noting the "...behaviour and activities of individuals at the research site", whereas interviews involve a face-to-face enquiry with the participants to discuss the topic, which is recorded (Creswell 2014: 241). There are four key reasons for conducting observation, namely, it offers the researcher first-hand information on the participants in question; information is noted down as it occurs; unusual aspects can be observed; and lastly, it assists in investigating sensitive and uncomfortable topics with participants (Creswell 2014: 241). The researcher observed how students worked on their assignments and their approach to design projects or assignments. Observation helped to establish the students' pre-existing knowledge and practices. Familiarity with these enabled the researcher to examine and critique the current ideation processes employed by graphic design students.

#### **3.9.2 Interviews**

Not all aspects can be observed; interviews enable historical information to be gathered from the participant. They also give the researcher control "...over the line of questioning" where the researcher can ask the participant to elaborate on certain questions. McNiff and Whitehead (2011: 144) note that open-ended questions can be posed during interviews, allowing for a more personal response, which may be difficult to analyse, but offer a wealth of information and

insights. Interviews were conducted at the end of the action cycles to investigate how beneficial the workshops were to students. Each student who participated in the workshop was individually interviewed. The students were interviewed immediately following the workshop, whereas lecturers were interviewed after the students had completed and submitted an assignment. The lecturer and student interview guides were pretested with five participants each to improve their reliability and validity.

### **3.9.2.1 Interview questions**

The interview questions varied and aimed to establish what students knew and had been taught about graphic design theory and relevant concepts (visual plagiarism, ideation, mood boards and thumbnail sketches).

#### **Cycle 2 Amended Pretested Semi-Structured Interview Question Guide**

The amended students' pretested semi-structured interview question guide contained seven questions (see Appendix D (I)). Questions 1 and 2 focused on ideation, to establish what students knew and what they thought was important about it. This also helped to determine what they had grasped and been taught about ideation. Questions 3, 5 and 6 dealt with mood boards and aimed to establish how the students used mood boards, and conceptualised their ideas, and their reasons for using mood boards. Question 4 sought to determine students' understanding and reasons for using scamps (thumbnail sketches). Question 7 focused on students' understanding of visual plagiarism. These questions aimed to reveal the students' working methods, which could warrant changes. The last question (8) aimed to determine what the students learnt from the workshop.

The graphic design lecturers' semi-structured interview questions (see Appendix D (II)) contained 12 questions which sought to investigate what the lecturers had taught and their opinions on how students work. Questions 1, 3, 4, 5 and 6 focused on ideation, what they had taught students about this concept, and their opinions on ideation and the creative process. Question 2 identified which year they taught, while questions 7 and 8 rated students' innovation in responding to a brief the lecturer had given them in class. To analyse how well students followed the creative process and communicated with the target audience in current assignments, a scale of 1 to 10 was used, where 1 was poor, 3 below average, 5 average and 10 excellent. The lecturers were also asked to substantiate their opinions on students' innovation, which help the researcher to understand more about students' current work. Lecturers were asked to give an opinion on students' ideas in applying the creative process and whether their

work communicated effectively, based on the brief. Furthermore, the lecturers were asked to substantiate the reasons for their opinions on students' work in questions 9 and 10. Question 11 focused on students' ideation and idea development process, where lecturers were asked to give an opinion on what could be improved. Questions 12 and 13 concentrated on visual plagiarism and lecturers' opinions on students' understanding of this phenomenon.

### **Cycle 3 Semi-structured Interview Question Guides**

The graphic design students' semi-structured interview questions for Cycle 3 sought to determine if they benefited from the graphic facilitation workshops, via seven questions (see Appendix E (i)). Questions 1 to 4 examined what students had grasped and understood about graphic design terminology, theoretical concepts and visual plagiarism. Questions 5 and 6 focused on idea generation, to establish how the students came up with ideas and which ideas they generated in the workshop. Question 7 addressed how effective students felt the workshop was, and what they learned from it.

The graphic design lecturers' semi-structured interview questions in Cycle 3 investigated lecturers' opinions on what students had learnt and applied in the assignment they submitted after the workshop (see Appendix E (ii)). Questions 1, 2, 7 and 8 examined lecturers' opinions on students' innovation in these assignments and compared that work to previous assignments. Questions 3, 4, 5 and 6 focused on students' creativity, creative process, communication in responding to the brief for the current assignment, and a comparison with previous assignments. Questions 9 and 10 sought lecturers' opinions on students' understanding and use of graphic design terminology, theoretical concepts, and visual plagiarism, and what could be improved. The last two questions were for comparison purposes with the students' question guide to obtain a well-rounded view and minimise bias. In all the questions, lecturers were asked to justify their comments on students' work.

### **3.9.3 Workshops**

Workshops, which comprise of interactive sessions where researchers and several participants work intensively on a topic, are an unusual way of gathering data (AQR 2013). Workshops can be made more effective for data collection by arranging activities and providing an environment in which participants freely cooperate and engage (Ahmed and Asraf 2018), as the researcher did in this project. The researcher facilitated the workshop by standing in front of the students, with an A1 sheet of paper on the wall, while noting down the students' ideas and contributions. Workshops were employed because they engage students, maintain their concentration span

and broaden their “critical perspectives”, thereby enabling them to make analogies and encouraging learning (Ransdell 2001: 32). Haynes and Riordan (1996) note that participation in workshops is positively “related to students’ retention of information and academic achievement.” The researcher used several interventions to probe and engage the students in the workshop. Storytelling, relating the brief, providing ideas that link to real-life scenarios, and making the work interactive were among the interventions used. The workshops were important because the researcher sought to engage the students and enable them to think critically and actively to solve a real-life problem within the design brief. Only second-year students took part in the workshops for Cycles 2 and 3, whereas both second- and third-year students participated in Cycle 1.

### **3.9.4 The design brief and ideas produced by the students**

A design brief for **Kreative Design Strategy** (a fictional digital advertising agency) was used to elicit students’ ideas in the workshop (see Appendix B). The brief had four key deliverables, namely, logo concept, teaser, revealer and three social media adverts. Students had to come up with these deliverables within the workshop. The brief outlined that **Kreative Design Strategy** that was founded in 1999 had just rebranded to become a fully digital agency, to align with the fourth industrial revolution. Data was gathered from students' ideas generated in the workshop, and they were asked questions to prompt them to come up with further ideas. The target audience for the brief was individuals or companies looking for a digital advertising agency. This was used as a yardstick to measure whether the students had come up with appropriate ideas that communicated effectively with the target audience for the four key deliverables. These ideas were then either illustrated on paper or verbalised. Several different tools (Neuland markers, pencils and flip charts) were used to gather data on several different issues, such as how did students work? How did they develop ideas? How could the researcher communicate the brief to the students so that they understood? The interviews, combined with the brief and the workshops, were appropriate because they enabled the researcher to identify students’ pre-existing knowledge, and helped to develop revised practices with them, therefore informing the next cycle. By working on the design brief in the workshops, the students learnt about design principles through interacting with one another and the facilitator and focused on the creative process for ideation, which helped them to assimilate the principles that they could later apply to any design problem.

### **3.10 Data collection procedure**

In Cycle 1, the researcher utilised observation sheets to record the details of students' ideation processes, body language and behaviours while working on a graphic design assignment prescribed by the facilitator (Appendix B i, ii, iii). The observations were then analysed to feed into the following cycle.

In Cycle 2, the workshop ideas generated by the students were recorded on paper and their interactions with both the facilitator and the students were photographed in the workshop. After the workshop, one-on-one recorded semi-structured interviews were conducted with the participating students. Following the submission of the design projects, one-on-one interviews were held with the lecturers. These interviews were transcribed and analysed (see chapter 4) and the findings were used to develop Cycle 3.

In Cycle 3 the second workshop was conducted with the student participants. Students' interactions were photographed, their ideas recorded on paper, and following this, one-on-one semi-structured interviews were conducted. After the assignment the students were given by their lecturers was marked, one-on-one semi-structured interviews were held with the lecturers.

The recorded interviews were stored on the researcher's Google drive, accessible only with password authentication for security and easy retrieval. 'Descript', a transcription software, was used to transcribe all the interviews (see figure 3.3). The interviews were grouped into folders according to the cycles and research participants (Cycle 2: lecturers' interview transcripts and students' transcripts; and Cycle 3: lecturers' interview transcripts and students' transcripts).

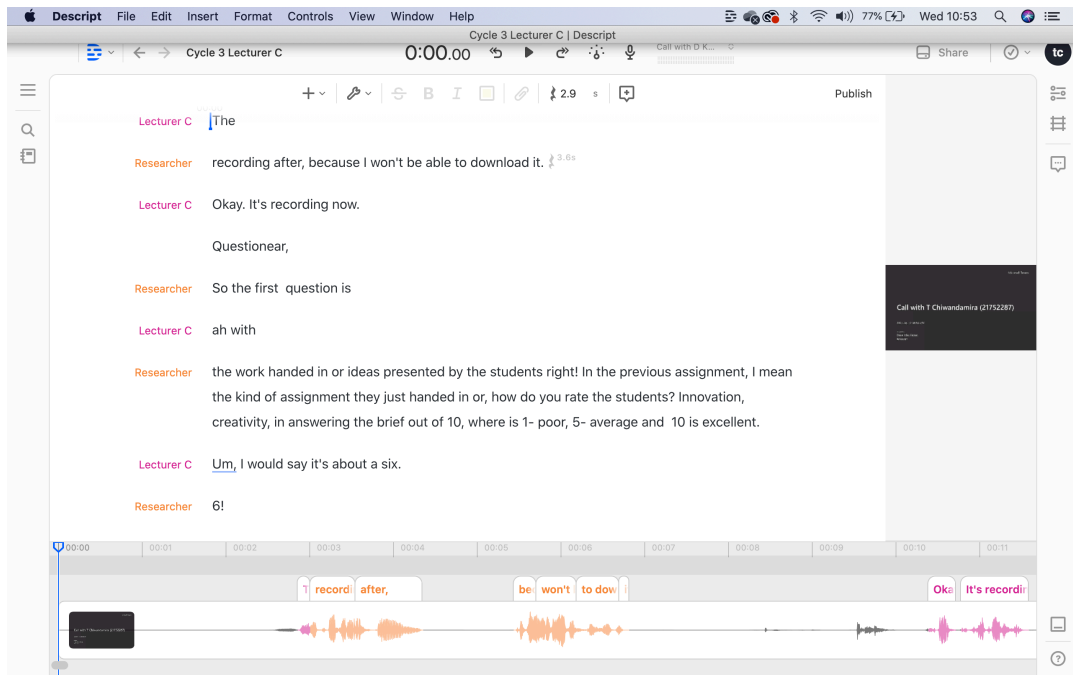


Figure 3.3: Screenshot of Descript software (Author's own)

### 3.11 Ethical considerations

The project proposal included an ethics checklist which was approved by the DUT Institutional Research Ethics Committee (Ethical Clearance number IREC 015/20). The student sample was opt-in and students who participated volunteered to take part in the study. The steps taken to ensure research participants' anonymity, confidentiality and ethical considerations included:

- A. A gatekeeper's letter was sent to the university** to obtain permission for the research to be conducted at the DUT City Campus.
- B. The primary research participants (the students) signed letters of informed consent.** All students were over the age of consent. The letters introduced the study by providing a detailed description of the research activities; the pilot observation, pretesting of the interview questions and the two graphic facilitation ideation workshops they would be taking part in, as well as the post-workshop interviews. It also described how the data would be recorded.
- C. The study and the letter of informed consent were explained to the students.** In this session, students were encouraged to ask questions to gain a better understanding of the study. The graphic design lecturer was not involved in this process. It was stressed that participation was voluntary and that there would be no positive or negative personal or academic consequences of participation or non-participation. Students were informed that they were free to withdraw from the study at any time, with no penalty.
- D. The secondary research participants (the graphic design lecturers) signed letters of informed consent.** These letters introduced and explained the research activities that

they would participate in, including pretesting of the interview questions and two interviews based on students' ideation practices. They also highlighted that these interviews would be recorded.

- E. Before commencing the graphic facilitation workshops, pieces of paper bearing the letters of the alphabet were placed in a hat and students were asked to pick one at random.** The letters were used instead of their names. These letters remained constant for both the interviews and the workshops for the duration of the research.
- F. Workshops were voice recorded and photographs were taken. Each participant's face was blurred out.** For purposes of anonymity and confidentiality, details were also blurred out if students were wearing any characteristic or identifiable clothing.
- G. None of the collected data was made available to anyone besides the researcher and the supervisors.**
- H. Secure storage of research material.** All recorded interviews and photographs are stored on Google drive online, secured with a password only known to the researcher. They will be deleted five years from the conclusion of the study. The study's results will be made available to any participants interested in obtaining them, without any identifying information.

### **3.12 Data analysis procedure**

Data collection and analysis aim to use the data generated to answer the research questions (Blanche *et al.* 2006). Mortensen (2020) highlights that there is "...no single right way..." of conducting qualitative data analysis, but thorough, systematic analysis is essential for the reader to understand how the researcher reached his/her conclusions.

Data were analysed using the thematic method and manually processed by the researcher. Analysing qualitative data involves repeatedly reading and re-reading the gathered data, and thematising and categorising it; in other words, breaking down the data and then building it up again to interpret and elaborate on its meaning (Blanche *et al.* 2006: 322). Thematic analysis was the most relevant method for this project because the research required an intentional, thoughtful, and in-depth analysis approach, which it offers (Braun and Clarke 2014). It entails identifying, scrutinising and reporting themes that emerge from the data to answer the research questions.

The researcher applied interpretive and thematic analysis, using the seven-step thematic analysis procedure to analyse the data for Cycles 1 to 3 shown in figure 3.3 (Blanche *et al.* 2006: 321; Braun and Clarke 2014).

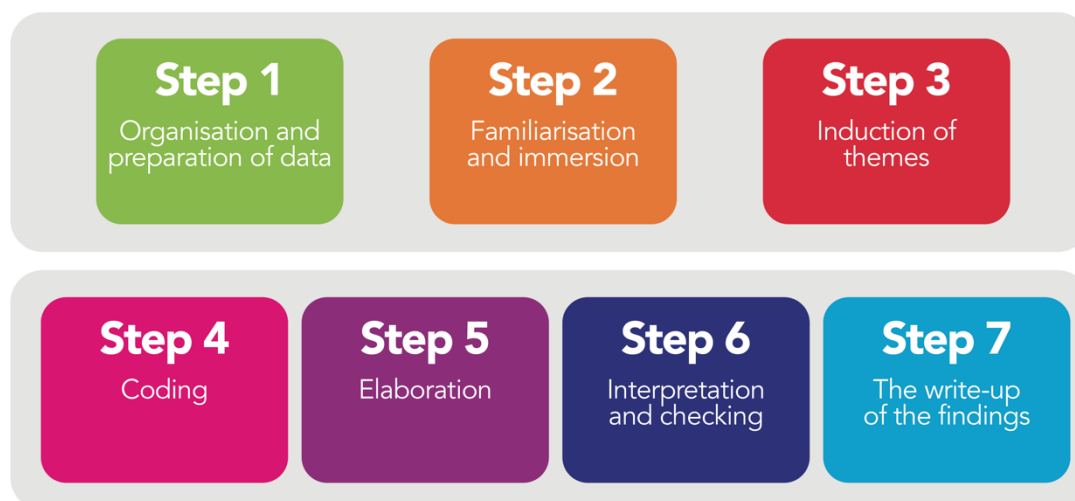


Figure 3.4: Seven phase interpretive and thematic analysis (Blanche *et al.* 2006; Braun and Clarke 2014)

Firstly, the researcher organised and prepared the data (Step 1) by transcribing all the recorded interviews for that cycle using ‘Descript’ transcribing software as noted above (page 67, section 3.10, figure 3.3). Although it was time-consuming and strenuous, transcription was an opportunity for the researcher to familiarise himself with the data at an early stage. The photographs taken, observation notes, interview transcripts and ideas from students were all printed, to be used as data to be analysed. Blanche *et al.* (2006: 323) highlight that “...by the time (he/she comes) to data analysis...” the researcher “...should already have a preliminary understanding of the meaning of the data.”

Secondly, the researcher familiarised himself with and immersed himself (Step 2) in the data by reading and re-reading it to develop an initial vivid understanding. This helped the researcher to actively engage and fully grasp where graphic facilitation, students’ misconceptions and visual plagiarism concepts were located within the data. The researcher made notes highlighting the types of conclusions and major concerns the data could support (students’ misconceptions and the benefits of graphic facilitation) and which it could not.

Thirdly, the researcher deduced the themes (Step 3). This involved identifying the organising principles and general rules that naturally underlie the material. The researcher re-read the data



and noted the categories and themes that emerged. A theme is a group of categories that convey similar meanings. Rather than merely summarising the data and naming these summaries as themes, the researcher noted the ranges of themes that could emerge. As the themes arose naturally, using the students and lecturers' language, they also had to respond to and answer the research question under investigation, through "...shared ideas and key observations..." (Clarke 2019).

The fourth step in thematic data analysis, coding, is the process of labelling and organising qualitative data to identify different themes and the relationships between them. As much as "data reduction is at the heart of coding" it is also an "...analytic process, so codes capture both a semantic and conceptual reading of the data" (Bailey 2007: 127; Braun and Clarke 2006); in other words, both the literal meaning and the ideas represented. The researcher divided the data into more digestible portions, with different sections of the relevant data marked according to the themes that were used later on in the analysis. Grouping the data into different themes and categories is the main goal of the coding phase. The researcher used different colours to code the ideas within the words, phrases, sentences, and paragraphs using Microsoft Word. The coded data was written or printed, then manually cut and pasted on a board in the different themes (see figure 3.4). On rereading the data and reviewing these initial codes and themes; comparisons of student populations, differences, and student work, and additional sub-themes, namely, creativity, innovation, creative process, and student exercises emerged. Blanche *et al.* (2006: 326) note that this usually occurs in coding; hence, the researcher had to analyse those codes as well by rereading, and reviewing the data, codes and themes.



a graphic design setting. The researcher continued to check the interpretation of every cycle by discussing it with his supervisors. He indicated “personal involvement” in the phenomenon by referring to the way the data was collected, coloured, and analysed to help avoid bias (Blanche *et al.* 2006: 326).

The last part of each phase of the action reflective cycle analysis was the write-up, which involved constructing and sequencing the analytical story with data snippets to present the reader with a logical and convincing narrative on the findings, and contextualise it within the research literature (Braun and Clarke 2013: 121). The researcher integrated the issues of visual plagiarism and creativity with the literature on the creative process, to help tell the story from the perspective of the data being analysed. The story alluded to by the data is more than a mere description. Rather it makes an argument concerning the research questions. This argument is presented and elaborated on in the chapter on Data Analysis, Interpretation and Discussion of Findings.

### **3.13 Trustworthiness and bias**

The criteria for judging the trustworthiness of a qualitative research project are based on four indicators, credibility, transferability, dependability, and conformity, which are discussed below (Kumar 2011: 171-172).

#### **1. Credibility**

Credibility refers to how congruent the findings are with reality and their truthfulness; which Lincoln and Guba (1985) highlight as the most important factor that ensures trustworthiness. To promote credibility, the researcher compared the data from the interviews, observation, and graphic facilitation workshops to build common themes to analyse the data (Creswell 2007: 196 251; Leedy and Omrod 2005: 100). These themes were established by converging several sources of data, which helped to validate this study (Creswell 2007: 251).

The researcher spent a ‘prolonged time’ conducting this study, and thus developed an in-depth understanding of graphic facilitation, the creative process, visual plagiarism, and ideation. The participants provided him with credible data on the phenomenon under investigation (Creswell 2003: 196). According to McNiff (1988 cited in Gray 2009: 328), the researcher must publicly declare that he/she followed a disciplined system of inquiry. This researcher followed such a system by conducting three action research cycles for the research evidence in these pages.

The researcher reviewed the findings with both the students and the lecturers in order for them to confirm his interpretation of the themes, data and results. While the research was ongoing, the researcher referred repeatedly to the research participants with “semi-polished” themes to check if they were accurately interpreted (Creswell 2007: 251). At the end of the research (Cycle 3), he again reviewed the findings with the research participants, which allowed them to make factual corrections and comments (Creswell 2007: 251). Returning the results and data and themes to the research participants helped to check the accuracy and resonance with their experiences. Thus, the credibility of this study was established.

## **2. Transferability**

Transferability requires the researcher to help the reader decide on the extent to which the findings of the study could be applied to another context or setting. It is “...achieved by producing detailed and rich descriptions of the contexts” (Blanche *et al.* 2006: 93). Kumar (2011: 172) suggests that transferability can be achieved if the researcher extensively and thoroughly describes the research “...process adopted for others to follow and replicate.” The understanding of visual plagiarism, graphic facilitation, the creative process, and ideation in this study is transferable to other similar or cognate contexts by building and providing a framework to reflect on for other studies.

The transferability of this study may be limited because the COVID-19 pandemic and consequent restrictions meant that a limited number of potential participants was available. In addition, the sharp difference between the COVID-19 situation in 2020 and previous 'normal' times may limit the study's transferability to later 'normal' times. However, if COVID times continue, the results would be transferable in the future under the same conditions the research was conducted in. Thus, the results may or may not be transferable depending on the conditions under which this research was conducted and those of any future comparison.

## **3. Reliability**

The reliability of a study refers to the extent to which its results would be repeatable or similar to some degree if the same study was conducted with the same or similar participants (Kumar 2011: 167). Brink (1993: 35) noted that reliability is a normal part of a quantitative study; however, it is also applicable to a qualitative study. Since the researcher adopted an interpretive paradigm and did not assume that the phenomenon investigated is a stable, unchanging reality, he does not expect the same results if the same phenomenon is observed twice (Blanche *et al.* 2006: 93). It is likely that future research participants will behave differently, expressing their

opinions relative to the changing context they find themselves in (Blanche *et al.* 2006: 93). However, the study's results should be compared with a similar study if this study's particular context is taken into account.

#### **4. Dependability**

Dependability is the manner and extent to which the reader can be convinced that the research findings occurred as the researcher presents them (Blanche *et al.* 2006: 93). It can be achieved by recording the research process in detail for others to replicate (Kumar 2011: 172). The researcher is able to provide an audit trail of the blurred-out images from the graphic facilitation workshops (on request), transcribed interviews, and the ideas generated from the workshops. The findings and analysis are presented for the reader to examine the researcher's interpretation. The raw data will be securely stored for five years should other researchers wish to examine it. The steps taken in all the cycles to analyse the data are included to substantiate the study's dependability.

#### **5. Bias**

Any mistake, effect, or situation that "...systematically skews..." or distorts both the data and outcomes in a given direction, limiting the framework of perception, is referred to as research bias (Institute for Work and Health 2014). Bias should be kept out of certain crucial aspects of research (Zahinsky 2017). Dealing with bias is not about achieving perfect objectivity in all aspects of research, which is impossible, but about mitigating damage in areas that matter (Zahinsky 2017). "The researcher cannot separate himself from the topic or people he is studying, it is in the interaction between the researcher and researched that the knowledge is created"; hence, no matter what the researcher does, the research will be affected by some degree of bias (Mehra 2002:11). A researcher needs to be mindful of the bias his/her study is prone to, as this assists in minimising it as much as possible. Knowing what to look for, avoiding assumptions, asking the right questions, being focused on the participants' views and following research standards also helped to minimise bias. The types of bias that affected this study are confirmation and self-selection bias which are discussed below.

Confirmation bias occurs "...when a researcher forms a hypothesis and uses participants' information to confirm that belief while dismissing evidence that does not support it" (Sarniak 2015). The researcher had a kind of confirmation bias that might skew the results to support the use and value of graphic facilitation. The researcher's subjectivity should be kept in check when he/she is "over-involved to the extent that personal biases come into play in the analysis of the

findings” (Kock 2005 cited by UKEssays 2018). The researcher sought to mitigate this challenge by “...behaving in a neutral fashion...”, by not marginalising the participants' voices, and by being aware of the power dynamics at play between the workshop facilitator and participants (Mehra 2002: 11). The participants were encouraged “...to tell their perspectives without requiring approval or confirmation from the researcher” (Mehra 2002: 11). Spending prolonged time in the classroom, collegial discussions with colleagues to address subjective interpretations which might cloud his judgement, and discussing the emerging themes with a peer and his supervisors assisted the researcher to see things through a different lens, which enriched the interpretations (Mehra 2002: 16).

This study was conducted at DUT; thus, self-selection bias might be present within the study if students felt that participating in it would affect their semester marks and because the study was restricted to second- and third-year graphic design students as the research population. Self-selection bias occurs when participants decide for themselves whether or not to take part “...in the project, and the group that chooses to participate is not equivalent (in terms of the research criteria) to the group that opts out” (Glen 2017). To avoid this, the researcher informed the participants that enrolling in the study would not affect their marks whatsoever, and the lecturers were not present when students enrolled for the study or when the researcher conducted the workshops and interviews.

### **3.14 Limitations of the study**

Limitations are constraints beyond the researcher's control that can have an impact on the study's results (Simon and Goes 2013). The study confronted several constraints, including the COVID-19 pandemic, methodological limitations, the time set aside for the workshops, and semi-structured interview data. This study was conducted in a year (2020) that was completely abnormal compared to any previous year, because of the pandemic. The number of participants was limited due to the regulations implemented by the South African government.

The second constraint was methodological. Action research is time-consuming (Cajander 2016) and there was a danger that the research participants might lose interest and not participate in the remaining action research cycles, thereby disrupting the study. The research was dependent on the primary research participants' availability and willingness. Since the workshops and interviews were conducted during study periods, some students were not eager to participate. Hence, the workshops had to grab students' attention and encourage them to participate.

Interviews were conducted for 30 minutes after the 60-minute graphic facilitation workshops. Some students opted out of the research, which proved difficult for the researcher because he had no control over this decision due to the need to adhere to ethical requirements. The researcher encouraged more students than necessary to volunteer by self-selecting, anticipating that some participants would opt out, but he would still have several research participants as a fall-back plan.

The last constraint was the semi-structured interview data. The researcher relied on the research participants to correctly and honestly describe their work processes when working on design assignments. The data on their creative processes and ideation practices could have been skewed if participants told untruths, exaggerated or mixed up their work processes (Blackstone 2012), or were unable to describe them accurately. The best way to find out what people do is to observe rather than conduct an interview (Esterberg 2002 cited in Blackstone 2012). The researcher thus had to interview, observe and compare the data from the lecturers and students as an intervention. This helped him to gain a well-rounded view, minimising the study's limitations.

### **3.15 Summary**

This chapter reported on the study's research methodology. It described the interpretive paradigm, qualitative approach and action research form of enquiry employed to investigate the applicability of graphic facilitation for ideation in a tertiary institution in South Africa. Purposive sampling was used to select a sample of lecturers and students from the research population. The research instruments included semi-structured interviews, observation, workshops, a design brief, and the ideas produced by the students in response to the brief. The researcher made use of three reflective action research cycles, with each informing the next, and making use of an iterative method of cyclic action. The seven-step interpretive and thematic analysis method was used to analyse the data.

The researcher adhered to the ethical, confidentiality and anonymity requirements set out in the DUT Research Ethics Guidelines. Methodological limitations, COVID-19 restrictions and bias were among the limitations encountered. The researcher was aware that the research was prone to bias and was mindful of it while conducting the research, while also adopting strategies to mitigate it. Due to the effects of the COVID-19 pandemic in 2020, the study's validity might be limited. The circumstances under which the research was conducted, including Government health regulations because of the pandemic, meant that a limited number of potential

participants was available. The following chapter presents the analysis of the data collected by means of the research instruments and from the literature, and interprets and discusses the findings.



## Chapter 4

### Data Analysis, Interpretation and Discussion of Findings

#### 4.1 Introduction

This chapter presents the data analysis, and interpretation of the action cycles for this research. It begins by presenting the data and findings from Cycle 1 concerning students' current practice. Secondly, it presents the workshop observations, interview data, and the findings, analysis, interpretation, and themes for Cycle 2 for both the students and the lecturers. Thirdly, the students' and lecturers' data for Cycle 3, including the workshop observations, interview data, conclusions, analysis, interpretations, and themes are presented. Lastly, the links between the three cycles are discussed and the research questions are answered. The chapter concludes with a summary.

Prior to commencing this study, graphic design lecturing staff complained that student marks and assessment results were not impressive, and visual plagiarism was a problem within the department. The preceding discussion explored where this problem might have originated, and how it could be improved. The research objective was linked to the themes to help solve the problem. The themes are presented as the chapter progresses. These themes, and how the research questions link and help to answer the research question, are tabulated in table 4.1.

Table 4.1: Link between themes and research objectives (Author's own)

Research Objective	Thematic Group
To examine and critique the current ideation processes employed by the participants	Ideation Creativity Design thinking Talking about ideation
To explore the current use of graphic facilitation	Described in the literature
To examine how important ideation (developing creative new ideas) is to second-year graphic design students	Comparison of student populations Talking about ideation
To test the effectiveness of graphic facilitation in the ideation process with second-year graphic design students	Graphic facilitation Importance of graphic facilitation
To probe plagiarism in the ideation process through the use of graphic facilitation	Differences Plagiarism Talking about plagiarism

## 4.2 Students' current graphic design practices

Student participants were observed during their study time on the 14<sup>th</sup> of June 2020 to identify the ideation process they employ for their design assignments. Study time at DUT is the time during which students work independently on their design projects. While in many academic universities, study time would be spent with books and literature, in design practice, students have between two and five hours' study time per day; for instance, the first two hours in the morning from 8:30 am to 10:30 am, or the whole day where they focus on assignments and engage in design activity.

The second-year graphic design students were observed while working on a design brief to design an A3 poster, three teasers, and a promotional item of the student's choice for a movie promotional campaign (see Appendix B ii for the design brief). At the same time, the third-year graphic design students were working on a self-branding design brief, with the deliverables including a creative Curriculum Vitae (CV), a personal Corporate Identity (CI) and personalised promotional items (see Appendix B iii). These observations helped the researcher to understand how students performed the design process, and especially how they engaged in the ideation process (See tables 4.2, 4.3, 4.4 and 4.5 below for the students' processes).

Table 4.2: Second-year graphic design students' activities during a design project (Author's own)

	<b>Inspiration</b> Research and generate ideas	<b>Clarification</b> (Clarify) focusing on the brief	<b>Distillation</b> Deciding on which idea to work on & refining it	<b>Incubation</b> Leaving the problem alone for some time	<b>Perspiration</b> Working determinedly on the best ideas	<b>Evaluation</b> Review work and learn from it
<b>Student 1</b>	Research + thumbnail sketches		Choose three designs and finalise		Execute designs	
<b>Student 2</b>	Thumbnail sketches + mind mapping, sitting & thinking of ideas		*refine		Execute designs	
<b>Student 3</b>	Look at example + mind mapping		Execute first options		Execute designs	
<b>Student 4</b>	Research + thumbnail sketches & mood boards				Execute designs	

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\* This student worked backwards by executing the final design work first, and only later the thumbnail sketches and mood boards.

<b>Student 5</b>	Mind map + thumbnail sketches		Choose one design		Execute designs	
<b>Student 6</b>	Sitting & thinking of ideas				Execute designs	
<b>Student 7</b>	Sitting & thinking of ideas and playing with colour		Choose two ideas		Execute designs	
<b>Student 8</b>	Research + mind maps		Select an idea from the internet/ Change the idea & determine the best idea		Execute designs	
<b>Student 9</b>	Mind map + thumbnail sketches + play around				Execute designs	
<b>Student 10</b>	Research + sitting & thinking of ideas				Execute designs	

Table 4.3: Third-year graphic design students' activities during a design project (Author's own)

	<b>Inspiration</b> Research and generate ideas	<b>Clarification</b> (Clarify) focusing on the brief	<b>Distillation</b> Deciding on which idea to work on	<b>Incubation</b> Leaving the problem alone for some time	<b>Perspiration</b> Working determinedly on the best ideas	<b>Evaluation</b> Review work and learn from it
<b>*Student 1</b>	Looking for an idea				*Execute designs	
<b>Student 2</b>	Research, <sup>§</sup> mood boards, thumbnail sketches		Draft based on scamps + strategy		Execute designs	
<b>Student 3</b>	Research, sitting & thinking of ideas, mood boards				Execute designs	Test & get feedback on ideas, refine
<b>Student 4</b>	Research + look for inspiration	Understand the brief	Combine two styles		Execute designs	
<b>Student 5</b>	Sitting & thinking of ideas, thumbnail sketches				Execute designs	

\* This student worked backwards by executing the final design work first, and only later the thumbnail sketches and mood boards.

<sup>§</sup> Mood boards are a collection of visually inspiring images, swatches, textures, drawings, and physical objects conveying a specific style or theme that are used to tell a story (Lucero 2012: 438), while scamps or thumbnail sketches are drawings or sketches of ideas.

<b>Student 6</b>	Mind maps & thumbnail sketches	Improve thumbnail sketches			Execute designs	
<b>Student 7</b>	Thumbnail sketches		Select one idea from the thumbnail sketches		Execute designs	
<b>Student 8</b>	Mind maps, thumbnail sketches & coloured sketches				Execute designs	

All the second-year students included some form of research or mind mapping (a form of ideation) and some used both. Thus, some students aligned partially with one or more phases of the creative process, but not entirely. Of more concern is that amongst the group of third years, the processes seem to be more haphazard and disorganised across the group than amongst the second years. Third-year students are expected to be more organised. The variety and inconsistency of the working processes are concerning because good design generates originality and solves problems creatively by employing both elements and principles of design. To solve the problem, the proposed solution has to be relevant and unique. As a result, more detailed and coherent approaches, aligned to a process like Petty's, would assist the practices. Petty's creative process could inspire all students to follow the same approach, come up with innovative new ideas, and understand the value of doing so.

The variety of processes is also cause for concern. Of the 18 second- and third-year students observed, eight students researched, eight engaged in mind mapping, and seven sat and tried to think of ideas (see table 4.4). Hence the researcher believes, from the observations, that what the students do is not what they claim to do. The fact that students were informed that they would be observed during this period could have influenced their decision to follow some process. As it was, one student was observed working in reverse order, executing the final design first, and the thumbnail sketches last (see student 1, table 4.3). Working backwards implies that the student is not going through each phase of the creative process. Such behaviour might well make them prone to plagiarism because no ideation was done; hence, it is a shortcut to submit an assignment on time, and then work backwards to fool the lecturer that the student did the work properly.

A defined creative process is the most effective strategy for design projects and creative problem solving. This involves conducting research and generating ideas using thumbnail

sketches, mood boards, etc., and clarifying the brief, thereby focusing on what the brief requires. The student should then decide which ideas to develop, leave the problem alone for some time, and then come back later focused, and start working determinedly to complete the best ideas. Lastly, they should evaluate and review the work, and learn from it. In this phase, the student would either rework their solution if it is not sufficient to answer the brief, or submit the work as is. The students did not follow this process.

In summary, the data on the students' current practice suggested that most students followed some form of creative process while designing, but not consistently (as in tables 4.2 and 4.3 above). Seven students worked haphazardly, while 11 followed a somewhat organic design process that pleased them, but was not sufficient to demonstrate a thorough ideation process, according to Petty's or any other model.

Table 4.4: Second and third-year students who followed the creative processes (Author's own)

Creative processes phases	Research	Mood boards	Mind mapping	Sitting & thinking of ideas	Thumbnail sketches
Number of second-year students - 10	5	1	5	4	6
Number of third-year students - 8	4	3	2	5	5

The researcher did not observe any flexibility when students were working through their design processes, compared with the flexibility and different mind sets in Petty's model. In Petty's model flexibility is interlinked, in that thumbnail sketches may occur several times, even during final execution. The idea is that each phase should be visited many times (in no particular order), sometimes for a very short time. Students need to adopt the right phase at the right time because each phase has a unique and appropriate mind set and students should use the right one. Failure to do so usually results in a creative block. Many creative blocks are due to determined adoption of an inappropriate phase. Thus, if stuck, a student should switch phases in Petty's model. No student was observed making use of the flexibility of working back and forth or even encountering these phases a number of times during the ideation process. Since Petty's model phases are intertwined and recur throughout the process, the researcher expected the students to be flexible and have different mind sets, working unhurriedly through the phases. Even though the students had not been taught Petty's process, the researcher expected them to follow

some form of structured creative process which would indicate that they understand ideation and the creative process. The ideation processes of these second- and third-year students did not closely resemble the traditional process (Cronje and Appiah 2013: 19) or Petty's six phases of the creative process (section 2.4.1.1, page 19 above).

Table 4.5: Second and third-year students' creative processes against Petty's model (Author's own)

Creative processes phases	Inspiration	Clarification	Distillation	Incubation	Perspiration	Evaluation
Number of second-year students – 10	10	0	6	0	10	*1
Number of third-year students – 8	8	2	3	0	8	*1

The comparison of students' processes and Petty's creative process highlighted the stages of the creative process omitted by the students. The phases that students omitted are greyed out in tables 4.2 and 4.3 above. Some students used more than one element of the process. Every student had to generate ideas in some form, including taking ideas from the Internet, and making thumbnail sketches, mood boards and mind maps. Only two went through the phase of clarifying and focusing on the brief (see table 4.5). At some point, while working on a design brief, the designer decides which idea to develop, but only eight students were observed doing so and asked which idea they decided to focus on. The other ten continued with several ideas. The incubation phase, where students were supposed to leave the problem alone for some time to marinate, was omitted by all the students. The mind set for the incubation phase is that one is unhurried, patient and trusts that the process will enable a solution to the brief to materialise. These students might have been rushing to finish the assignment to meet the deadline.

Although all the students executed designs to submit for the assignment, none worked determinedly on the best ideas. Furthermore, only two (one in second year and one in third year) went through the \*evaluation phase, in which students are expected to be self-critical, analytic, positive and willing to learn and work. These two students stand out because they

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\* Evaluation might not be part of the creative process; it would have been most applicable if students were doing action research. It would come at the end of their cycles and what they learn would inform the next cycle. The evaluation they conduct would not be part of their creative process because students did not have the opportunity to revise the work.

skipped the clarification phase. While they evaluated and refined their ideas, they could not evaluate something when they did not understand the end goal. This observation might not be applicable given the tight graphic design deadlines, but it is worth mentioning as it would have benefited the students.

#### **4.2.1 Review of Cycle 1**

On reviewing Cycle 1, the researcher found that most of the students followed an organic or haphazard creative process while designing (see tables 4.2 - 4.5). Following Petty's or another creative process could help students to successfully complete their design assignments and improve their marks, which the lecturers indicated were not up to standard. Looking at award-winning work, and practising and following Petty's or another creative process could help students to identify creative work, focus, and understand and apply the creative process, which could in turn improve their marks. However, these problems cannot be addressed if students continue working in the way they were. The organic creative process produces work that is insufficiently creative, according to lecturers' prior comments. It should be noted that these comments were not based on any primary research by the researcher, but they helped him to define the action research process.

The researcher paid particular attention to how students worked on design assignments in Cycle 1 because this knowledge would be essential in carrying out the rest of the study and would facilitate the development and recommendation of a more successful ideation process that could reduce plagiarism. In observing the students' current practice, the researcher sought to establish if they:

- followed a defined creative process,
- avoided following a creative process,
- were not sure how to use the creative process correctly,
- were not taught sufficiently about ideation.

#### **1. Preparation for Cycle 2**

The information from Cycle 1 on students' current practice – that they did not follow a predetermined creative process – was followed up in Cycle 2, and clarified for the researcher

that he should concentrate on the students' processes, which in turn suggested how their practice could be improved, while simultaneously investigating the applicability of graphic facilitation in this academic setting. In preparation for Cycle 2 a graphic facilitation workshop was planned, semi-structured interview question guides were created and pretested, and six ideograms (see page 61, figure 3.2) were created to use in the graphic facilitation workshop.

#### **a) Graphic facilitation workshop**

Based on the data on the students' processes, the researcher developed an intervention. Students' previous work was relevant in terms of establishing a baseline of originality/plagiarism, and the strength/weakness/absence of new concepts. Since students would be solving design problems, which might be akin to solving business problems, graphic facilitation seemed a worthwhile option. As noted previously, graphic facilitation had not been used in the Graphic Design programme at DUT. Based on the literature, the researcher developed a graphic facilitation workshop procedure for use in Cycle 2 (see page 60, section 3.8). The workshop made use of a design brief for which ideas were produced by the students and illustrated within the workshops as part of the data collected.

#### **b) Semi-structured interview question guides**

The findings from Cycle 1 on students' current ideation practices and knowledge enabled the researcher to focus on where plagiarism might originate within the students' work process. Separate semi-structured interview guides were created and pretested with the students and graphic design lecturing staff (See Appendix C and D for the initial and revised interview guides). The lecturers' interview guide aimed to explore what the students had been taught, each lecturer's perceptions and observations, their opinions on the students' ideation process, and plagiarism. The lecturers' comments were informal and based on their observations and experience of the students over time, which were not part of the research activities. Their opinions on students' visual plagiarism were based on the design work students had submitted over the years, which was plagiarism-checked using TinEye, a reverse search engine on the web that uses image identification technology. TinEye was introduced in 2015 as a plagiarism monitor for student work at DUT. Substantially modified versions of students' design work were matched by the lecturers and visual plagiarism was observed.

The students' interview guides challenged the researcher in that language difficulties appeared to be a possible reason for some of the questions being misunderstood and needing to be revised. Students' language background and levels of comprehension of English might be a reason, but



the reasons were not investigated. Language issues might also be a possible reason for visual plagiarism, which is discussed later in this chapter.

### **4.3 Cycle 2**

This section first focuses on data from the workshop observations and the interview data from the student participants and lecturers. Secondly, it interprets the interview data, to help understand the story that it is telling, and draws links. Lastly, the themes and codes that were derived from the data are discussed.

#### **4.3.1 Cycle 2 Workshop observation**

At the beginning of the workshop, the students were hesitant in responding, participating or contributing. The researcher prompted the students and gave them examples of ideas which encouraged them to contribute. As the workshop progressed, students were asked to illustrate on large sheets of paper in front of everyone, which helped them feel appreciated and part of the workshop. Some produce less artistic drawings which other participants found funny. This lightened the atmosphere. The researcher observed that no student used a cell phone or accessed the Internet during the workshop.

#### **4.3.2 Cycle 2 Introduction of interview data**

This section showcases the interview data from the student participants and the lecturers. All the interviews were transcribed and the data analysis procedure outlined in chapter 3 (section 3.12, page 69) was followed.

### **1. Cycle 2 Data presentation from the interview question guides**

#### **a) Student responses**

The students' Cycle 2 semi-structured interview question guide aimed to establish how and why they might be plagiarising, focusing on their perceptions of how important ideation (developing creative new ideas) is to them. It also examined how the researcher could address these issues using graphic facilitation workshops. Below are brief responses to the interview questions (see Appendix D (I)) which stood out for the researcher. The data extracts report on varying numbers of participants because comments that seemed unimportant or incomprehensible are excluded. In certain instances, an explanation is provided as to why few students responded to a given question.

Question 1: The students were asked to define what ideation is. They noted that ideation is:

*“...you brainstorm your ideas” (Student A)*

*“...coming up with different ideas” (Student B)*

*“...process of coming up with ideas or brainstorming... ideation that’s where you come up with ways to tackle every problem that’s... on any project” (Student C)*

*“...ideation is the process of coming up with an idea... Of developing and refining an idea” (Student D)*

*“Ideation to me ...is basically brainstorming ideas in a complex way and then being able to pick up ...or pinpoint.... the best ideas that are possibly close to whatever thing you are tasked to do” (Student E)*

*“...ideation is more like brainstorming ...picking up... different ways to come to find like a solution... Where like you write a whole lot of different words... stretch them out... where you find like your solution” (Student F)*

*“Isn’t it like the direction? Sense of direction I don’t know ok ...” (Student G)*

*“...ideation is a process of... gathering ideas of concepts” (Student H)*

*“For me, ideation is the process in which I will take the given brief and formulate it into ideas on how to interpret it. In which using various... concepts maybe mind maps more or less, mood boards and stuff like that...” (Student I)*

*“It’s a process that you use, different types of things that you use to create ideas for like campaigns or hmm... to come up with a line... it’s just to create an overall view of... how to approach a problem” (Student J)*

*“it’s based on coming up with ideas” (Student K)*

The interview data show that ten participants had a rough idea and one (Student G) had no idea of the definition of ideation. The common theme was coming up with ideas and picking up concepts. Four students managed to define ideation, but their definitions were not structured correctly, and only highlighted some components. Only three students managed to articulate it correctly.

Question 2: Students were asked to describe in what ways they thought ideation was important. They noted:

*“...think it is important because you brainstorm all of your ideas then you get to choose the more realistic one, get to the bottom of it and then the main one” (Student A)*

*“...it makes you think about like more ideas... I feel like it makes it makes things easier for your work” (Student B)*

*“... problem-solving that’s one of them... I don’t know... the way he puts on the what? Strategy...” (Student C)*

*“...ideation is important because from there that’s where you get all your... core design starts ... that’s where creation happens” (Student D)*

*“Ideation is for me is important so that you are aware of all the possible outcomes that you could have and it helps you to pick up the best outcome” (Student E)*

*“...it’s an idea but then if you do ideation you ... are not boxed in; you get to get a whole lot of angles like you to get a lot of angles to ... to attack one thing like to come up with like a solution for one thing unlike when you just be like, ooh, this is my idea. If that idea doesn’t work ... then you have to start over again because you don’t have like a lot of approaches to look at” (Student F)*

*“To know where you are going.... in terms of your career maybe or maybe physically walking like to know where you are going I think” (Student G)*

*“They give you direction” (Student H)*

*“...it’s like basically the first steps of getting to understand the brief and seeing your options and ideas on how you can formulate it to create something” (Student I)*

*“...direction you should be going so after like .... brainstorming and that sort of thing you need to know exactly what’s the best way to solve the problem so... ooh, it helps you solve a problem” (Student J)*

*“...important in brainstorming when you are coming... When you are planning something” (Student K)*

The common thinking was ideation as giving direction, brainstorming and getting ideas. Student G's response reiterates that the student was not aware of the importance of ideation. This is further discussed below (see section 4.3.3.1, page 104). Thus, although one student was unable to do so, the other ten were able to articulate why they believed ideation was crucial.

Question 3: Students were asked to cite the reasons why they use mood boards. Their responses were as follows:

*“like they sort of give you, give you a direction... basically they are like a guideline” (Student B)*

*“single step of the project they will be a time where you feel like, ... (you’re) kind of losing the direction, so going back to your mood board is going to remind you what were u going for?” (Student C)*

*“...help give you a sense... of what it is you are trying to achieve... via whatever creative design you want to come up with. It also helps... expand on the concept... for the people... the viewers so for people viewing the concept... with them so that they see where you are trying to go” (Student D)*

*“...is to spark up more ideas than what you just had. You might maybe like get an idea you know and once you do a mood board maybe you can further on that idea maybe like the skill maybe like type I don’t know” (Student E)*

*“...you can take piece by piece to create a whole... mood board for me is more like a way of not like copying or plagiarising ’cause you get to pick... little elements from each image that you are using so that you can get like a whole feel of what you will be doing...” (Student F)*

*“So that you have a way forward for your final... design” (Student G)*

*“To get inspiration and the look and feel” (Student H)*

*“I create mood boards depending on what I need. So, for example, I created two maybe references art style or a colour palette to use in my work... a reference point for me” (Student I)*

*“mood boards to see... to know what direction you are going in so you know exactly to stick to that mood board like your colour scheme uhm ... your look and feel of what you are going for” (Student J)*

Students A and K’s responses are not presented as they did not cite reasons or had not used mood boards. One asked what mood boards are, highlighting students’ confusion about this technique; this was reviewed in question 6.

Question 4: Students were asked to list their reasons for using Scamps. Table 4. 6 tabulates their responses.

Table 4.6: Students’ reasons for using scamps (Author's own)

Reasons for using scamps	Student
Scamps help make improvements on what you are working on; helps when brainstorming	A
A sketch brings your idea to life	B
Scamps help plan on what you are going to have in your key visuals	C
Scamps help come up with a perfect final draft	D and K

Scamping is the first step that helps you put and see the idea in the head on paper; see your idea and put your idea on paper	E
Scamps help; I see my progress on any work that I am doing/ get the final idea/ solution and know which direction to take	F
Scamps help me see my progress	G
Scamps help with formulating ideas	H
Scamps help in using referencing in using it in your way filtering from the ideation and mood boards	I
Scamps help you to visualise ideas that you can or cannot create; helps you know where you are going and change it	J

Three students failed to note the key reasons for using scamps, while eight correctly noted some elements in their indication of the benefits of scamps. Two students, D and K, cited the same reason, namely, that scamps help with the final draft and design. This highlights what students might have been taught and grasped in class.

Question 5: Students were asked how frequently they refer back to their mood boards when they start developing concepts. Table 4.7 presents their responses.

Table 4.7: Students' frequency of referring to mood boards (Author's own)

Student A	Student B	Student C	Student D	Student E	Student F	Student G	Student H	Student I	Student J	Student K
Never	Every time	Every time	Some-times	More often	Some-times	Some-times	Occasionally	Some times	More often	Never

Eight of the students used mood boards, but not consistently, while two (Students A and K) never used them; thus, these two students did not make use of a tool they had been given. Student K highlighted that she had never used mood boards. The table shows that only two of the 11 students used mood boards all the time, as they should.

Question 6: Students were then asked in what ways their mood boards influenced the direction of their design work. They noted that mood boards influence their work in different ways, namely, as a reference point; to pick up different elements to use in their work, like a colour scheme, or ideas; as a way of not copying; and as a source of inspiration. Lastly, they provide the direction one is going to take:

Table 4.8: The way mood boards influence students' design work (Author's own)

The way mood boards influence design work	Student
<i>"Confused about how to use it and have never done a mood board (do not know)"</i>	A, G and K
<i>"...influence your final design"</i>	B
<i>"It's just your core direction, your inspiration... It's basically the drive"</i>	C
<i>"...they help give me a clearer picture or pick up certain aspects of a design that I want from my mood boards that are going to be in my design"</i>	D
<i>"... it helps me get an understanding of how I am going to execute its final design"</i>	E
<i>"I get the type, colour, and style that I am going to use in my design"</i>	E and H
<i>"... a mood board for me is more like a way of not like copying or plagiarising 'cause you get to pick... little things like little elements from each image that you are using so that you can get like a whole feel of what you will be doing"</i>	F
<i>"...it's a reference point... as the reference for what I want to do... like the stuff that's already done but maybe I would like to add on what's been done..."</i>	I
<i>"Mood boards give direction you are going in... ... your look and feel of what you are going for"</i>	J

It is a cause for concern that, while students are required to make use of mood boards, Student G noted that she had not done so, while Students A and K did not know what mood boards are for. Firstly, this highlights that students take shortcuts and skip some phases of the creative process during design assignments, in order to get to the final work. Secondly, students might not have understood how to make mood boards and utilise them in their assignments; or, thirdly, they might not have been taught sufficiently by their lecturers.

Question 7: This question asked students to set out their understanding of the concept of plagiarism and to define plagiarism. The responses are tabulated below (table 4. 9).

Table 4.9: Students' definitions of plagiarism (Author's own)

Defining plagiarism	Student
<i>"when you like to research something... your idea"</i>	Student A
<i>"Taking something from the internet and then you make it your design a bit different from being inspired"</i>	Student B
<i>"Adapting a style or something you saw somewhere else and for your work without having any sort of reason"</i>	Student C
<i>"...visual plagiarism is taking a body of work that was done by someone else and presenting it as your own without any significant changes made to it"</i>	Student D

<i>"When you take some work from the internet and alter just the colour and use it as a reference for your work"</i>	Student E
<i>"When you take an image that is not yours and you use it as if it's your own"</i>	Student F
<i>"...taking someone else's work and making it yours... So, for visual is like taking that whole design or most of it and making it into your own..."</i>	Student G
<i>"...taking like direct images from the net and using them without referencing"</i>	Student H
<i>"Copying of something that you have seen; copy the exact style, the exact colour palate"</i>	Student I
<i>"stealing like an artist, taking certain parts directly, from artwork or design and using them for yourself"</i>	Student J
<i>"Copying something"</i>	Student K

Three students (D, F and G) were able to define plagiarism whereas the other eight were unable to define the concept. It is interesting that four students (B, C, J and K) referred to plagiarism as copying someone's work.

Question 8: Students were asked what they had learnt from the workshop. Only three (two second- and one third-year) responded to this question. These students stated that they had learned to be more innovative and open-minded and to develop a variety of ideas in a short amount of time. The researcher is unsure why the other students did not respond to this question but believes that they may have avoided it because they were unable to define or relate how the workshop had benefitted them. Student E noted that he/she previously thought that one needs to think the right way to come up with ideas, but now knew that all one needs to do is think, and one will develop more ideas as one progresses.

*"I learnt how to be more creative and more open-minded... More open-minded about being creative so I let my creativity take me. Take the direction instead of trying to steer it in the direction I want it to go"* (Student D)

*"I learnt that it's not usually hard to ideate. You can do a whole lot within like a short period ... because before I used to do like one thing at a time. I would do like a key visual and then I will come back again after I am done with the key visual, then I would sit and try and find ideas for the teaser or find ideas for something else like for the whole campaign. But what I learnt today is that you can get solutions to all... these things at once"* (Student F)

## **b) Lecturers' responses**

The students and lecturers' responses are presented separately to differentiate the two sets of participants. This section focuses on the lecturers' responses to the initial lecturers' interview guide (see Appendix D (I) and chapter 3).

Question 1: The lecturers were asked to define ideation, which they defined as:

*“The... process of generating ideas ... around a problem”* (Lecturer A)

*“...For graphic design, ideation is a stage where you are in a position to be proposing (a) solution. ... the first step ... is discovery. So when... they discover challenges, they discover things ...they do research”* (Lecturer B)

*“... it’s one of the many techniques to... add, generate ideas or come up with ideas ... it’s depending on what... the individual is comfortable with... it’s all about coming up with ideas”* (Lecturer C)

*“The process that we go through to come up with a concept from mind mapping, to... rough work ... you can’t come up with a concept without firstly looking at what’s been done previously and then find and even use some of the techniques that have been used in logo design”* (Lecturer D)

*“... in graphic design ... ideas are everything ... without an idea that... stands out or ... (the) communication intentions of a brand or a person or... then there is nothing really. ...”* (Lecturer E)

Question 2: The lecturers were asked in what way they thought ideation is important. Extracts from the interview data are presented below:

*“...in the creative industry it is very important ... our industry requires the solving of problems... where there are multiple potential answers. That means you need to generate multiple ideas... to arrive at a good answer ... to provide ... clients or yourself with a good solution.... many of these ideas might cross-pollinate, ... without ideas, there is nothing to work with for you or the client”* (Lecturer A)

*“... important because your work is going to answer a brief... and ideation helps with that... (it) will help you... to answer the brief, it will help you to...say what has to be said, but for you to say it like it’s never been said before, you are gonna have to ideate”* (Lecturer B)

*“We sell ideas so if you don’t have ideas then you are redundant. You can’t survive in this field without ideas, I always tell my students this is the... idea business ... we present ideas, we conceptualise ideas, we render ideas, and that’s all we do. It’s ideas... ideas... ideas. It’s the currency of this field”* (Lecturer C)

*“...it’s always vital... we go through the ideation process of... mind mapping, scamps, colour roughing and developing one concept 'cause if you do a mind map, there are hundreds of thousands (of) concepts... that you could pursue.... Without the ideation process... the quality of the work is weak, the concept is weak and the final product is weak...”* (Lecturer D)

*“...it’s important to come up with ideas so that you can find unique ways to communicate something that people might already know or be unaware of or not have thought about and you need ideas on top of that so that you can work on out how to communicate those ideas visually...”* (Lecturer E)



Question 3: The graphic design lecturers were asked which level or year of students they lectured. Two (D and E) lectured first-year students; Lecturer A lectured second year and Lecturer C third-year students; whereas Lecturer B lectured all the levels (see table 4.10).

Table 4.10: The level at which lecturers teach and whether they taught ideation and the creative process (Author's own)

Lecturer	Year they lecture	Have students been taught ideation?	Have students been taught the creative process?
A	2 <sup>nd</sup> year	Yes	Yes
B	1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> year	No	No
C	3 <sup>rd</sup> year	No	No
D	1 <sup>st</sup> year	No	No
E	1 <sup>st</sup> year	Yes	Yes

Questions 4 and 5: The lecturers were asked if students had been taught about ideation and the creative process. These were four separate questions: 1: Have they been taught ideation and 2: the creative process? 3: Have you taught ideation and 4: the creative process? However, the researcher asked them as two questions. The responses based on the data in table 4.10 show that only two lecturers had taught both ideation and the creative process, while three had not. Only one of the first-year lecturers and one second-year lecturer taught or had taught both ideation and the creative process. The same two lecturers (A and E) respond positively, and the other three were either unaware or dismissive of what their colleagues were doing. In both questions 4 and 5, it was noted that some lecturers appear to exhibit a fundamental lack of comprehension of the course content. Moreover, Lecturers A and C-E taught first, second or third year, with only Lecturer B teaching all three levels.

Lecturers C, who taught third-year students, commented:

*“Well, I cannot answer that for the third year because it’s too late to teach it in the last year of study. So, this should be waaaayyyy long time done in the first year ... But it’s something that needs to be continuous; it’s not just you teach it once in the first year and then you expect them to know it for the next three years. So, you teach it, you reinforce it, you reinforce it, you reinforce it...”*

Question 6: The lecturers were asked what the graphic design students had been taught about ideation. They noted the following:

*“...I will sit with a student and discuss the initial idea ... they will come to me with perhaps scamps or initial ideas and ... I will show them how they can generate more ideas through association, through ... bringing in research, through playing with words, images... I will probe them to go further... and show them ways that they can develop an idea” (Lecturer A)*

*“... they have been taught what ideation is. They have been taught some ideation techniques. We go over and over the various techniques, but they mainly end up using... mind maps, maybe some word lists...” (Lecturer E)*

As Lecturers B, C and D had not taught ideation or the creative process, their comments are excluded. Lecturers C and D considered that it is was not their job to teach ideation, despite the former noting that it should be reinforced through the other years. Lecturer D highlighted that one of the lecturers normally does an ideation project and thereafter ideation is integrated into the design brief; hence, students will learn from it. These responses do not indicate sufficiently thorough teaching of ideation and the creative process. They suggest that lecturers assume that students will be taught about ideation in the first year; thus, they do not focus on it in third year. This highlights that lecturers were not sure what their colleagues were covering in the other years.

Question 7: The lecturers were asked to rate students' innovation (creativity) in answering the brief out of 10 for the current assignment. One lecturer assigned an above average score (6), two rated the work average (5), and two opted for below average (4) (see table 4:11). This suggests that students had a lot to learn in terms of innovation (creativity) in answering the brief. The different lecturers had different perceptions. Lecturer A who lectured third year was more critical than his colleagues. This could be because third-year students are expected to be knowledgeable about most of the design concepts. First-year lecturers are more lenient because students are just coming out of matric and are still learning and adapting to university life. Hence, they might condone errors or misunderstanding which would not be acceptable in third year.

Table 4.11: Lecturers' perceptions of students' level of innovation (creativity) (Author's own)

Lecturer	Lecturer A	Lecturer B	Lecturer C	Lecturer D	Lecturer E
Level of Innovation	Average 5	Below average 4	Below average 4	Average 5	Above average 6

Question 8 followed up on the previous one by asking the lecturers to justify and remark on the reasons for the rating they assigned to student innovation (creativity) in responding to the brief. They responded as follows:

*“(Some students) ...will almost avoid that first conversation because they have got so little to bring to the conversation. They are ill-equipped to develop, tease out ideas and brainstorm too...” (Lecturer A)*

*“... some of them (the students) when you look at what they (are) trying to come up with and you go back to the mind map and word list. It’s just a bunch of things just to fill up the page” (Lecturer B)*

*“... they can’t come up with ideas and it’s very difficult when a student cannot come up with ideas because when we have a crit (critique) and we sit at the table with their ideas, then we direct them with the idea, we assess their ideas together. I cannot come up with ideas for them, then they are not learning...” (Lecturer C)*

*“...one of the major problems in the first year (is that) a lot of the students have no artistic background or art background ... they don’t have ... even basic techniques. ... going through the process of art studies in (high) school makes a big difference and you see it in the students’ work... I would say maybe 70% or 80% of the students are starting from scratch, and adding to that a lot of them have no computer experience so it’s a slow process...” (Lecturer D)*

*“... a lot of the students, almost all the students have good ideas... I think a lot of the students struggle with what to do with those ideas for some reason uhm... so they come up with good ideas” (Lecturer E)*

Lecturer E works with third-year students who are older and have had more practice in coming up with ideas. Furthermore, students who reach third year are likely to be better performing because their less competent counterparts might have failed or dropped out. This might be why Lecturer E expressed a different opinion from other lecturers.

Question 9: The lecturers were asked to rate students’ ideas in terms of applying the creative process and communicating effectively with the target audience, in answering the brief. Table 4.12 summarises their responses. A scale of 1 to 10 was used where 1 was poor, 3 below average, 5 average and 10 excellent.

Table 4.12: Lecturers' perceptions of how well students apply the creative process (Author's own)

Lecturer	Lecturer A	Lecturer B	Lecturer C	Lecturer D	Lecturer E
Answering the brief	Average 5	Below average 3	Below average 4	Above average 6	Below average 4

How well students apply the creative process and communicate effectively with the target audience to answer the brief should have been two separate questions, namely, 1) how well they apply the creative process; and 2) how effectively they communicate with the target audience, but the researcher asked this as one question. The creative process could be diligently applied, but effective communication with the target audience might be lacking, and vice versa. A student might jump through the process but by good luck or accident, create design work that communicates effectively. The responses in table 4.12 refer to the second part of the question, i.e., how effectively students are reaching the target audience. They do not seem to refer to how well they apply the creative process. However, closer examination shows that Lecturer A felt that students' use of the creative process was below average, calling for improvement.

Question 10 was a follow-up to establish why lecturers commented as they did on students' ideas in terms of applying the creative process and effectively communicating with the target audience in answering the brief. The responses included:

*“... generally they struggle with communicating effectively with the target audience...”* (Lecturer A)

*“...we are dealing with a generation that has issues with rejection or maybe they (are) busy, but they are not trying ... they need to be pushed for them to do the work.... again, if I look at the current bunch of students, they are more concerned about submitting work and passing... a few of them want to create something not only that its good but... that reflects how much they have learned...”* (Lecturer B)

*“... it starts with ... knowing what the brief requires from you ... It's the biggest issue we have been having because they learn it at a very late stage... That's why it also takes a little bit longer for them to even start getting it because it's a process. ... So, it needs to be reinforced, reinforced, reinforced through briefs”* (Lecturer C)

*“... as I told you especially in the first year because ... 70%, 80% are starting from scratch; 20% got (?) and also ... you gonna get the few students who went to private schools so ... they most probably went through these processes of*

*ideation ...maybe mind-mapping and stuff like that, so maybe the problem could be the schooling system” (Lecturer D)*

*“...because I think they get distracted and they forget that they already made a decision about what the idea is, and they don’t connect to their target audience properly, so they’re missing the mark...” (Lecturer E)*

Question 11: The lecturers were asked what they thought could be improved in students’ ideation and development processes. The data is presented in table 4.13.

Table 4.13: Lecturers' perspectives of what could be improved in students’ processes (Author's own)

Lecturer	Responses
Lecturer A	Give triggers to apply to an image or object; Generate many alternatives; Give various strategies to develop more ideas
Lecturer B	Let students play games that enhance ideation; Give students more problems to solve and generate ideas; Give students different paragraphs to convert into visuals
Lecturer C	Ideation to be taught earlier in the first year and reinforced throughout; Make ideation the foundation of the first year
Lecturer D	Teach students how to think when they solve design problems; Help students apply themselves to assignments
Lecturer E	Make ideation the only component of a project; Change the marking rubric to focus on ideation; Ideation 70% and execution work 30%; They have to work to get the ideas

The lecturers’ comments are valuable and feasible in assisting students to improve ideation and design development. Making ideation the foundation of first year is essential. Furthermore, the lecturers need to explain in more detail what is happening or needs to happen, which is not currently done. Lecturers could conduct compulsory ideation workshops each year. All the design lecturers should be aware of what is being taught each year, so that they know which concepts have been covered by each lecturer, thereby making it easier to know where to begin in succeeding years. The researcher feels that more needs to be done to assist students to be creative in responding to the brief.

Question 12: The lecturers were asked to define visual plagiarism in their own words. Their interpretations are summarised below.

Table 4.14: Lecturers' definitions of visual plagiarism (Author's own)

Source	Definition
Definition in the literature (Kane 2016; Lexico dictionary 2019a)	Plagiarising is "the practice of taking someone else's work or ideas and passing them off as one's own." "...without attribution" or permission.
Lecturer A	<i>"Work that is too close to the original"</i>
Lecturer B	<i>"... It's just stealing... stealing images"</i>
Lecturer C	<i>"Using work or an image that you did not create and using it for your work and presenting it as your own"</i>
Lecturer D	<i>"It's (an) exact copy that's plagiarism, but you have to draw from what's been done."</i>
Lecturer E	<i>"...It's difficult because, in some cases, the things are stylistically similar to something else but they aren't the same thing ... whereas other times... things aren't stylistically similar at all but the idea or what it represents is not original, ... it's really about the technical side..."</i>

Based on the literature's definition of plagiarism, three lecturers tried to define it while the other two explained it. However, only two lecturers were able to define it properly. Confusion about plagiarism as copying also existed among the lecturers.

Question 13: The lecturers were asked what students know and understand about visual plagiarism. Extracts from the data are presented below.

*"I think they're very confused... in first year... we (should) explain and have conversations about how do we learn from others without plagiarising? How do we learn from others without copying? How do you use references to avoid plagiarism ... you have to interpret the reference... to make it your own"* (Lecturer A)

*"... they know it's wrong, but they still continue to do it because .... it works to their advantage, ... they can complete an assignment quicker, faster. What I do now is I get students to scan all their work before submission on TinEye (a visual plagiarism application) ..."* (Lecturer B)

*“... they think pulling an image from the internet is ok. We ... make them sign a plagiarism form ... just to make them aware of the legal implication ... In the first interaction we have with them, we speak about that a lot and we refer them to the study guide also... We have a lot of intervention points before the final submissions so we get the work, we get to question where did they get this (and) we get to ask them to send us the raw file so we see... what image belongs to them or not....” (Lecturer C)*

*“They know about it because we make them sign a declaration form that if they plagiarise... they can be suspended or expelled I think. Discipline, it's in the rule book ... But they are well aware of it” (Lecturer D)*

*“I think sometimes they don't understand enough... there are very few students that understand it because there's so much design work that exists already that looks similar to each other for students. A lot of students go ah! No! it's okay ... when it's really not ok so I think generally speaking students have a poor understanding of it...” (Lecturer E)*

Lecturer C commented further on the relationship between students' use of the Internet, plagiarism and ideation:

*“They... collect images from the Internet because they can't come up with their ideas. The two are very much connected. It's linked ... because they're frustrated... they go and take images on the Internet; it's the shortcut ... Those with the ability to develop their ideas, they don't need any Internet; they don't need Internet images because they just have their ideas and then ... generate their images. Yah, that's pretty much (it)...” (Lecturer C Interview 13<sup>th</sup> October 2020)*

### **4.3.3 Cycle 2 Analysis and interpretation**

The preceding section showcased the interview data from the students and lecturers. This section reviews and assigns meaning to the data presented, with the students' data interpreted first, then the data from the lecturers.

#### **1. Interpretation of Cycle 2 Student responses**

Students' responses to the initial questions on what ideation is and in what ways they thought it was important were very mixed. Some were unaware of what ideation means and its impact on their work. Ten of the 11 students were able to articulate why they believed ideation was crucial. This suggests that the students did not have a common understanding of the definition of ideation and its value. Clearer understanding could assist them in grasping and using this concept.

The second question required the students to describe in what way they thought ideation was important. Some noted that ideation is important because it gives one direction in a project, as

the first step in understanding the design brief, identifying one's options and how one can create something unique.

The data revealed that the students knew that scamps are used to brainstorm ideas, bring ideas to life, assist planning and provide a rough idea of what the final key visual (design) will look like, envision the final design and the process, help them to visualise, and know what they can and cannot create. Some students only mentioned one, with five providing comprehensive answers to this question.

Asked how often mood boards influence the direction of their design work, some students were confused because they did not understand the reason for executing mood boards and how to use them. Four of the 11 students could not provide a reason for using mood boards. The reasons could include that the concept and relevance of using mood boards were not covered and thoroughly reinforced, that students may not have paid attention in lectures; and that this could be caused by language barriers (See page 102 below).

Table 4.7 (see page 90) shows that of 10 students, one never referred to a mood board, two did so all the time, two students referred to their mood boards often, four did so once in a while and one referred to the mood board most of the time. This points to inconsistent use, with about 40% of the students referring sometimes, 20% consistently and 40% never or occasionally. Thus, more needs to be done to encourage students to refer more to their mood boards. However, the essential question is how they consult and reflect on them, which is difficult to determine. Table 4.15 summarises the students' reasons for using mood boards.

Table 4.15: Students' reasons for using mood boards (Author's own)

Reason for using mood boards	Students
Gives you background information about what you are doing and as a reference point	I and G
They give options for colour schemes and other components that can be incorporated into design work	D, E and F
They give the direction one is going to take and once you do a mood board maybe you can develop the concept further focusing either on improving the design skill or on the choice of typography in the design	D and E
Help inspire the look and feel of the final design and spark more ideas than what you have just done, helping to generate new ideas	B, C, E, H and J



Help come up with the right answer	K
Do not know	A

\* *Student E gave three reasons for using mood boards.*

Several students stated that mood boards influence their work in various ways, which are reviewed in table 4.15. They are used as a reference point, to pick up different elements to use in their work such as colour schemes, and ideas, and as a way of not copying and a source of inspiration. Lastly, students mentioned that mood boards give one the direction one is going to take. Students B, C, H and J shared similar views on using mood boards to help inspire the look and feel of the final design, while students D, E and F showed their understanding of the use of mood boards, highlighting their understanding of their function. This understanding stems from something they would have been asked to do or were taught by their lecturers, including producing a range of mood boards with examples of the kinds of typefaces, illustration styles, or colour schemes and palettes they were thinking of using in their design work.

Using mood boards is essential, but selecting elements from them to use in a project can be problematic (see page 99 on students' responses on the use of mood boards question 6). Students might merely copy design elements from their mood boards rather than ideating, thus falling prey to plagiarism. From another perspective, it is likely that they will pick up elements, but gaining inspiration from the entire mood board is a much more sophisticated skill. There is a thin line between inspiration and plagiarism, calling for the skill to differentiate between and apply the two when working on design assignments. Experience and knowledge, which are gained through learning and practice, are required to accomplish this.

The ability to understand and express themselves in English is another challenge. Many students speak and write in English as a second or third language. Given that some students had never used a computer before commencing their studies (see Lecture D's comment on page 96), it is likely they did not attend schools that offered sound tuition in English. The National Student Financial Aid Scheme (NSFAS) provides bursaries to students from low-income households with an income of less than R350 000 per year (Cloete 2021). Because the majority of DUT students are NSFAS financed, using computers and expressing oneself in English, which is the language of education, could be a challenge. They may be able to speak basic English, but struggle to express themselves fluently, correctly, or creatively. Thus, students' failure to comprehend the use of mood boards might be due to misunderstanding as they could be unable to communicate their understanding of mood boards. This could also lead to plagiarism because

the boundaries of fair use of existing materials are unclear. Fair use refers to how many design elements students can use from mood boards without committing plagiarism.

Further investigation was undertaken to establish how well the students understood plagiarism. Three students (D, F and G) were able to define the concept, and some demonstrated limited understanding, while others did not understand it at all (table 4.9; page 91). Four students were unable to define visual plagiarism, while four had a vague idea. If students are unable to distinguish plagiarism from copying and inspiration when executing design concepts using references, they might fall prey to plagiarism. As discussed in section 2.4.3, when someone copies, they imitate someone's work without claiming they originated it; plagiarism also involves copying but the person claims the work as his/her own. Four students failed to define plagiarism, but described it as copying without mentioning taking ownership of copied work. How can a student avoid doing something that they do not understand or cannot define?

During the one-on-one interviews conducted following the workshop, students were asked what they had learnt. Three students stated that it was beneficial, and the others did not respond. This sample is too small to be representative. As noted previously, the researcher is not sure why only three students responded to the question but suspects that the unresponsive students could not identify how the workshop benefited them. Thus, the findings on what students learned are restricted to the three that responded. Firstly, they learned to be creative by being open-minded in letting go and letting their minds wander, rather than forcing the project in a certain direction. Secondly, they learnt that when they receive a design brief every thought counts and every single step is important. Thirdly, these students learned that it is not difficult to ideate. They can achieve a great deal in a short period of time because previously they would do one thing at a time, wait to finish executing an idea, and then go back to brainstorming. Lastly, the workshop taught them that they can come up with an idea for a teaser, logo, or advert all at once rather than going back to the start.

## **2. Interpretation of Cycle 2 Lecturers' responses**

This section interprets and links the results from the lecturers' interview data. The researcher sought to determine the extent to which ideation and the creative process were taught to students. Table 4.10 on page 94 summarises these findings. The data shows the levels the graphic design lecturing staff taught and whether they taught students about the creative process with an emphasis on ideation. This question seemed to be vague, thus, there might have been misinterpretation and he cannot deduce the extent to which the lecturers had taught ideation.

However, based on the responses some students had learnt about ideation, although they do not clarify whether the lecturer responding taught these concepts, or someone else. Given that the question was asked in a yes or no format, more detail is required.

The lecturers' interview data revealed that ideation had not been optimally covered and reinforced, as only two of the five lecturing staff indicated that they had taught it. This question was key for comparison purposes, to help the researcher understand if ideation concepts were covered or if students might be forgetting what they had learned, which in turn would help to develop a solution. Instruction in ideation is an issue which needs to be examined in more detail. Additional questions that need to be answered include: To what extent was it taught? Was it just one lecture and then the topic was forgotten? Was it reinforced with each project, and if so, how? Was the concept thereafter explicitly included in project briefs, or merely assumed?

Lecturer C's (table 4.6) comment that when students reach third year, they seem to know nothing about ideation, suggests that students are not receiving sufficient instruction in ideation. While the lecturers' comments do not imply that the topic was not covered, they may indicate that students did not retain that knowledge. Table 4:10 revealed that ideation was taught by two lecturers, even though it is not clear if the second lecturer personally taught the subject. Lecturers B, C, D and E were all of the view that the ideation process is built into the brief in varying degrees, in the feedback for design projects or taught by one of the lecturers in first year and that students focus on the design solution rather than on how to reach the solution (see lecturers' responses). This suggests that they think that students would understand ideation and the creative process, even though it has not been explicitly taught, which is cause for concern. It might further imply that lecturers think that students are to blame if they do not ideate. As noted previously (page 93 section 4.3.2 1. b), this does not confirm that students have understood ideation concepts or apply them consistently. If ideation is integrated into their studies or the brief, it would seem the lecturers do not sufficiently cover and reinforce ideation concepts with students. The students noted that they had only learnt about ideation and the creative process from Lecturer A, who taught them in their second year, even though Lecturer E noted that a lesson on ideation is conducted each year to assist first-year students. It would appear that this single lesson is insufficient. Since Lecturer C, who used to teach ideation in first year, is now lecturing third-year students, it seems to be assumed that his/her replacement will continue to teach it, but first-year lecturers assume that students will be taught ideation in the second or third year, which would be too late. The module descriptor for Visual Communication Design (VCD) 101 in the department's handbook states that ideation should be

introduced in this first-year, first-semester module (DUT 2021:16 - 21). Subsequent modules VCD 201 and VCD 202 explicitly require its inclusion by name, emphasising that these foundational concepts should be reinforced throughout the degree. The handbook and the study guides are enforceable; thus, lecturers need to ensure that they cover all the required course content.

This finding highlights that ideation, and the creative process might not have been sufficiently taught and reinforced for students to grasp it and integrate it into their habitual processes. Lecturer C thus highlighted a problem that needs to be solved. A possible solution would be to make ideation and the creative process an explicit component of every brief, linked to a stated percentage of the total mark. Something that is only taught once is likely to be forgotten, which links to the problem of the assumption of remembering in the constructivist theory of learning. As Schunk (2012) points out, Vygotsky's constructivist theory of learning does not account for students forgetting or remembering what they have been taught. Haleem *et al.* (2016: 2) concur that repetition and reinforcement improve the chances of a newly acquired behaviour being repeated or recalled in the future.

Lecturers C and E also noted that when ideation is taught it should be emphasised (see table 4.13, page 98), and students should be taught that ideas do not simply land in their heads. Ideation is one of the most important phases of the creative process. The lecturers also reported that students do not ideate in a conscious or consistent manner. Lecturer E emphasised that if lecturers want students to ideate in every project, this must be an explicit element in every brief. Lecturers would have to introduce the stages of ideation 1... 2... 3... 4...5..., etc., in the first year, and reinforce the process in every project that follows through the second and third years. All projects would have to explicitly include ideation, and the final submission and marking rubric would allocate marks solely for ideation. As noted by de la Harpe (2006: 2), project rubrics currently focus on execution, and neglect ideation. The graphic design industry is project-driven, and the graphic design department adopted this approach so the students are constantly under pressure to deliver. As a result, they are not discovering how creative they can be in the shortest possible period of time.

Lastly, Lecturer C pointed out that it would be hard to improve students' ideation in the second and third years because it is currently not part of the course. Hence, any further ideation would be beneficial.

Asked to rate how well students apply the creative process, three of the five lecturers rated students' performance as below average, one as average, and one as above average. They noted that students struggle to communicate effectively through their projects because they fail to integrate the brief by breaking it down in a way that simplifies the message and communicates more easily.

Students have not learned to communicate with unfamiliar groups or categories of people, and they would need to conduct research on target audiences to be able to understand, empathise, and communicate with them. Designers need to understand their audience as much as the audience needs to understand the message, because the message will not be transmitted if the visual signal is miscommunicated. This highlights the importance of students learning and comprehending the Emmert and Donaghy communication model, which focuses on understanding and researching various target audiences' cultures and on the two-way nature of communication. This would assist students to create custom designs and communicate effectively across cultures (Hembree 2006: 27; Davis 2012: 21).

Lecturer C suggested that students need to learn earlier and more thoroughly about communication. This supports Davis' (2012: 15) perspective that understanding the communication process improves effective communication and assists designers in understanding their roles in communicating ideas. Students would thus also need to learn about the communication process in deeper ways than sitting through lectures or doing tests. Work needs to be set that examines what communicates effectively and what does not, the reasons why, and how to analyse these issues. These activities would help students to communicate their ideas more effectively, which they can apply in their work.

Lecturer C was also concerned that students are learning about communication and answering the brief later in the course and are not receiving sufficient or early enough tuition that would assist them to answer the design briefs efficiently.

*“(To) some extent they do answer the brief, but the communication is very poor. It’s the biggest issue we’ve been having because they learn it at a very late stage. I mean I’m not sure what they’re doing in 1<sup>st</sup> or 2<sup>nd</sup> year but when they come to 3<sup>rd</sup> year, (the students) don’t know (anything) ... about communication, so it’s like just starting. So, it needs to be reinforced through briefs.”* (Lecturer C Interview 13<sup>th</sup> October 2020)

The researcher believes that it is of major concern that lecturers do not know what is covered in other years. As noted earlier, the module descriptors and study guides explicitly include ideation in the teaching methods and course content, and all lecturers should abide by the current versions of these documents. If they do not know what was covered in previous years, they may assume that students have been taught certain concepts and not cover them, although they should still review and reinforce such content.

Lecturer B noted that students do not appear to be concerned about the quality of work they submit. This is concerning and relevant for the project even though it was not investigated. The researcher believes, and research by the Ukraine Crisis Media Center (2017) agrees, that a lack of ambition and motivation is the reason for students plagiarising. Lecturer B claimed that all students seem to be concerned about is to submit work and get 50% to pass. Very few appear to want to create top quality work and some of their work does not make sense or relate to the target audience. The researcher did not investigate this issue and relied on the lecturer's opinion.

Lecturer B commented that the mind map and word list produced by students are merely a slew of items thrown together to fill the page. This also points to students' lack of ambition and is likely motivated by the need to show that they are putting in the work. If students had ambition and drive, it is likely that their mind maps and word lists would relate to each other, to the brief, and the audience; and contain potential ideas.

The design lecturers were asked to rate students' innovation (creativity) in answering the brief in work submitted for previous assignments. Overall, the lecturers' ratings were below average: one rated students' work as above average, two as average, and two below average (see table 4:11). Lecturer C suggested that students' work is below average because they cannot come up with ideas and are not innovative. Lecturer D added that students' innovation is weak with weak concepts and final execution; they need to follow all the steps in the creative process. While Lecturers C and D ascribe all responsibility to students, one might ask how it is that lecturers failed to develop these abilities in class. If they consider the students' capabilities below standard, it is at least partially the lecturer's responsibility to develop them by restructuring the course. Students' lack of experience, cultural capital and range might contribute to weak innovation, and they may be tempted to resort to plagiarism as an easy way out. This could be due to their lack of confidence in using a computer, being overwhelmed by the pressure of meeting deadlines, and the lack of a design process.

Lecturer B highlighted (see page 97) that some students might interpret criticism of their work as personal rejection, which could discourage them from making an effort. It is difficult to assist students to improve their work if they take criticism personally. In graphic design one learns by doing and through constructive criticism. Students need to understand that feedback is a response to their work, not to them personally; and is necessary for lecturers to be able to assist them. The lecturer needs to provide constructive criticism, motivate the student in the learning process and educate them on how criticism is given and accepted

Lecturer E also emphasised that when students see designers' work being copied by other designers, they think it is normal and acceptable because these designers have not been warned against outright plagiarism or suffered any penalty. More has to be done, according to Lecturer E, to assist students early on in the course, such as teaching them about ideation, plagiarism, and the other topics discussed above. Although some designers may have got away with it, it is still a bad practice that will have repercussions. In contrast, Lecturer B (Interview 08<sup>th</sup> October 2020) believed that students know it is wrong but continue plagiarising because their priority is to submit work on time. Lecturer C (Interview 13<sup>th</sup> October 2020) noted that even though students are required to sign a plagiarism declaration before they submit work, they ignore the issue, notwithstanding the legal implications and consequences. Several students indicated to the researcher that "The Net" (the Internet), was where they found images, information, and ideas. During the workshop, the researcher observed that students were not using their phones to go on "The Net" to obtain ideas.

Lecturer C (Interview 13<sup>th</sup> October 2020) made no mention of whether plagiarism was handled again after the initial session, or whether the declaration forms were signed without any follow-up, explanation, or reinforcement. No indication was given of any student suffering any penalties for this practice. Hence, more effective methods should be adopted to discourage students from plagiarising throughout the creative process and should be included in every project. Plagiarism might be easier to avoid if all phases of the creative process are diligently followed in each brief. Lecturers should monitor the process, such that images or elements that pop up suddenly in a student's work, with no development, can be easily detected. The lecturer can immediately warn the student against plagiarism. Because students generally have a limited understanding of plagiarism, lecturers should instil this knowledge in them, so that they develop ethics against plagiarism.

Lecturer C (Interview 13<sup>th</sup> October 2020) added that students take ideas and images from the Internet because they are not able to come up with original ideas. This lecturer claimed that this is directly related to students' inability to come up with creative ideas (see page 109). If students were creative, they would be able to ideate original creative ideas and only use the Internet as a source of inspiration. The way students use the Internet should be the same as the way they use mood boards, that is, as a source of inspiration to produce original and creative ideas. Lecturer C commented that some students are able to come up with ideas and do not require photos from the Internet since they have their own concepts, and can also develop or construct their visuals.

The lecturers were asked their opinions on plagiarism by students and what could be done to help students to understand and avoid visual plagiarism. Firstly, they noted that in general, it is hard to discourage students from plagiarising because they encourage them to learn by looking at other designers' work; it is difficult for students because the difference between inspiration and plagiarism is not clear-cut. However, Lecturers C and D claimed that students know about plagiarism and that it has consequences. They questioned whether students can come up with ideas without any form of reference to what has been done before. On the surface, plagiarism seems a simple issue, but the analysis revealed that is difficult for students to grasp this concept. Lecturers A and E recommended that students should be cautious in using inspiration so that they do not plagiarise. Instead of looking at only one source for inspiration, they should make use of multiple sources. Lastly, Lecturer A recommended that students need to understand how to use references and avoid plagiarism. Equivalent to Kleon's (2012: 38) injunction to "steal like an artist", this means that a designer can use other people's work as a source of inspiration by mixing and matching, remixing, and integrating ideas from many sources.

#### **4.3.4 Cycle 2 Themes**

In Cycle 2, text and sections of the data were coded before categorising the data into different themes using the procedure explained in chapter 3 (section 3.12 page 69). This procedure was used for all the interview data. Three themes emerged from the students' interview data, and four themes from the lecturers' interview data.



## 1. Students' themes and codes

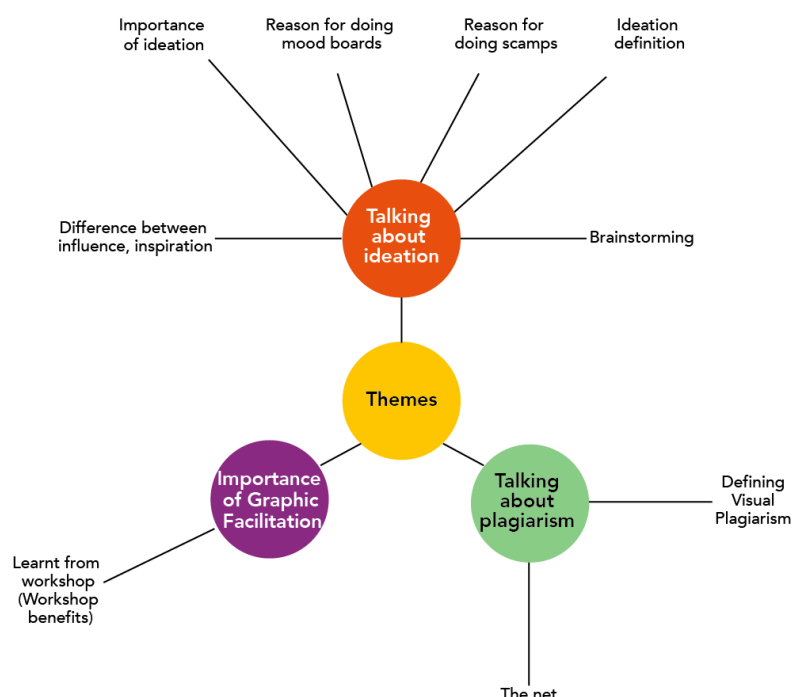


Figure 4.1: Cycle 2 Students' nine categories and three themes (Author's own)

The themes that arose from the students' interview data were “**Talking about ideation**, **Talking about plagiarism** and **The importance of graphic facilitation**.” The first focused on instances where students had mentioned ideation; instances where the concept arose or coming up with ideas more generally. Under “**Talking about ideation**”, there were six codes: “*Importance of ideation*”, “*Ideation definition*”, “*Difference between influence and inspiration*”, “*Brainstorming*”, “*Reasons for doing scamps*” and “*Reasons for doing mood boards*”. For the theme **Plagiarism**, two codes were grouped, namely; “*The net*”, and “*Defining visual plagiarism*”. Under the “**Importance of graphic facilitation**”, one code was used to categorise the data: “*What was learned in the workshops (Workshop benefits)*” Different colours were used in Microsoft Word to code the ideas within the words, phrases, sentences, and paragraphs where they occurred in all these themes and codes. The coded data was printed, and then cut and pasted into the various themes on a board as noted in chapter 3, section 3.12.

## 2. Lecturers' themes and codes

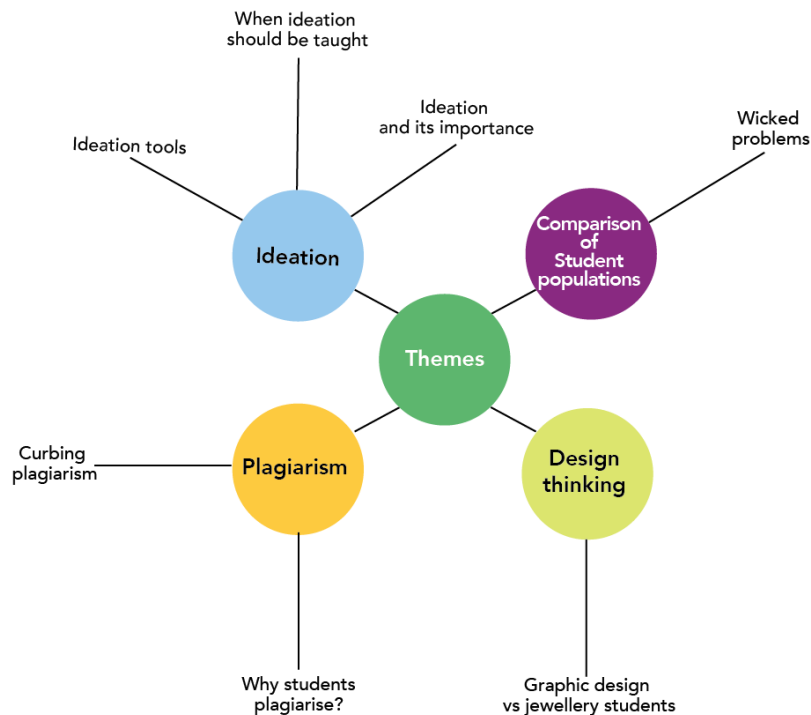


Figure 4.2: Cycle 2 Lecturers' seven categories and four themes (Author's own)

**“Ideation, Plagiarism, Design thinking and Comparison of Student populations”** were the four patterns in the data identified as the lecturers' themes. The theme that dealt with **“Ideation”** had three concepts that were assigned names that most accurately described what was being said by the participants: *“Ideation tools”*, *“Ideation and its importance”* and *“When ideation should be taught.”* Under **“Ideation”** the theme was grouped with codes and categories where instances and concepts of ideation and generation of ideas were noted.

The second theme dealt with **“Plagiarism”** and fell under two codes: *“curbing plagiarism* and *why students plagiarise.”* Thirdly, the theme for **“Design thinking”** was based on *wicked problems*, that addressed the multiple solutions to design problems.

Lastly, **“Comparison of student populations”** compared different student groups. It included coded data that identified comparisons between graphic design and jewellery design students.

#### **4.4 Cycle 3**

In Cycle 3, 12 second-year students participated in the workshop. These were different students from the previous cycle and consisted of six males and six females, one of whom was white and 11 black. These students were interviewed after the workshop on the 19<sup>th</sup> of November 2020. No third-year students participated.

Following the workshop, three lecturers were interviewed, comprising one female and two males (one white and two black), on the 13<sup>th</sup> and 15<sup>th</sup> of December 2020 and the 12<sup>th</sup> of January 2021 on Microsoft Teams. In Cycle 3 Lecturer F had not participated in Cycle 2 but the other two, Lecturers B and E were part of Cycle 2. The interviews were transcribed, and the data were analysed according to the process described in chapter 3 (page 69, section 3.12 Data Analysis Procedure).

##### **4.4.1 Cycle 3 Workshop observation**

The workshop was conducted in Room CA0104C. As before, students were initially reluctant to contribute, even though the design brief was thoroughly explained to them. Only when they had warmed up did two students contribute, followed by the others. They were asked to draw content, visually summarise or illustrate some of their ideas in front of everyone.

Some students were shy about illustrating their ideas in front of others. The researcher established that they felt that their drawing skills were not up to scratch, but he encouraged them to go ahead. He also reassured them that the illustrations were part of the process and that the idea being illustrated was important, not the quality of the illustration. The workshop ended up being interactive in that every student wanted to speak, express and illustrate their ideas. Even marginalised students voiced their opinions as the workshop progressed. Every student in the workshop made contributions, so it appeared that none felt left out.

##### **4.4.2 Cycle 3 Introduction of interview data**

The data from the students' and lecturers' Cycle 3 interviews are presented in the sections below. The Cycle 3 interviews were transcribed, and the data analysis technique set out in chapter 3 was followed (section 3.12, page 69).

## 1. Cycle 3 Data presentation from the interview question guides

### a) Students' responses

As noted in chapter 3, the Cycle 3 interview question guide had seven questions which sought to establish the students' opinions on the benefits of graphic facilitation and help students to avoid visual plagiarism.

Question 1 asked the students what they understood about influence, and to define it. Table 4.16 below tabulates their responses.

Table 4.16: Students' definition of influence (Author's own)

Student	Definition of Influence
A	<i>"...is the ability to say one thing or another to someone else that should change their opinion on something towards work... maybe persuading the viewer of something towards the product or service you're trying to sel."</i>
B	<i>"...being able to afford somebody to do something or maybe to think in a certain way that they wouldn't have"</i>
C	<i>"...seeing what someone or what other people did and from there having your ideas"</i>
E	<i>"Influence is something that makes you want to do something like that influence ... You feel it's something that makes you want to do something"</i>
F	<i>"Getting an idea"</i>
D, G and J	<i>"When you are inspired by something or someone"</i>
H	<i>"...it's something that makes you feel in some type of way... Like when a mood board makes you think or makes you have ideas of a certain kind, not just anything the mood board will refine"</i>
I	<i>"...it always has a certain result with whatever work you get to do. Influence...: it's like something that drives you to do a certain thing for that certain time. I think it's like a certain trend"</i>
K	<i>"Uh, okay. Let's move to the next question"</i>
l	<i>"You know, it's something new. When you're influenced by something you're changed by it, you're moved by it"</i>

Students gave varying definitions of influence, with ten managing to define it accurately, while two did not. Three students used "to inspire" in defining influence. One did not even attempt to answer. Students who have difficulty defining a concept like influence might have difficulty interpreting other terms.

Question 2 asked students to define and explain the meaning of "appropriation". They responded as follows:

Table 4.17: Students' definition of appropriation (Author's' own)

Student	Definition of Appropriation
A, F and K	<i>"Don't know"</i>
B	<i>"Probably stealing"</i>
C	<i>"I think it's doing things according to the law doing things. Right"</i>
D	<i>"Um, I'm not sure but I think it should be something that links to what you trying to get out there. Maybe like, um, let's say you have a poster and then a poster should have, things link to one another in terms of imagery and text. ...appropriation is, um, your things should link together in... communicating a certain message to maybe like the public"</i>
E	<i>"...is how to do something right"</i>
H	<i>"Appropriation is like if that is proper for that certain thing? Like if you have to come up with an idea. Is it appropriate for that certain? let's say project or whatever"</i>
J	<i>"...is it, um, is it attracting the right targets? Um, is it communicating...? The message you're trying to send. Yaa! Something like that"</i>
L	<i>"Appropriating is when you borrow a certain aspect of something"</i>

Student G's comment was incomprehensible and Student I did not answer this question; hence they were omitted. Only Student L was partly able to define the term appropriation, with ten students failing to articulate the meaning of appropriation and two managing to articulate it.

Question 3: Students were asked what they understood about inspiration and to define it. Their responses are tabulated in table 4.18.

Table 4.18: Students' definition of inspiration (Author's own)

Student	Definition of Inspiration
Aa	<i>"Maybe looking at what previous people have done and understanding... what look and feel you want... Drawing from them"</i>
B	<i>"...Being able to influence somebody, I think in a particular way and come up with an idea"</i>
C	<i>"It's about hearing something or seeing what has been done... And ... getting like different ideas of what another person did in their way and interpreting it in your way"</i>
D	<i>"Inspiration is... like something that you adapt a certain style... you might want to adapt from someone, not all of it, because if you do that, it'll be seen as, um, like you're trying to copy that... And must I define it, now inspiration is like, imagination maybe"</i>
E	<i>Inspiration! Ah.... something that motivates you ... inspiration is making somebody do something"</i>

F	<i>"... you get inspiration from for example when you are working on something, maybe you're inspired by someone's idea.... Maybe using someone's... idea liking someone's idea or... and then you have to execute the idea back..."</i>
G	<i>"Inspiration it's... I think it's when you are inspired... seeing something good"</i>
H	<i>"Ok, inspiration is like inspiring I don't know another word...Okay! If... it attracted me and then it made me want to do something that's the same idea as what attracted me"</i>
I	<i>"... Inspiration, that's when you get to... connect the dots based on whatever work or whatever, um, whatever drives you"</i>
J	<i>"...it's something that you really like and maybe would want to work towards"</i>
K	<i>"A source of creativity"</i>
L	<i>"Again, moved by. You know, when you're inspired by something it gives you like new ideas, Like your light bulb moments kinda like inspiration"</i>

Most of the students appeared to think that influence and inspiration are the same thing, or could not articulate their understanding, or both, indicating their confusion. When working in class they using the word inspire to define both inspiration and influence. Four students were close to defining the term, since their definitions had elements of inspiration, whereas eight failed to define the term accurately.

Question 4 asked students to differentiate between plagiarism, influence, appropriation and inspiration. Their responses are presented in table 4.19.

Table 4.19: Students' definitions of terms (Author's own)

<b>Student</b>	<b>Definitions</b>
A	<i>"... plagiarism is... directly taking what someone has done, ..., and making it yours when it's not yours... influence and inspiration... instead of taking the exact elements in the work you draw it or draw inspiration and make something similar without plagiarising"</i>
B	<i>"I guess it has to do with acknowledgement. ... you take an idea (then) you have to acknowledge the first person that inspired you to do it. So, without acknowledgement... you are stealing it"</i>
C	<i>"... the difference... is that plagiarism, it's taking someone's thing and doing it exactly the way they did it, without mentioning that person... Influence, it's taking what they did and from there doing your own thing just because of their work... appropriation, ...(is) doing things according to what has been said. Inspired: by what has been done, having your own thing"</i>
D	<i>"...plagiarism is when you copy, like word for word... influence is what you see on the internet that would influence you to do like a piece of work... appropriation is your things"</i>

	<i>should link together... inspiration is that more of it like leads to influence in a way inspired by what you see, like the public eye”</i>
E	<i>“Plagiarism is where you are not being motivated, but you like what you see... So, you’re... copying and pasting... influence is it's like... influence, you see something and you want to do, but not the same way as... it's done here. And inspiration in appropriation is like doing it, like in your way, ...Inspiration, is being motivated to do that thing”</i>
F	<i>“Hmmm, am not sure”</i>
H	<i>“Plagiarism is taking the work as it is and using it as your own? ... Influence.... it's as if you're the influence. Oh, it's like using the work as a reference. Where you want your work to be like. I've seen your artwork there and then I want to be like Tendai someday because I like his work, I want my work to reach that point too... I think that's an inspiration and then influence is like Dane influences me... to do this type of work... something like that it gives you motivation, influence”</i>
I	<i>“The difference ...between plagiarism and influence is that with plagiarism you're just taking something that belongs to someone (else). Neh! And then with influence, you are catching... this certain trend and then... you make it your own. That's how you get to make it look different.... and influence, it's catching on a wave”</i>
J	<i>“... let's start with plagiarism... You're just copying someone else's work... The influence I guess you just learn from that thing... and inspiration. It's more like, yeah, I like the way you work, but I want to work around that, but I don't want to be like you”</i>
K	<i>“...plagiarism it's probably to steal... and then influence is to maybe borrow... appropriate: I'd say maybe it's something valid... and then inspiration uh, also I think it's the same as appropriate”</i>
L	<i>... plagiarism is stealing something and saying it's yours. Being influenced by something is to be moved or inspired by something. Appropriation is to take from something like a certain aspect like something small nyana, (smaller than small) you know... Colours or palette scheme or something. And then inspiration is to inspire. Something like that. It gives you an idea, something that like gets you out of your rut, you know something like pssh”</i>

Question 5: The graphic design students were individually asked which ideas they came up with in the graphic design workshop:

*“Someone opening the Gates”* (Student A)

*“I came up with the normal space X. Ironman, Gumball and Elon Musk.... For the... the second one was the teaser... lightning, thunderstorm and explosions”*  
(Student B)

*“... time”* (Student C)

*“... the speech bubble and... the explosion of colour... when colours explode, I feel like it is where we become freer into thinking about what you want to communicate”* (Student D)

*“Brain... and the endless road”* (Student E)

*“Phone...”* (Student F)

*“Tourist, Popcorn... Process industrial”* (Student F)

*“There is the lightning and the thunder, the sunshine... head in the cloud”*  
(Student H)

*“I mentioned the rainbow nation. ...board games ... There is Weed, there is puzzles... Shooting ... Toy story”* (Student I)

*“I came up with Food ...with a flag ...the brain... a notebook”* (Student J)

*“...daydreaming rockets”* (Student K)

*“I came up with wires... multicolour”* (Student L)

In Question 6 students were asked how they came up with the concepts indicated in the preceding question. Below is a breakdown of how they came up with their ideas:

*“...something that just popped up... out of nowhere”* (Student F)

*“I had a look at what everyone else is doing about something new, and you explained about what the other groups said, um, sleeping in the clouds or the heads in the clouds and then I thought I read the catch phrase... imagination and way beyond and I just thought to me what imagination was and in what way the beyond words could be and I thought of going to a different place where my imagination determines what is around me. And I thought how do I unlock that, so I thought of the top, if I just open the Gates to a new world”* (Student A)

*“...what somebody said”* (Student B)

*“So, time came into my perspective... when you say, let me think. You must give me time to think so that I can come up with an idea... and I came with 'new' because at the moment in time we hadn't found a logo. So, since the name of the company was Kreative what... create, creating something new. Comes with the creativity.... I thought of these ideas because of what other people may have said, influenced my thoughts”* (Student C)

*“...more or less like you connect the dots and sometimes you just brainstorm.... So, I feel like when things explode, it's like a lot of ideas”* (Student D)

*“Came up with the ideas”* (Student E)

*“...it was something I was thinking...”* (Student G)

*“...it was just random...”* (Student K)



Students B, H, I and L ideas were influenced, triggered by what someone had said earlier. Student J did not respond to the question.

Question 7: Lastly, the students were invited to reflect on what they had learned during the workshop:

*“I learnt ... that any idea can be ... good or bad. Could be with some weight into becoming your final idea or even maybe influencing your other ideas to help you get to your final idea. ... I often struggle because it's always hard for me to get an idea and I'm like, no, that's not good. Let me not write it down. And then I ended up just completely forgetting about that. And that could be another avenue that I could explore”* (Student A)

*“...because they help us visualise the words (to see visually the ideas in front as they are discussed)”* (Student B)

*“I learnt that any idea might work given the mere fact that you can explain an idea”* (Student C)

*“I learned that you should ... think for yourself and you shouldn't rely on the internet for brainstorming and stuff like that. So, you should come up with original ideas that you might want to communicate in the future”* (Student D)

*“There's no idea that is less. Every idea counts and you need to jot down everything that you have in mind. You don't have to take anything like that for granted...”* (Student E)

*“Even the silliest ideas can produce good results in the end... When we created the stories it made sense, but then as we were ... just saying in the workshop... to you it didn't make any sense at first but then when you put it together at the end it kinda made sense”* (Student F)

*“It was helpful so that I could see the meaning of the visuals”* (Student G Interview 19<sup>th</sup> November 2020)

*“If you didn't write it in words you were drawing it, if you were not drawing it you were writing it in words. Either way we could understand what we were saying”* (Student H)

*“As much as some were inappropriate, some were helpful”* (Student I)

*“learning that you can take something that you might not pay much attention to and come up with something great with it”* (Student J)

*“From the information. And I learned the importance of, uh, just thinking freely to you know to come up more with ideas and how to expand the ideas from the ideas you have”* (Student K)

*“Were the doodles helpful? Yes! People think in pictures and people don't think in words. So, it makes the most sense to have things doodled than to have written” (Student L)*

As shown in the above excerpts, graphic facilitation was beneficial to most of the students; nevertheless, some of the illustrations were inappropriate for Student I. This highlights that, while visual facilitation is useful, it may cause some challenges for workshop participants and the workshop facilitator must be aware of this. The student may have perceived or related to the graphic facilitation illustrations as offensive because of his/her personal history and religious beliefs.

#### **b) Lecturers' responses**

The lecturers' Cycle 3 question guide contained ten questions which investigated the students' progress and provided a comparison with the student data. Furthermore, it sought opinions on what students had learnt and applied in the assignment they submitted after the workshop (see Appendix E (ii)). The responses might have been more accurate if the lecturers had used more formal educational terms during the interviews, but this was not their practice. Lecturer F did not participate in Cycle 2, but the other two lecturers, B and E were the same lecturers from Cycle 2. Lecturers A, C and D did not teach these groups and were not included.

Question 1: In Cycle 3 the lecturers were asked to share their perspectives on what they had observed and rate the work submitted or ideas presented by students in the previous assignment, focusing on students' innovation (creativity) in answering the brief.

Table 4.20: Lecturers' opinions on students' innovation (creativity) (Author's own)

Lecturer	F	B	E
Level of innovation	Below Average	Below Average	Above Average
(creativity)	3	3	6

Question 2: The lecturers were asked to justify their opinions on students' innovation (creativity) in answering the brief:

*“...the project was a layout project... a lot of the decisions had to be made in a group, which they did a good job of...but it needed a lot of prompting from me ... We did a lot of exercises, we did a lot of... writing and presentations. ... where they have to do individual work... I'm not finding their innovativeness or their originality, but... it's because they first need to understand the technical bits, ...*

*the counting, the mathematics involved and what-not. Then... after this feedback... they might now just get... to being creative... and adding some originality, just understanding that you can be ten people designing one book, but you should be able to see if you divided it by five pages (each), ... that there are different designers, even though there are those basic elements, ... I would say they did quite well... in the exercises, 'cause we started with hand exercises. ... most of them, I don't feel they've even started being creative. Confused or getting used to those technicalities and using Indesign the software” (Lecturer F Interview 19<sup>th</sup> November 2020)*

The lengthy excerpt from Lecturer F was included since she explained the assignment that the students worked on. She noted that they did well in the hand exercises and working in groups. It is possible that lecturers focused on hand exercises and software tuition rather than creativity.

*“...they go through a stumbling block because they become so formal, they treat this whole thing ah!... their very formal approach to this creative thing...what I would say (is) that the students are ... battling with (it). I'll... work on them on (if) what you want to say is going to be boring... they just battle ... to take a simple message and try many different ways of... solving one problem” (Lecturer B Interview 19<sup>th</sup> November 2020)*

*“...they've got like great ideas from the beginning. ... but there's a group of students who are still completely missing the point. ... it'll happen like four times where they'll send me stuff and it won't be right. And I'll give them feedback and then they'll send me more stuff. And I think it's really... got more to do with students' interest in actually doing the work than it has to do with the accountability. ... and then there are students whom I haven't heard from” (Lecturer E Interview 19<sup>th</sup> November 2020)*

These comments suggest that all three lecturers were dissatisfied with the students' work. Lecture E noted that the work was above average but later commented that he had not worked on projects that focus on creativity, the creative process and communication. Instead, the briefs that students had worked on were largely concerned with technical specifications. Hence Lecturer E's comment is of doubtful relevance.

Question 3: The lecturers were asked to rate the students' work on the most recent assignment in terms of their innovation in addressing the brief, in comparison to earlier work they submitted. All three lecturers felt that the students' work had improved slightly.

Question 4: The lecturers were then asked to defend their views on the comparison of students' originality (creativity) in answering the brief:

*“When students were taught about the first project, they did not apply those skills to the following project. Students did not understand that they start from somewhere and build their skills from each project. By the time the students got to the actual project, their understanding was better. In terms of collecting information and conducting research on the target audience, they had a better understanding because the assignment or the research parts got them to a point where they had to go into that kind of research. As a group they improved; however, individually there is still more work to be done”* (Lecturer F Interview 19<sup>th</sup> November 2020)

*“I think it improved because they were working in groups, or... I forced them to propose a message and, when they eventually did propose a message, I held them to that. One group came up with a message that design is diverse”* (Lecturer B Interview 19<sup>th</sup> November 2020)

*“The good students have stayed good. The average students have just stayed average, ...but the expectation has gone up... in terms of brief requirements. Maybe there might be one or two that get worse... But generally, ... they've just stayed the same. This year is a tricky one because they might be getting worse because of other things and... not this project”* (Lecturer E Interview 19<sup>th</sup> November 2020)

Lecturers F and B made similar observations that students' group work had improved, highlighting that a few students who were creative might have been covering for others even though some might have improved. Lecturer E concurred that students improved because the intensity and demands increased with each assignment. Had the student's creativity in answering briefs regressed, the lecturers would have mentioned this.

Question 5: The lecturers were asked to assess the students' ideas in terms of applying the creative process and communicating effectively with the target audience in answering the current assignment brief. Their opinions are summarised in table 4.16 below.

Table 4.21: Lecturers' opinions on students' application of the creative process (Author's own)

Lecturer	F	B	E
Level of communicating effectively	Below Average 3	Average 5	Average 5

Question 6: The lecturers were asked to explain their rating of the students' work ideas in terms of utilising the creative process and effectively communicating with the target audience in response to the current brief:

*“When they had to apply the individual effort or inputs, I don't see it yet. Maybe one or two people there that, you know, there are those elements they are starting”* (Lecturer F Interview 19<sup>th</sup> November 2020)

*“I think it was good, but, uh, it's not yet finished, ... one of the things that... becomes a problem with students, they don't research... They think they have to go to all these interesting sites with nice designs. You can look at nice designs all day, but it means nothing. You need to unpack and if you're looking at something to be able to analyse it and say, why, is this nice? Okay, why is it good? Why is communication good? Why is it relevant for what's happening right now? Why is it relevant to the target audience at this point? For instance, when students have to maybe extend the campaign to social media, I want to see how well they understand Instagram. ...I find that sometimes you almost need to force them to understand the platform that they're communicating with.... If you're communicating on Instagram, it's very ... different than communicating through a printed poster that's going to be printed and pinned up. ... I think it's just to encourage them. When they research, they need to unpack, what are they researching? What are they hoping to find out? What..., I mean, research is not about looking at the design it's about understanding different things ... How do you distribute your information? And how does it all work together to tell one story?”* (Lecturer B Interview 19<sup>th</sup> November 2020)

*“There are students who are getting it. What's happening is students will ...get the one part right... they'll come up with a good idea, but then when you see what their target audience is, it's not a good idea because...those things aren't connecting, so they have to rethink. (Or) they'll have a very good target audience, but then they're not communicating. They're not ... seeing how each part of the ideation and research process builds into the next part. ... I keep sending them back, to make sure they're following the steps properly...”* (Lecturer E Interview 19<sup>th</sup> November 2020)

Question 7: In comparison with all the previously submitted assignments, the lecturers were asked to rate students' ideas in terms of utilising the creative process and communicating effectively with the target audience in addressing the brief. The comparison was with the most recent brief submitted after the workshop. Their comments are tabulated below.

Table 4.22: Lecturers' opinions on students' application of the creative process (Author's own)

Lecturer	F	B	E
Comparison of the level of communicating effectively	Improved	Improved	Worsened

Question 8: The lecturers were asked to justify the reason for their responses on applying the creative process and communicating effectively with the target audience in comparison to all the previously submitted assignments:

*“... in terms of them collecting information and research, and looking at the target audience, they have a better understanding of it coz now they understood ... the assignment. The research parts got them to a point where it's like, no, you're not designing for yourself. You have to consider your audience. And especially (because) they were designing a workbook or schoolwork for another country. So, it was also a consideration like they can't use this, they need to be careful with ..., for instance, colour use. They had to be careful because a red in South Africa might not be accepted the same way in another country” (Lecturer F Interview 19<sup>th</sup> November 2020)*

*“...by the time we get to the third and fourth assignment, there should be improvement because they are going through a design process for the third or fourth time. ...it takes them like six months. That is why, ... in the second year, I always expect to see improvement after the end of the second project. (With) the first project they are still trying to get used to ... the concept. What is the idea and how to make the idea clear?” (Lecturer B Interview 19<sup>th</sup> November 2020)*

*“...this was the first project where they've had to consider a target audience.... this question doesn't apply too much because... the projects up until this one have focused mainly on technical requirements...” (Lecturer E Interview 19<sup>th</sup> November 2020)*

Question 9 asked the lecturers if they believed students knew the difference between plagiarism, influence, appropriation, and inspiration. The extracts below reveal their responses:

*“I don't know if they understand it in terms of differentiating the terms that way. But, in terms of my module and ... the way that I go about my lessons is that I structure it in a way that at some point they have to do research in which they collect (information) and just use it ... as inspiration.... such that the student ends up with their work” (Lecturer F)*

*“I think it's something that we need to reinforce... we also need to encourage students to consult because it's only when you are not consulting that we have a problem” (Lecturer B)*

*“...mostly yes, but like from a purely theoretical point. If you ask them, they will most likely know what the answers are. But, for the differences or when it comes to our practical approach, I think they work in a grey area and then that becomes problematic” (Lecturer E)*

Question 10: The lecturers were asked what they thought could be done to improve students' critical thinking and their understanding of the difference between plagiarism, influence, appropriation, and inspiration.

Lecturer F noted that a person will sometimes plagiarise because they don't know what to do, and students are under pressure. He/she felt that more process work and feedback would help students to avoid plagiarism. Lecturer B commented that design is not something that simply comes into one's head; it is something one builds, constructs, builds and builds again until it is perfect. Furthermore, design students need to be encouraged to make mistakes and learn from them. Lecturer E believed that getting students to understand and see the benefit of the design process might improve their understanding of the difference between plagiarism, influence, appropriation, and inspiration. This would bypass many instances of plagiarism. Another way of dealing with this is to fail students who plagiarise; while this could derail a student, they need to know the repercussions of plagiarism.

#### **4.4.3 Cycle 3 Analysis and interpretation**

The findings are derived from the participants' responses to the interview questions. All the interviews were conducted after the workshop although some of comments may create the impression that they occurred beforehand. This section interprets the interview data from the students and the lecturers, with the students' data interpreted first.

##### **1. Interpretation of Cycle 3 Student responses**

The fact that some students failed to accurately define influence and what they understood about it could be due to a language issue. As noted in chapter 2 (section 2.4.3.2, page 30), appropriation is a creative practice used in visual arts where elements are borrowed to create new work, especially to critique or satirise the original work or its purpose (Sahiner 2007: 1 cited in Economou 2011: 82). However, the students were confused about the definition of appropriation, describing it as ideas that should communicate effectively, doing something right, according to the law and coming up with appropriate ideas for design projects. Only two students, B and L, came close to an accurate definition. Student B stated that it involves stealing elements and using them for one's work, while Student L noted that appropriation occurs when one borrows certain elements from somewhere else.

While the students provided different definitions and understanding of inspiration, they demonstrated a rough understanding of this concept.

None of the students were able to clearly differentiate between plagiarism, influence, appropriation, and inspiration. At best, they defined these terms rather than differentiating them. Whether due to a language issue, a lack of instruction and reinforcement, or other reasons, the

findings suggest that the students did not know enough about these concepts and their relevance in order to understand how to apply them and how to use them to avoid plagiarism. Indeed, some did not appear to understand what it means to define something, in that they provided general comments rather than definitions. They might not have been taught the differences between the concepts, or have received only basic information.

On reviewing the ideas generated by the students in the workshop for the "Kreative Design Strategy" design brief (see Appendix B for the design brief), the researcher felt that the students were not sufficiently creative. The scale used to gauge students' creativity was based on the theoretical framework and the requirement that they communicate effectively with the target audience (see Appendix B). The scale measured the uniqueness of student ideas, while the criteria for measuring effective communication were the appropriateness of the context and feedback on the ideas generated as messages that connected with the intended audience. The target audience was individuals or companies looking for a digital advertising agency (See chapter 3 section 3.9.4, page 66). Based on the students' answers to the design brief and the definition of creativity discussed in the literature review (section 2.4.1, page 18, chapter 2), the ideas generated by the students fell short of this definition. None of the ideas they generated (tabulated in 4.23) communicated effectively; nor were they sufficiently creative. This judgement was cautiously applied because during a brainstorming session, it was established that ideas should not be judged. Some of the ideas were mere names and movies.

Table 4.23: Ideas generated by the second-year students during the second workshop (second-year graphic design students)

Student	Ideas generated
A	Opening the gate
B	SpaceX, Gumball, Ironman, Elon Musk, lightning, thunderstorm and explosions
E	Endless road
G	Tourist, popcorn and industry process
H	Lightning, thunder and sunshine
I	Board games, Weed, Toy story and puzzler and shooting
J	Food, flag, the brain, and notebook
K	Daydreaming and rockets
L	Multicolour and Narnia

No matter how captivating the visual signals are, if they do not communicate the intended message to the audience, the design fails in its purpose (Davis, 2012: 17). Based on the



students' low level of understanding of concepts and the simplistic nature of their ideas, it seems unlikely that they could develop these ideas into an effective design that could communicate a message. Considering what the ideas in table 4.23 were intended to communicate against the Emmert and Donaghy model of communication, it appears unlikely that they would reach the design agency's intended audience. They were not unusual combinations of old ideas and did not solve the problem (the brief) in a relevant manner (Davis 2012; Mumaw 2015 and Kelly 2019). No connection could be drawn between the design agency's needs and most of the ideas generated by the students. Concepts like opening the gate or the brain are overused and expose a lack of original ideas. The findings from table 4.23 are discussed in more detail later in this chapter.

In the one-on-one interviews, the students were asked how they developed ideas during the graphic facilitation workshop. They noted that they originated ideas in several different ways. Their ideas fed off one another, such that if one student noted an idea, the next student would come up with one feeding on and based on the first student's idea. Some ideas serendipitously popped into students' minds, and some simply pondered ideas in the workshop. As Mednick states, problems can be solved by three processes, namely serendipity, similarity or mediation (1962). In addition, new ideas may be inspired when other ideas act as stimuli, producing or serendipitously inspiring solutions, which partly explains the students' association process in generating the ideas for the design brief. These associative processes are highlighted in table 4.24 (Mednick 1962; Benedek and Neubauer 2013).

Table 4.24: Summary of how students came up with ideas in the workshop - second-year students' ideas. (Interviews 19<sup>th</sup> November 2020)

Associative process	How did you come up with those ideas?
Mediation	<i>"... I had a look at what everyone else is doing..., and you explained about the other groups saying, sleeping in the clouds or the heads in the clouds. And then ...I read the catchphrase, imagination and way beyond and I just thought... what imagination was and what way beyond words and I thought (of) going to a different place where my imagination determines what is around me. And I thought how do I unlock that, so I thought ... if I just open the gates to a new world" (Student A)</i>
Mediation	<i>"... came from what somebody else already said. So, I kind of built on what was said" (Student B)</i>

Similarity	<i>"I thought of the ideas because of what other people may have said influenced my thoughts" (Student C)</i>
Serendipity	<i>"...(I) connect the dots and sometimes you just brainstorm... a lot of ideas come to mind. So I feel like when things explode, it's like a lot of ideas ..."</i> (Student D)
Similarity	<i>"We're talking about the slogan... 'imagination and way beyond'. When you're imagining something..., it's like taking a trip, you are moving from what you were thinking... And way beyond, is like endless, like there's no limit. So that's why it's the endless road you arrive walking endlessly"</i> (Student E)
Serendipity	<i>"Something that just popped up... out of nowhere" (Student F)</i>
Serendipity	<i>"Ah! No it was something I was thinking" (Student G)</i>
Mediation	<i>"It was the let me think thing because you said that... and then let me think involves ideas" (Student H)</i>
Mediation	<i>"I was just letting out; I was not filtering whatever my mind had. I was just saying things as they were and trying to polish them after I've said it" (Student I)</i>
Serendipity	<i>"... just took it from my mind" (Student J)</i>
Serendipity	<i>"It was just random" (Student K)</i>

Given the way Student C got ideas, one might say that he/she was copying or plagiarising. This data highlights how difficult it can be to distinguish between copying and inspiration, and also where visual plagiarism might begin. From another perspective, one might not describe this as visual plagiarism, because the ideas are occurring so early in the process. No indication was found at this stage that students would continue to use others' ideas in developing the concept and execution, which suggests that visual plagiarism probably appears later in the process.

When students were asked what they had learnt from the workshop, they identified the following lessons:

1. Even the silliest ideas or random words in a brainstorming session can produce amazing results; there is no such thing as a bad idea, every idea counts.
2. Any idea can work: it all depends on one's approach.
3. One must connect the dots and brainstorm for oneself.
4. Do not rely on the Internet.
5. Every idea should be illustrated, even ideas that one thinks are not working, as it helps one get new ideas while brainstorming.

6. Avoid judging ideas too early in a brainstorming session, or forgetting that every idea has potential. Whether good or bad, they all influence one's development of ideas, helping one to develop the final idea.
7. Write down even the ideas which you feel are not good enough. Otherwise, you may completely forget those ideas, which could have developed into something great, rather than taking another direction and starting to explore again.
8. You must come up with original ideas and be able to communicate them with ease.
9. Work with any random ideas, because ideas do not have to be perfect at the beginning.
10. "... ideation should not be taken seriously ... it helps one to be creative and generate a lot of ideas." (Student L)
11. Learn to think freely. It is essential and helps one to come up with ideas.

The students added that they would not have experienced such a drastic shift in their ideas were it not for the graphic facilitation workshop. Student H (Interview 19<sup>th</sup> November 2020) noted that time, ideas, a notebook, and every single concept are all vital. This comment is important in that recording all ideas in a sketchbook is worthwhile, regardless of how much time this takes. It provides a complete record of every idea, which will not be forgotten. This helps the student to preserve ideas with potential and those without.

Graphic facilitation was seen as scamping and doodling, which most students found beneficial. Only two had different views; one felt that the scamps were inappropriate and a second noted that they were "...*not helpful*" (Students B and D). However, the majority of students considered that graphic facilitation helped them to visualise their ideas and make meaning out of them.

## **2. Interpretation of Cycle 3 Lecturers' responses**

This section interprets the graphic design lecturers' interview data, to place this data in context and better understand and improve students' current practice. Asked what they thought and had observed about students' understanding and whether they felt they could distinguish between plagiarism, influence, appropriation, and inspiration, the lecturers commented that students struggle to differentiate terms, especially when it comes to applying these differences (Lecturer C).

In terms of improving students' critical thinking, thereby enabling them to understand the difference between plagiarism, influence, appropriation, and inspiration, lecturers suggested the following:

Table 4.25: What could be done to improve students' critical thinking capabilities (Author's own)

Lecturer	Students should be
F	Taught time management Taught how to research Taught how to follow the creative process Taught how to communicate effectively with the target audience
B	Encouraged to experiment Taught how to answer the design brief
E	Taught how to follow the design process and its benefits Taught the consequences of plagiarism Taught the difference between a theme and a concept

Time management would give students ample time to research and tease out ideas early in their assignments, giving them enough time to refine them so that they would be able to answer the design brief. Secondly, research would enable them to propose worthwhile solutions. Thirdly, students need to be encouraged to experiment more when working on assignments, constructing and building until they are able to propose solutions. Experimentation will require more time, which will have to be supervised to ensure that students do not leave things to the last minute. They should be taught how to interrogate the brief, with the lecturer breaking it down step by step in layperson's terms. Guest lecturers such as industry professionals could also be invited to present how they interrogate briefs. A design brief tells the student that there is a design problem that needs to be solved. If he/she fails to recognise or understand the problem, he/she will solve the wrong problem; one that was not communicated by the design brief. In addition, students should be assisted to understand the design process and appreciate its benefits. Attending workshops, lecturers emphasising the design process, and allocating extra marks if students follow the design process would help to educate students on ideation, to develop ideas, and to avoid time pressure to submit and the temptation to plagiarise. Furthermore, students that plagiarise should fail the project and receive a formal warning, which would help them to understand the repercussions. This is supposed to be the case, but lecturers avoid enforcing the rules because they are criticised if the pass rate is too low. Lastly, students struggle to

understand the differences between a concept and a theme, highlighting the need for more tutorials and workshops on these matters (see section 4.5, page 138).

#### **a) Students' level of Innovation**

The lecturers were asked to evaluate students' design work and progress, and whether they applied what they had learnt from the graphic facilitation workshop. The lecturers rated students' work as below average in terms of innovativeness (creativity) in answering the design brief in their previous class assignment and the ideas the students had just submitted. This could be because the students did not follow a set creative process and this was prior to the graphic facilitation workshops. However, when lecturers were asked to rate students' creativity in answering the briefs in all previous assignments in comparison to the latest assignment they handed in after the workshop, there was marginal improvement. This was because the researcher showcased Petty's creative process and students now had an appreciation of a creative process they could refer to.

The three lecturers were unanimous in their view that the level of innovation had improved slightly in comparison to previous work. Thus, while their remarks on the current assignment suggested that the students' work was generally below average, there was some improvement. However, Lecturer A (Interview 13<sup>th</sup> December 2020) stated that he could not identify any innovation or originality in the current assignments in comparison with previous assignments. Lecturer C (Interview 12<sup>th</sup> January 2021) also commented that some students still did not appear to understand the process, in that they might submit incorrect work four times and receive feedback before a slight improvement is noted. Lecturer C commented that before and after the workshop, some students had not grasped the concept of producing innovative ideas, even after feedback from the lecturer. While the lecturers held different views, Lecturers' A and C's comments point to the need for more to be done to improve students' innovativeness and to consult regularly with their lecturers.

In comparing previous assignments against the current one, the lecturers considered three reasons why the level of innovation had improved. Firstly, according to Lecturer A, in the past, students required much motivation to feel that they could improve their innovativeness (creativity), thereby creating a conducive environment appropriate for creative thinking. The environment plays a major role in the ability to assimilate knowledge; hence, major improvement in students' innovativeness would require that lecturers continue to motivate them. Secondly, students were not applying previously taught skills; and thirdly, they did not

understand the reason for conducting research, and using mood boards and thumbnail sketches. This calls for lecturers to be more adamant that students should apply taught skills and for an emphasis on the reasons for conducting research, and using mood boards and thumbnail sketches.

Lecturer B agreed that students needed to be pushed and that, previously, they were not interested in learning. Lecturers A and B were critical of students' previous work habits, and felt that there had been mild improvement in some areas. Lecturer C (Interview 12<sup>th</sup> January 2021) stated that the students had improved because the briefs were considerably more demanding and intellectually rigorous. The students' level of competence had not changed (see interview excerpt below), but they managed to cope with the increased demands. Hence, when the current project was compared with previous ones, they had improved. Lecturer C's comment appears to be contradictory, but this was how it was presented in the interview. However, this contradiction needed to be probed. The "... conceptual development ..." and increased requirements mean that students must demonstrate improvement in creativity, originality, and relevance in generating, testing and refining ideas that interpret a message in engaging unique, and innovative ways to answer the brief.

If a student's work responds adequately to significantly more challenging and cognitively difficult briefs, while maintaining the same degree of skill, their work would have improved. While Lecturers A and B commented that the students' work had mildly improved, they also made negative comments that do not align with their opinion that there had been improvement. It could be that lecturers rely on their own taste in terms of visual aesthetics rather than the level of communication. Thus, the researcher needed to establish how the situation could be improved. These comments needed to be teased out, as they made before the workshops were conducted and before the work improved. The lecturers had to push students to generate ideas, and likewise, the researcher had to initially push them in the workshop, following which they became responsive. This suggests that students need to be motivated to show significant improvement in their work. Some lecturers might be unaware of this. Similar to those for Lecturer C, the briefs for Lecturers A and B may have been much more demanding and intellectually difficult, but the students' level of competence had not altered, resulting in the current assignment being below average and only a mild improvement on previous ones. This further highlights the value of Vygotsky's theory of the "Zone of Proximal Development" and the "knowledgeable other", which both the lecturers and the researcher applied in seeking to push students to cover the gap of proximal development.

Lastly, if the current work is still little more than average, the previous work must have been very poor; and if the current work shows only mild improvement, the workshop only had a negligible effect. However, any improvement is better than none; the students' perceptions and approach to assignments after the graphic facilitation workshop changed and improved.

#### **b) Students' level of application of the creative process in communication with the target audience**

The students' level of effective communication is not the same as their application of the creative process. They could faithfully follow the creative process, yet still not communicate effectively. However, in this study, the researcher combined the two requirements. The lecturers evaluated students' work by applying the two requirements to the most recent assignment as well as in various lectures. Students were rated as below average by one lecturer and average by the other two. In comparison to previous assignments, two lecturers observed that students' work had improved, while one noted that it was worse. Thus, only two lecturers' comments existed from which to draw conclusions, affecting their conclusiveness and validity.

Lecturers cited six reasons for students' work being average and below average when applying the creative process and communicating with the target audience in the current assignment. The work was evaluated when the lecturers were marking the assignments. The main concern was that students were still failing to connect with the target audience. Lecturer A indicated that students' group work improved, but individual work needed some improvement because students still need prompting. Lecturer B agreed that students needed much encouragement and added that they:

- I. Simply design artwork with no reason in mind
- II. Do not conduct research when working on assignments
- III. Do not use reference images
- IV. Cannot ask the right questions when answering a brief

Lecturer C (Interview 12<sup>th</sup> January 2021) rated the students' work as average on the grounds they had good ideas and simply needed to figure out how to convey their messages appropriately and effectively. If this is so, it is cause for concern because if their ideas or designs do not connect with the target audience, good ideas become meaningless.

If the graphic facilitation workshop was successful, improvement in the students' ideation and communication skills should have been apparent. The lecturers compared students' most recently submitted work with previous assignments and evaluated the work in terms of using the creative process and communicating effectively with the target audience in answering the brief. The lecturers agreed that there was some improvement, with some students picking up useful elements and following the creative process, but some were still not making an effort. Long-term reinforcement of the concepts and practices is required, with more consultation between students and lecturers. Students who routinely consult with their lecturers do better than those who do not. In addition, changes could be considered to the mark allocation, and scheduling and supervision of projects to enable students to gain confidence to experiment and make mistakes, while still meeting deadlines. Being afraid of making mistakes and wanting their work to always be perfect will impede students' progress. Experimenting, and making mistakes while combining different ideas leads to discovery and the emergence of creative ideas (Yu and Nickerson 2011: 2). Changes in mark allocations, scheduling and supervision will reinforce that even experimenting and making mistakes will be rewarded when generating ideas and learning from the whole process. Receiving better marks also promotes a change in attitude.

Lecturer C considered that the recent work was worse because although the students had good ideas, they did not communicate with the target audience. However, the lecturer's opinion was not tested by the target audience. This lecturer's latest brief focused on technical aspects whereas this research project focused on the creative process and communicating effectively; hence, the technical aspect is irrelevant to this study, and the comments regarding improvement following the workshop can be discounted.

#### **4.4.4 Cycle 3 Themes**

Following the data analysis procedure (section 3.12 page 69), the researcher identified three themes from the students' data and four from the lecturers' data with two subthemes. These themes and the associated codes are discussed in this section.



## 1. Students' themes and codes

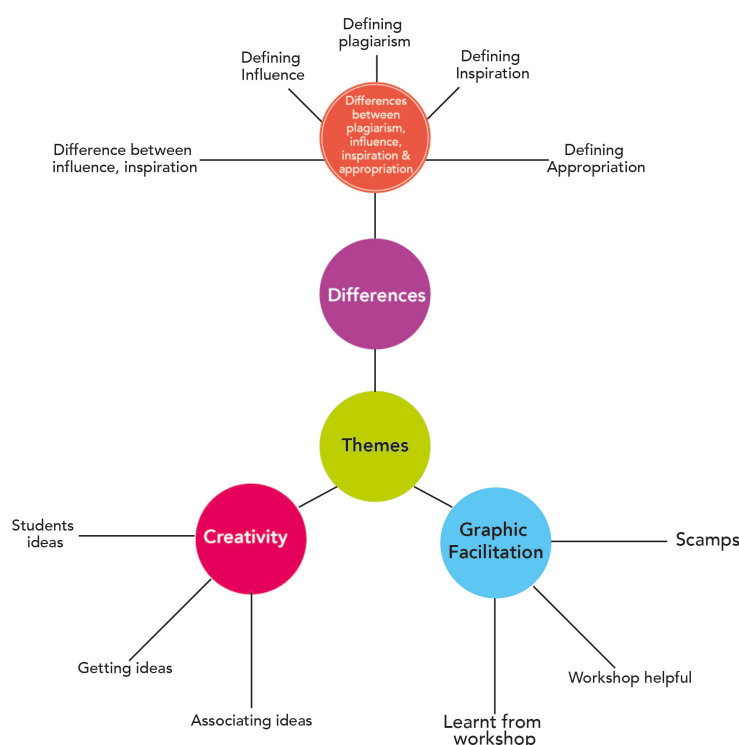


Figure 4.3: Cycle 3 Students' eleven categories and three themes (Author's own)

The researcher identified three themes from the students' interview data, namely, “**Differences, Creativity and Graphic facilitation.**” Firstly, the instances and codes that encompassed differences were grouped to include “Differentiating plagiarism, influence, inspiration and appropriation.” The theme “**Differences**” arose with students trying to differentiate plagiarism, influence, inspiration and appropriation. The four terms were broken down into subthemes where students defined each term on its own. Hence the theme was “differences” with the subtheme “Difference between plagiarism, influence, inspiration and appropriation” and five different codes, namely, defining the four individual terms and “*Difference between influence and inspiration*”. “**Creativity**” was identified as the second theme, grouping codes where creativity was mentioned or there was any association with creativity. Similar strings of text or instances were based on three codes, namely, student ideas, getting ideas and associating ideas. Thirdly the theme “**Graphic facilitation**” grouped three related codes, “*Scamps, Workshop helpful and Learnt from the workshops.*”

## 2. Lecturers' themes and codes

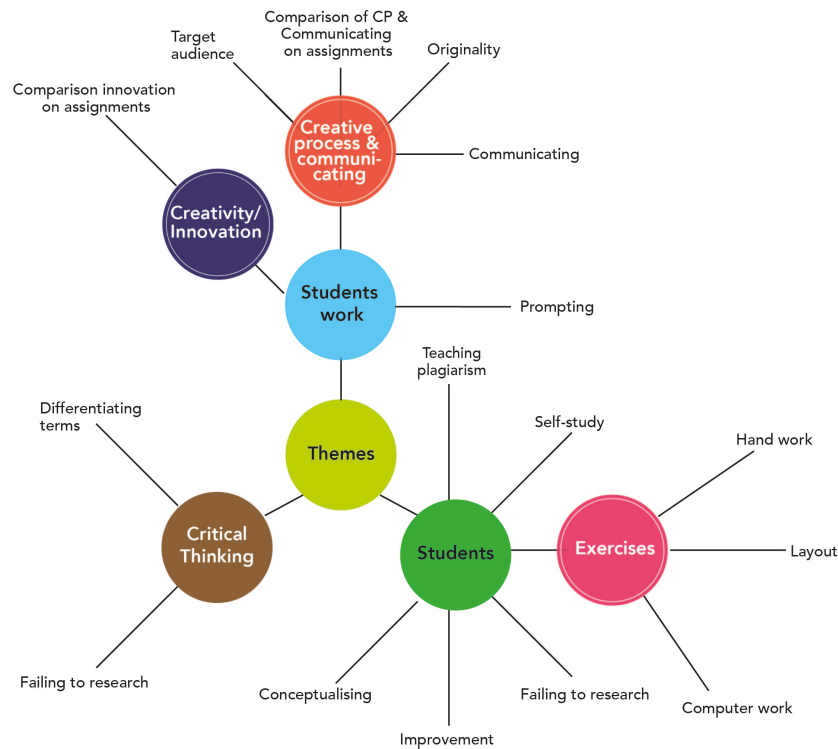


Figure 4.4: Cycle 3 Lecturers' sixteen categories and three themes (Author's own)

The lecturers' interview data had three themes, namely, “**Critical thinking, Students and students' work.**” Three sub-themes and sixteen categories of codes were generated (see figure 4.4). Firstly, the instances and codes that encompassed critical thinking were grouped to include failing to research and differentiating terms. The “**Critical thinking**” theme arose from student decisions on understanding, evaluation and application of graphic design terminology and concepts. Secondly, “**Students' work**” had two subthemes, namely: “Creativity, Creative process and Communicating.” The theme “**Students' work**” encompassed all aspects associated with the graphic design students' work, and was associated with one code, “*Promptings*”. The subtheme “Creativity” focused on the code that dealt with the “*Comparison of innovation levels between assignments*,” whereas the “Creative process and Communicating” subtheme encompassed four codes, namely, “*Target audience*, *Originality*, *comparison of the creative process* and *Communicating on assignments*.” The last theme was “**Students**”, with a sub-theme dealing with student “Exercises.” The “**Student**” theme had five codes, namely: “*Improvement*”, “*Self-study*”, “*Conceptualising*”, “*Teach plagiarism*” and “*Failing to research*”. The subtheme “Exercises” had three codes: “*Computer work*, *Layout*, and *Handwork*.” This subtheme dealt with students' previous assignments.

## 4.5 Discussion

This section discusses and links the three cycles and sets out the coherent narrative the researcher derived from all the primary research data. The data was gathered from lecturers' perceptions of students' work and not based on the researcher's perceptions or any objective criteria. These results indicate that students benefited from the graphic facilitation workshop by expanding their ideas and developing scamps to visualise ideas' potential.

In Cycle 1, the researcher observed the second- and third-year graphic design students working on their assignments during study time. Seven students worked haphazardly, while 11 followed an organic design approach that they enjoyed, but they did not display a rigorous brainstorming process as per any ideation or creative process. No student followed Petty's creative process, but they partially applied some of its phases. This approach was not effective. No flexibility was observed when students worked on their thumbnail sketches; this would have involved refining them and encountering some phases several times. As observation continued, the researcher continued to reflect on where visual plagiarism might be emanating from. Working haphazardly on assignments and not following a set creative process might have been the starting point for plagiarism, since some students skipped some of the phases, and one worked backwards, executing the process work after the design work.

Given the lack of a consistent creative process, in Cycle 2 a graphic facilitation workshop was used as an intervention to both understand more about how students fall prey to visual plagiarism and to help them to understand such plagiarism. The use of briefs similar to those they had already experienced reassured students that the new brief was within their "ZPD". In the workshop, the researcher played the role of the 'knowledgeable other' (See section 2.2.1.2, page 11). The design brief used for the workshop and what students learned confirmed that graphic design makes use of authentic learning activities, including CL, PjBL and PBL pedagogies (See Section 2.2.2, pages 12-13). The brief further aligned with Rodriguez's (2014) and Cherry's (2019) three essential factors that assist optimal learning, namely, knowledge of others, social interaction (the workshop), and supportive activities.

When students were asked what ideation is, and in what ways they thought it is important (section 4.3.2 1. a), page 88), they gave mixed responses (one was unable to communicate). The definition and importance of ideation are essential to students and are reflected in how they work on assignments. However, in comparing students' ideation processes during the first Cycle with the lecturers' comments in Cycle 2, it appeared that they only had a vague understanding

of the creative process and little understanding of ideation before the workshop, with improved understanding after it. This explains why students did not follow a pre-determined creative process. As is evident from the Cycle 2 lecturers' comments, they had a theoretical understanding of ideation and the creative process, but fell short in their application of these concepts. The lecturers' comments were made before they understood what the workshop had covered.

When it came to instruction in ideation, based on the lecturers' responses, it appeared that students had not received sufficient instruction in this area. Lecturer C was particularly concerned about this issue. However, students might forget what they were taught. Hence, repetition and reinforcement of learning would help them to remember or absorb newly acquired behaviour (Halleem *et al.* 2016: 2). The design brief and the workshop were applied to reinforce memory faculties. Asking students to illustrate on large sheets of paper would have helped them to remember the concepts and social interactions at a later stage, although this effect was not specifically investigated.

Of concern was Lecturer C's comment in Cycle 2 that it would be difficult to improve students' ideation in the second and third year because ideation is currently non-existent. Hence this study sought to assist students to understand the creative process, the concept of ideation, and visual plagiarism issues. More needs to be done to help students understand ideation, which in turn would help to reduce visual plagiarism. Plagiarism and ideation are linked, in that students resort to plagiarism because of pressure, laziness, poor time management, the influence of the Internet, and the difficulty of assignment topics (See page 32, Section 2.4.3.3). Consequently, they feel inadequate in meeting the demands of their course, particularly because without ideation, they struggle to develop good ideas. All these factors were evident in both the students' and lecturers' comments. As a result, students tend to seek an easy way out, so they can complete and submit assignments, pass and get the work over and done with.

The data from Cycle 2 further indicated that students understood the use of scamps, even though some of them skipped this stage when they were generating ideas in Cycle 1. It was not clear whether they were not interested in scamping, or whether they were avoiding it. If students were not scamping, the question arises as to whether they thought that ideas just land in their heads. This might be another reason for students to resort to visual plagiarism. Likewise, if they fail to conceptualise an idea for an assignment, they might become frustrated, and again succumb. In addition, copying or lifting work from the Internet is correlated with visual

plagiarism and the inability to develop ideas. However, the researcher noted that students did not understand plagiarism, and were confused about the differences between influence, inspiration, copying and visual plagiarism.

The Cycle 2 graphic facilitation workshop findings revealed that:

- i. Instruction in ideation and the creative process has not been sufficiently emphasised and reinforced for students to properly grasp and apply.
- ii. Some students do not know what visual plagiarism is. Those who do continue to use it because it is easy to plagiarise and they simply want to pass.
- iii. The lines between visual plagiarism, influence, inspiration, copying and visual plagiarism are very unclear and confusing to students.
- iv. Students do not follow the creative process and communicate effectively with the target audience because they learn these concepts late in their programme.
- v. Students appear not to be concerned about developing creative ideas; they resort to plagiarising because they simply want to submit work and pass.
- vi. Students use the Internet to collect images and ideas as an easy way out because they feel unable to come up with creative ideas.
- vii. Students' understanding of the use of mood boards was incomplete and inconsistent.

These findings suggest the need for further inquiry into the effectiveness of graphic facilitation for ideation, and students' understanding of the difference between visual plagiarism, influence, and inspiration. Although they benefited from the graphic facilitation workshop, it was not sufficiently effective to cause any change in students' work. The findings from Cycle 2 helped the researcher to refine and carry out Cycle 3, concentrating on Petty's creative process and visual plagiarism, to help the students to understand these concepts. In preparation for Cycle 3, another graphic facilitation workshop and two interview question guides were developed, refining the process to establish where the problems might lie and how to address them.

When the lecturers were asked in Cycle 3 what they thought and had observed of students' understanding of the differences between visual plagiarism, influence, appropriation, and inspiration, they were of the view that students would be able to differentiate these terms. However, the students failed to define and differentiate all the terms. This suggests that the lecturers misunderstood students' knowledge, and may have assumed that they were already familiar with certain concepts. Thus, when lecturing, they might start beyond the students' ZPDs. The resulting state of disequilibrium is uncomfortable for students who are unable to

adjust, lose interest and stop paying attention. This defeats the learning process and renders students prey to visual plagiarism. Furthermore, if students cannot define or understand graphic design theoretical concepts, their critical thinking capabilities will be affected, and it becomes hard for them to work on assignments and solve design problems.

The lecturers suggested that the marking rubrics and assignments need to specify ideation as a requirement, and that it should be emphasised from the first to final year. In addition, to enhance students' critical thinking, the lecturers suggested that they should be encouraged to experiment, taught how to answer the design brief, and taught the difference between a theme and a concept. Students also need to be encouraged to experiment more when working on assignments, constructing and building until they can propose solutions. This will increase their confidence and render them more open to trying out new ideas. Students should be taught how to interrogate the brief in order to identify and understand the problem, before considering how to solve it. A design brief tells the student there is a design problem that needs to be solved. Furthermore, in teaching students the difference between a theme and a concept, it should be emphasised that a concept is not necessarily what is shown, but more about the main idea that conveys the message to the audience. Lecturer C suggested that students should be helped to understand the design process and its benefits. This would educate them to learn ideation, and develop ideas, and thus avoid time pressures and the temptation to plagiarise.

According to the graphic design module descriptors, students should be able to perform "...design research...", conceptualise, visualise, and present original creative ideas to address design challenges while responding to a design brief (DUT 2021: 20). Conducting research, conceptualising, visualising, and presenting original creative ideas could help students to develop the critical thinking skills required to solve design problems. If a student lacks fundamental knowledge and understanding of the design principles necessary to solve a design challenge, their contact with the problem will be limited. Thus, critical thinking is vital. Students will be unable to address design challenges if they do not engage in critical thinking. They need critical thinking skills to grasp the creative process and be able to use fundamental terminology to develop a creative and imaginative mind.

In Cycle 3 students generated more ideas than in Cycle 2. The intervention of first presenting Petty's creative process appeared to be helpful. This was not done at the beginning of Cycle 2. Although the ideas generated by the students in Cycle 3 were not particularly imaginative (simply names and movies), the researcher considered this an improvement because they

learned a range of skills in the workshop and had more ideas. The students learnt 11 new concepts which were presented under the Cycle 3 student responses. Four main concepts stood out; students learned that they should not rely on the Internet, and that they should sketch every concept they think of, develop original ideas and be able to communicate them easily. These stood out because they were the focus of this research.

The lecturers were again asked to rate students' innovation and considered that their work had improved marginally. If students are taught, given reasons for, and apply skills like scamping, conducting research and creating a conducive environment for creative work, this would help them to improve their design work and grasp concepts they can apply to problem-solving.

When the lecturers evaluated students' work in applying the creative process and communicating effectively to the target audience in comparison to previous assignments, the results were mixed. Three lecturers were interviewed, but one had not set students an assignment with this component. The two lecturers whose assignments could provide data and results noted that their work had improved slightly. However, the results were insufficient to reach a confident conclusion. Thus, the findings on student innovation are unclear.

A small improvement is nonetheless an improvement. If there had been no improvement, the lecturers would have said so, or would have noted that the students had regressed. However, given that no firm conclusion could be drawn, this exercise would need to be repeated two or three times during a less chaotic period before it could be definitively confirmed whether or not the intervention was successful. However, a change in attitude and perspective on visual plagiarism, ideation, and the creative process was noted. Based on the above, the workshop was beneficial in helping students to a certain degree, because some improvement was seen in their work, and changes were noted in their attitude and perspective on visual plagiarism, ideation, and the creative process.

In summary, the signs of improvement were encouraging, but they were not strong enough in these circumstances to produce a firm result. Therefore, any further intervention should be conducted under more settled circumstances. Data was gathered from five and three lecturers for Cycles 2 and 3, respectively, a very small sample, and lecturers may have struggled to detect and communicate improvement. There was also a risk of possible bias in

lecturers' opinions on the particular group of students, and a risk of negative moods during the interviews, which might have affected their responses. Because of the small samples, such issues might have skewed the results. In hindsight, a more extensive and rigorous method of measuring improvement should be identified.

#### **4.6 Research questions**

This study investigated the applicability of graphic facilitation for ideation in graphic design in tertiary institutions in South Africa. It aimed to answer the following research questions:

1. What is the applicability of graphic facilitation in a tertiary graphic design setting?
2. What ideation processes are currently employed by the participants?
3. To what extent are students interested in developing creative new ideas, and aware of how important such ideas are?
4. What are the benefits of adopting graphic facilitation?
5. How can plagiarism be investigated in the ideation process through the use of graphic facilitation?

The study revealed the scope of the problem, not just in terms of visual plagiarism, but also in terms of the attitudes that led to it, in that students lacked self-confidence and self-respect to strive to produce their ideas. Based on the findings revealed in the three cycles above, a cross cycle analysis is conducted in this section to answer the research questions.

##### **4.6.1 What is the applicability of graphic facilitation in a tertiary graphic design setting?**

The researcher conducted a literature review to establish where and how graphic facilitation has been applied and how it can be adapted to graphic design education in a tertiary context. The literature revealed that graphic facilitation has been applied in three different contexts for a total of 20 different purposes (section 2.6, table 2.4, page 39). Ten workflows to conduct a graphic facilitation workshop were identified (section 2.6.3, table 2.6, page 42) and these were synthesised to come up with a nine-phase workflow for the workshops (section 3.8, page 60).

In Cycles 2 and 3, the nine-phase graphic facilitation workflow was used for the workshops with the students. It assisted in instructing students, broadening their modes of thinking, helping them to think freely and creatively, improving their visual thinking, and recording and mapping their ideas (section 4.3.2.1a, page 92; section 4.4.2.1a, page 118 student responses from Cycles 2 and 3). The students generated a range of ideas in the 60-minute workshop. The researcher found that they cross-fertilised one another's ideas so that while ideas were illustrated in front



of the group, further ideas would spontaneously sprout or pop up in other students' minds. This helped to ignite creative thinking and assisted the students to generate new ideas. As per Mednick (1962: 220), students brought together related components in new and different ways which generated a unique combination of ideas to answer the specified requirements of the design brief.

In a tertiary graphic design setting, students need to be creative and generate creative ideas, for which graphic facilitation can be adapted. Graphic facilitation was used in the workshops with the students for both Cycles 2 and 3, to help answer a design brief for a fictional advertising agency (see Appendix B). Illustration and brainstorming are common in graphic design, and graphic facilitation was mainly used in the workshops to show and capture participants' contributions using sketches and drawings (see Appendix G). Brainstorming is an important part of every design project, and the workshops demonstrated that graphic facilitation can help students to come up with ideas during this phase. They can also create visual summaries of the ideas generated during brainstorming sessions when working in groups or alone.

In addition, although graphic facilitation is a different type of process, it can be integrated with Petty's creative process and Kleon's (2012: 38) mix and matching, good theft vs bad theft (section 2.4.3.2, pages 30-32) which will assist students to generate new combinations and produce creative ideas. Using mixing and matching, good theft, teasing out, and playing around with ideas will help students to use mood boards and references as sources of inspiration in studying ideas, remixing and transforming ideas so that they will not fall prey to visual plagiarism. Hence, graphic facilitation will assist students to learn how to utilise mood boards, and thumbnail sketches, avoid visual plagiarism and generate creative ideas. If followed correctly, this will reduce visual plagiarism in students' work and the design department.

Graphic facilitation can be applied as part of the creative process (see figure 4.5). It fits with Petty's (1997) creative process in generating ideas during the inspiration phase, but it can also be used to help clarify the brief, thereby promoting distillation to decide which idea to focus on, and to refine ideas. It covers the inspiration, clarification and distillation phases, all of which take place during graphic facilitation, although they may not occur in that sequence. Students might have clarified an idea, focusing on the requirements of the brief, but in the distillation phase when they decide which idea to focus on, they realise that the idea does not work. They then go back to the inspiration phase and work on another idea to solve the problem. This time

they might skip the clarification phase because they now know how to focus on solving the problem of answering the brief.



Figure 4.5: Graphic facilitation aligned with Petty's creative process (Author's own)

#### 4.6.2 What ideation processes are currently employed by the participants?

In Cycle 1 the researcher observed students working on assignments and identified their current ideation processes. Some started with mind maps, while others dived straight in, starting to sketch and working haphazardly. Many students do not go through a premeditated ideation process, but follow an organic creative process. One was observed working backwards, executing the final design to submit and covering up by doing the process work afterwards (section 4.2, see page 79). This was a shortcut; the student avoided following the phases of the creative process and learning from it, which would have helped with creative ideas. Other students do research but skip the clarification, incubation, and evaluation phases (see figure 4:6). Figure 4.6 focuses on the three versions of the ideation process followed by the students, including working backwards and/or skipping some phases in comparison to the traditional model.



Figure 4.6: Current ideation processes followed by students (Author's own)

These observations support the lecturers' claims that students seem to be only working to pass, and are not interested in actual learning. Plagiarism could be prevented if graphic facilitation

was adopted and lecturers set interim deadlines for each required stage (e.g., concepts, scamps, rough, computer draft version, finished version, revised and corrected version; or similar). Students would have to submit stage one and have it signed off by the relevant lecturer before stage two would be accepted. In such an arrangement the traditional model or Petty's creative process could be combined with graphic facilitation, as discussed in the applicability of graphic facilitation in a tertiary graphic design setting (see figure 4.5).

In Cycle 2, the lecturing staff commented that some students skip the creative process phases because all they want to do is submit work, get 50%, and pass, without spending time learning the key design principles and doing the work properly. Fowler *et al.* (2007: 105) and Dawson (2004) agree that students have a fear of failure, may suffer from laziness, might find their assignments difficult, and are under pressure to meet deadlines; hence, they resort to plagiarism (see section 2.4.3.3, page 35)

In Cycle 3 students generated several design ideas, which suggested that their ideation process was improving. The researcher had emphasised Petty's creative process and its advantages; the finding indicates that students took heed of the researcher's comments during the workshop, and understood the process.

#### **4.6.3 To what extent are students interested in developing creative new ideas, and aware of how important such ideas are?**

As noted above, in Cycle 1, an organic intuitive and haphazard working process was observed. Knudsen, Zama (personal interviews, 1 June 2019) and Lecturer B (Interview 08th October 2020) were of the view that many students focus only on submitting work in order to meet the deadline and pass the course, without reflection, ideation or the ambition to produce excellent, creative and innovative work. These attitudes indicate that students only had a vague understanding of ideation and the creative process. However, even if students have such attitudes, this does not necessarily mean that they don't understand the process. Furthermore, the attitudes suggest a lack of understanding of the importance of creative ideas and processes in the graphic design industry, which lecturers are trying to inculcate in students. When they enter the design industry, such understanding will help students to become better and more creative designers.

Twelve second-year and six third-year students participated in the Cycle 2 graphic facilitation workshop that elicited their perspectives on ideation. Firstly, students appeared to assume that ideas would appear spontaneously and fully formed in their minds without reference, preparation, or development. Lecturers added that before the researcher's workshop they sought to assist students to understand ideation and the creative process by emphasising it rigorously in classes. Secondly, the students appeared to have little understanding of the use of scamps for ideation. Scamping helps to explore ideas while researching and generating ideas, but the students did not research or follow the idea through to the end of the creative process. This led to misconceptions and the students failed to produce original, creative work that communicates effectively with the audience. The graphic facilitation workshops made them aware of:

- how to come up with ideas;
- the benefits of the creative process;
- the benefits of ideation;
- how to develop and refine creative ideas.

Again, when lecturers reviewed the work students submitted after the workshop, they noted that some were still plagiarising. By that stage, the researcher had hoped that students would have absorbed and applied better practice and some understanding of the processes. Further analysis revealed that students were not receiving sufficient instruction or reinforcement in ideation and the creative process. During the project period, lecturers were midway through introducing a new curriculum for the Bachelor's degree in Visual Communication Design; thus, third-year students were following the old National Diploma in Graphic Design curriculum, while second-year students were following the new degree curriculum. The lecturers appeared to make assumptions about which colleague was teaching what content and at what level, and hence assumed that students were familiar with or had been taught the creative process. The lecturers might have also have been confused about the details of their new courses from the module outlines and syllabi. Furthermore, students might have forgotten what they were taught about ideation if they only received one lecture on it in first year, which was not followed up. Similarly, when students are given design assignments, the assignments should be within their ZPD because if the assignment is too far outside, they may lack motivation and seek an easy way out, resulting in visual plagiarism.

In Cycle 3, student attitudes towards generating ideas were compared to previous design assignments. The lecturers' opinions on improvement were mixed, rendering them inconclusive. However, they found that students' level of innovation had marginally improved. Before the workshops, students did not appear to be well-versed in producing creative ideas, or aware of the potential or importance of creative ideas. They seemed unaware of the advantages of the creative process, which include improving creative problem-solving skills, coming up with innovative and original ideas, and being less prone to visual plagiarism (section 2.4.1.1 page 29; section 4.2, page 79; section 4.3.2, page 86; section 4.4.2, page 112). The students' comments suggested that the workshops helped them to grasp 11 lessons (page 127), including:

- In a brainstorming session, even the craziest ideas or random phrases may yield spectacular outcomes; there is no such thing as a poor idea; every thought matters.
- Any concept can work; it all depends on how one approaches the problem.
- Do not rely solely on the Internet to generate ideas.
- Every idea should be sketched, and evaluated for potential.
- Ideas should not be judged during the brainstorming session.
- Thumbnail sketches keep a record of ideas for later reference and refinement.
- The ability to generate unique ideas and present them effectively is essential.
- Initially, random ideas can be developed, because ideas do not have to be perfect at the beginning.
- Ideation should be approached in a playful and jovial manner to aid creativity and the development of multiple ideas.
- The ability to think freely is also vital for the cultivation of new ideas.

The workshops helped students to understand some of these lessons. The level of plagiarism declined after the workshop in Cycle 3. The workshops helped students to understand the importance of generating creative ideas in that they:

- enabled alternative ways of thinking
- helped students to think freely
- helped them become less prone to plagiarism
- helped them not to rely on the Internet
- encouraged them to follow a predetermined creative process
- help their attitudes to change and them to become interested in developing ideas, rather than doing assignments to pass.

Hence, the researcher can confirm that as a result of the graphic facilitation workshop, students' attitudes improved to some degree. As highlighted above (section 2.2.2, page 13), no design education is perfect, and it relies heavily on the student's engagement and drive (Labudovic and Vukusic 2009: 53). Had the researcher not conducted the workshops, students' attitudes would have remained the same with a vague understanding of design concepts. As noted previously (section 2.2.2, page 14), design education historically focused on the outcome of students' solutions rather than on the processes of creativity and originating ideas (de la Harpe 2006: 2). This project focused on the process, with the researcher as the 'knowledgeable other'. The results affirm that if lecturers focus on the creative process, students' attitudes and work would improve. Thus if, as noted by de la Harpe (2006: 2), the focus on execution was changed to a focus on the creative process, it would be beneficial to design education.

#### **4.6.4 What are the benefits of adopting graphic facilitation?**

The literature review highlighted that graphic facilitation helps everyone in a workshop in ten different ways<sup>3</sup>:

- I. It helps engage everyone in the workshop;
- II. It helps ideas come to life in front of the workshop participants;
- III. Individuals co-create visuals together;
- IV. It helps every participant feel valued;
- V. Graphic facilitation helps bring information closer to students;
- VI. It helps individuals to retain and use shared information;
- VII. It presents ideas in relation to other ideas;
- VIII. It keeps a record of work from the workshop;
- IX. It enhances understanding and helps to develop and explain interrelationships;
- X. It helps participants to see a graphical representation of their ideas so that they do not have to imagine their ideas.

In Cycle 2 the students noted they had learnt three things from the graphic facilitation workshop (section 4.3.1 a, page 101). Firstly, every idea and every part of the process of answering the assignment is important. Secondly, students realised that ideation is very easy, and they can ideate many ideas in a limited period of time. Lastly, one student noted that one can come up with ideas for a campaign all at once rather than going back to start afresh, which students were

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<sup>3</sup> Ngcoya 2019; Koberidze & Tsereteli 2019; Muller *et al.* 1993; Valenza & Adkins 2009; Ball 1999; Mendonca 2016; Bailey 2011; Sibbet 2001; ILT Brief 2 2011: 5.

doing before the workshop. Although some of the students' opinions differed from their current practice, the fact that they acknowledged a mind shift is a step closer to change (Falconer 2011).

In Cycle 3, students recognised seven further benefits of adopting graphic facilitation. They shared new understandings and commented that they would not have undergone this dramatic shift in opinions had it not been for the graphic facilitation workshop. Graphic facilitation assisted the students to:

- I. Understand that even apparently unintelligent ideas can inspire mind-blowing solutions.
- II. Know that there are no poor ideas, and all ideas have potential, hinging on an individual approach in association and connection.
- III. Realise that they should not depend on the Internet for ideas but should generate them for themselves.
- IV. Understand that they should not take any ideas for granted.
- V. Realise that every idea one generates, and thinks is working should be illustrated, even roughly, which can help one generate further new ideas.
- VI. Realise why they struggle to ideate, and that they judge their ideas too early while they are still brainstorming, forgetting that ideas have potential.
- VII. Grasp that unless they note down their ideas, they end up forgetting ideas which they could have developed into amazing concepts.

Thus, the three cycles revealed the numerous benefits of design students adopting graphic facilitation.

#### **4.6.5 How can plagiarism be investigated in the ideation process through the use of graphic facilitation?**

Plagiarism was probed in the three action cycles in the ideation process through graphic facilitation. In Cycle 1, the researcher found that some second- and third-year students follow an organic intuitive process and then execute their work, thus skipping clarification, incubation and evaluation in the creative process. Cycle 2 elaborated on this phenomenon, revealing nine factors that influenced both second- and third-year students to plagiarise.

These are:

- students fail to use mood boards.
- they may be tempted to access and copy work on the Internet.
- they might not be receiving sufficient tuition in ideation.

- they have no previous computer or software experience and fear falling behind.
- they see renowned designers getting away with plagiarism and think it must be acceptable.
- some students know it is wrong, ignore the fact and continue to plagiarise.
- some are frustrated that they fail to produce creative original work.
- they fail to follow the creative process.
- it can be hard for students to determine whether or not the use of another's work is plagiarism.

Cycle 3 revealed that students have misconceptions of graphic design theoretical concepts. Their misunderstanding of terminology and theoretical concepts was revealed by their responses in Cycle 2. Amongst other terms, second-year students struggled to define and distinguish between appropriation, influence, visual plagiarism and inspiration. If they were able to distinguish and define all these terms and concepts, they would be able to apply them, thereby enhancing their critical thinking capabilities, which in turn should improve their work. Critical thinking helps students to understand what they have learnt and solve design problems; it is thus a crucial component in improving as a designer (Bradely 2013). This finding highlights that graphic design students need to understand these concepts much more thoroughly than currently and that action needs to be taken to ensure that they gain further understanding. The fact that the students were able to grasp some of the design terminology and theoretical concepts shows that these concepts were within their ZPD, which further suggests that lecturers may not be challenging students enough with work within their ZPD so as to address their disequilibrium.

This section answered the research question based on the findings from observation of students while they were working on assignments, and the use of graphic facilitation to investigate how student plagiarism could be minimised. It demonstrated that students benefited from graphic facilitation that assisted them to be less prone to visual plagiarism and better able to generate creative ideas for their assignments. It further noted how the ZPD might be affecting students' learning if the gap between existing and new knowledge is too wide, encouraging plagiarism as an easy way out. It also highlighted that before the workshops, students were not sufficiently concerned about generating creative ideas, and it was only after them that they grasped its importance.



## 4.7 Summary

Table 4.26: Summary of the study (Author's own)

	<b>Problem</b>	<b>Intervention / Action / Plan</b>	<b>Findings</b>
<b>Cycle 1</b>	Students have visual plagiarism issues	Observation of students' creative process	Students work haphazardly
<b>Cycle 2</b>	Students work haphazardly and do not follow a predetermined creative process	Graphic facilitation workshop with an emphasis on Petty's creative process	Students might not have been taught/ are forgetting, misinterpreting graphic design theoretical concepts and terminology
<b>Cycle 3</b>	A vague understanding of ideation and misconception of graphic design theoretical concepts and terminology	Iteration of the graphic facilitation workshop and emphasis on graphic design theoretical concepts and terminology	*Students managed to come up with ideas and understand Petty's creative process

In summary, this chapter discussed the findings from both the workshops and interviews in all three action research cycles. The research objectives and themes were presented and linked to answer the research questions, although some results were inconclusive. These links and the cycles revealed that students might not seem concerned about ideation and creating new ideas because they only have a vague understanding of the creative process. In the first cycle prior to the workshops, it appeared that students were not concerned about ideation or visual plagiarism, especially as some worked backwards, executing the final design first, followed by the process work. Most students followed some form of the creative process, but not all did so consistently. It was thus concluded that students work haphazardly and skip phases of the creative process, following an organic intuitive process, which does not align with the traditional model, Petty's (1997) model or any creative process from the literature. Students' current practice from Cycle 1 helped the researcher to develop the intervention carried out in Cycle 2. This took the form of a graphic facilitation workshop in which students worked on a design brief to conceptualise a revealer, advert and logo. This brief aimed to assist students with ideation using ideograms to reinforce Petty's creative process. Data was gathered based on a pretested interview question guide for both the students and lecturers. Students were interviewed immediately after both workshops. Lecturers were also interviewed after both workshops, but after the second workshop (Cycle 3) the interviews took place after students had submitted further design work.

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\* The results on student improvement were inconclusive due to the lecturers' different opinions.

Cycle 2, which focused on the students' processes, and ways in which their practice could be improved, revealed that students' lack of comprehension of the English language might affect their understanding, but this was not investigated further. Cycle 2 further revealed that students only had a vague understanding of the creative process and little understanding of ideation before the workshop and a better understanding afterwards. Further inquiry with the lecturers indicated that only some lecturers had taught students about ideation and the creative process. Some erroneously assumed that their colleagues had done so.

The lecturers believed that students struggled to communicate effectively through their projects because they neglected to simplify the message of their ideas in ways that conveyed the information more easily to the target audience. Consequently, lecturers suggested that students need more help to grasp this concept.

The lecturers also expressed the view that students submit assignments simply to pass and are not bothered about visual plagiarism. Their opinions on students' innovation in assignments varied, and they noted that this might be linked to plagiarism. Some students did not know how to use mood boards or have the skills to do so, highlighting another potential cause of plagiarism. The use of the Internet contributed to plagiarism because some students demonstrated a limited understanding of the concept. Nevertheless, students learnt several lessons from the workshop, including how to generate several ideas in a limited timeframe, not to judge ideas too early in the ideation process and to let their minds wander during ideas generation.

Cycle 3's interview question guide was based on the findings from Cycle 2 and the guide was thus amended for the second graphic design workshop to emphasise ideation, the creative process, the use of mood boards and visual plagiarism, thus making it appropriate for this cycle. However, the design brief and Petty's creative process ideograms from Cycle 2 were used. Students were interviewed after the workshop, with the lecturers interviewed after the students had submitted a new assignment.

The workshops demonstrated the benefits of the creative process and ideation to the students. Cycles 2 and 3 revealed the common findings that students misunderstand graphic design theoretical concepts, terminology and the use of the Internet, all of which suggested reasons why they might resort to visual plagiarism. They were unable to differentiate between influence, appropriation, visual plagiarism and inspiration, which suggested that they were not engaging in critical thinking to grasp these concepts and develop a creative mind.

In the workshop for Cycle 3, students managed to generate ideas, but they were not sufficiently creative, as they did not communicate effectively and were not unusual combinations of old ideas. They were merely words, phrases, or movie names. Although not sufficiently creative, these ideas were generated by students feeding off one another in the workshop. Some sprang serendipitously into their minds, while some students were merely thinking about these ideas. The Cycle 3 workshop was beneficial because the students learnt a variety of things, especially not to rely on the Internet; and that they need to come up with creative ideas that convey the message with ease, and to scamp every idea that comes to mind. The lecturers considered that students' levels of innovation had improved slightly, although some of the comments were very critical. Compared with earlier projects, the lecturers' views on students' use of the creative process and effective communication were ambiguous due to their varied viewpoints, although the students' work was considered to have improved somewhat. Furthermore, the data was gathered from a small sample, and the lecturers' bias might have affected their opinions about students' work, thus adding to the inconclusive nature of Cycle 3. The signs of improvement were encouraging, but they were not strong enough in these circumstances to produce firm results.

The research questions were thus answered by the findings, noting that either students are not receiving sufficient tuition, or that retention of information might be the main concern. Students that do not follow the creative process are more likely to plagiarise; thus it might seem that they are not concerned with following the creative process. When students see distinguished designers getting away with visual plagiarism, they think it is acceptable and follow suit. The differences between these concepts are unclear to students in understanding how to use references or inspiration.

The following chapter presents an overall summary and the study's conclusions, and offers recommendations and suggestions for future research.

# Chapter 5

## Summary, Recommendations and Conclusions

### 5.1 Introduction

The researcher had a keen interest in helping students to implement the process of ideation using graphic facilitation. This chapter discusses and concludes this research by answering the research questions. The study investigated the applicability of graphic facilitation in developing ideation skills among graphic design students at a university in South Africa. It aimed to draw insights that could help educators to develop students' ideation skills and to recommend a more successful pedagogical technique that could be used to assist graphic design students to use the ideation process to reduce cases of visual plagiarism, improve their creative process and develop a better understanding of graphic design terminology and theoretical concepts.

### 5.2 Overview of the study

Chapter 1 addressed the background of the research. The research problem arose from the graphic design lecturing staff at DUT who complained of rampant visual plagiarism among design students that negatively affected students' design work and marks. The first chapter introduced the study's objectives which were achieved as follows:

- i. **To examine and critique the current ideation processes employed by the participants.** This was achieved by observing the students in their study periods. It was found that students followed some form of process, but it was haphazard and inconsistent. Students rushed to execute the final work on a computer rather than following every phase of the creative process.
- ii. **To explore the current use of graphic facilitation.** A literature search was conducted, and the researcher found that graphic facilitation was generally employed in the field of business (see page 38 section 2.6). No reference was found to the application of graphic facilitation to graphic design.
- iii. **To examine how important ideation (developing creative new ideas) is to second-year graphic design students.** The study found that students were less interested in developing creative ideas, and more interested in submitting assignments to meet deadlines; this changed by the end of the study (see section 4.6.3, page 144). It was further discovered that students had either forgotten what they were taught or did not receive sufficient training and reinforcement on ideation.

- iv. **To test the effectiveness of graphic facilitation in the ideation process with second- and third-year graphic design students.** The data from the interviews illustrated that graphic facilitation can be applied to the ideation process. As noted on page 104, section 4.3.3.2, not only the phases of ideation but the workshop activity itself needs to be repeated and reinforced to be fully effective. Such activities could be incorporated into every project at an early stage. Graphic facilitation was tested and found to apply to ideation to the extent that it assisted students to understand the importance of ideation and the creative process.
- v. **To probe plagiarism in the ideation process through the use of graphic facilitation.** Students appeared to have a basic understanding of plagiarism but failed to apply this knowledge and avoid it. The investigation on the role of plagiarism in the ideation process highlighted students' lack of critical thinking, their inability to articulate the differences between plagiarism, inspiration, appropriation, and influence; and their misunderstanding of graphic design terminology and theoretical concepts. The research also revealed that students who fail to generate ideas plagiarise by taking ideas from the Internet. Further research is required to identify solutions to these problems (See below section 5:6).

The literature review in chapter 2 exposed the gap in the literature regarding the use of graphic facilitation in graphic design education. The chapter presented a brief overview of learning theories highlighting the constructivist theory (cognitive and social constructivism). It then focused on social constructivism as per Vygotsky, highlighting the benefits of the ZPD, disequilibrium and how these concepts apply to learning graphic design. The discussion on the various ways in which students learn graphic design demonstrated how knowledge is assimilated, based on learning by doing (trial-and-error learning, discovery), collaborative learning (CL), authentic learning activities, project-based learning (PjBL) and problem-based learning (PBL). Schunk (2012) argued that Vygotsky's constructivism does not account for remembering and forgetting, i.e., whether students remember or forget what they have learned. Memory may thus go unaccounted for in studying education unless special care is taken. The chapter further highlighted that plagiarism is a corruption of the educational process, a short cut to escape the student's disequilibrium.

Communication theory and models of communication (Shannon and Weaver, Emmert and Donaghy) were also examined in chapter 2. Davis (2012: 17), Morgan and Welton (1989), and Baldwin and Roberts (2006:22) argued that Shannon and Weaver's model is a deceptive

depiction of the reality and complexity of human communication and is insufficient to describe communicative art forms, particularly graphic design. Due to its linear, unidirectional makeup, its application is limited. Indeed, it was developed for telecommunication rather than interpersonal human communication or graphic design; hence it was disregarded.

The Emmert and Donaghy model was found to be the most suitable to describe human communication and most appropriate for graphic design because it considers “context, feedback and the composition and behaviour of communicators” (Davis 2012: 17). It also highlights that, regardless of how fascinating a design is, if it does not demonstrably communicate the desired message to the minds of the audience, it will fail.

The literature review drew on a combination of concepts from Mithen (1998: 22), Mumaw (2015) and Kelly (2019) to define creativity as the ability to go beyond the limits of existing thinking, using unusual combinations of old ideas, to solve problems. The concepts and myths of creativity focusing on novelty and going beyond the limits were discussed based on the models of creativity. A range of theoretical constructions of creativity by many scholars was reviewed (section 2.4.1.1, page 19 – 24). In terms of practical creative processes, Petty’s model (1997: 15) was considered the most suitable for graphic design in comparison with the other models. It is very flexible, each phase of the model has tools and mindsets, and it takes into account personal motivation (intrinsic and extrinsic towards work, which is not considered by the other models (de la Harpe 2006: 156). Generation of creative new ideas is an essential skill in the design industry; however, design curricula in universities tend to neglect this and focus on the final execution of ideas. Furthermore, Tschimmel (2004: 4) and de la Harpe, (2006: 122) emphasise that creativity and thinking skills that are currently neglected, should be prioritised in design education.

Originality, which refers to the ability to be independent, think creatively and use one’s imagination constructively, was also discussed. Many scholars argue that originality does not exist and that inspiration fuels one’s imagination, thereby stimulating ideas.

Plagiarism (textual and visual plagiarism) was discussed, along with the types of plagiarism (mosaic, accidental, and acceptable plagiarism), and the reasons why students plagiarise (see section 2.4.3, page 27 – 34). The most common reason is that students want to complete their assignments as quickly and effortlessly as possible.

Theories of creativity were examined, some of which have been heavily criticised (see section 2.5, page 35). Mednick's associative theory of creativity, which explains how creative ideas are generated and why creative people tend to habitually channel creative ideas, was employed as a theoretical lens. According to Mednick, creative people have a greater ability to access mutually remote associative elements (visual or conceptual) that can be merged to produce innovative solutions (see section 2.5.1, page 36). The associative theory of creativity asserts that serendipity, similarity, or mediation assist in accessing mutually remote associative elements, thereby generating creative solutions (Mednick 1962: 220). The researcher argues that the associative process is vital to advertising creativity and any creative endeavour, as the most effective way to solve problems, and that these abilities are required of graphic design students (Reid and Rotfeld 1976: 25; Cropley 2000: 8; Oaps 2008; Benedek and Neubauer 2013; Erdurak 2002: iii).

The final part of chapter 2 addressed current use of graphic facilitation. From time immemorial humans used rock paintings and hieroglyphics to communicate with one another. In modern times, graphic facilitation is used as a conceptual methodology for brainstorming, conflict resolution in companies, generating ideas and solving problems. Graphic facilitation, which is akin to sketch-noting (Bell 2015: 12; Mendonca 2016: 129) has the potential to assist graphic design students to generate ideas (ideation) for visual communication (see section 2.6, page 40).

The research was grounded in an action research methodology within an interpretive paradigm that integrated qualitative approaches (see chapter 3) The methodology chapter described the research design, consisting of three cycles of action research. It also motivated for the use of action research by demonstrating how this approach served as a bridge and was appropriate to answer the research question based on the three action research cycles (see section 3.4, page 51).

The research samples consisted of two groups of participants, namely graphic design students and lecturers. In cycle 1, students were observed working on assignments during their study time in order to measure their existing knowledge, meaning, and understanding of the importance of ideation and visual plagiarism. It was observed that they worked erratically and inconsistently, without following any set of creative or ideation processes.

In preparation for cycle 2, the researcher devised a plan that included three interventions. First, he created a graphic facilitation workshop; second, he created six ideograms to visually represent the various stages of Petty's creative process; and third, he devised and pretested an interview question guide for both the lecturing staff and students.

In Cycle 2 a graphic facilitation workshop was conducted in which students were given a design brief to brainstorm ideas for a logo and creative campaign for a fictional design agency. After the workshop, the students were interviewed, and lecturers were interviewed at a later stage. The findings suggested that students have misconceptions of graphic design terminology and concepts and had not received or grasped sufficient information and reinforcement on ideation.

The researcher altered the focus and content of Cycle 3 based on the data from Cycle 2 to assist students to understand graphic design terminology and concepts as they relate to plagiarism; hence, an intervention was conducted before Cycle 3. Two interventions were planned: refining the interview questions for Cycle 3 and a focus on graphic design terminology and theoretical concepts.

The second graphic facilitation workshop was conducted in Cycle 3. Different students participated and were set the same design brief as Cycle 2. After the workshop, the participants were interviewed, and their lecturers were interviewed again, to gauge the extent to which their work was affected by the workshops.

Chapter 4 presented and analysed the data to extract the findings. The findings were discussed and interpreted in relation to the research questions set out in chapter 1 using the Seven Phase Interpretive Analysis (Blanche *et al.* 2006: 321) and Braun and Clark's (2014) thematic analysis. A total of 13 themes (three themes for students and four themes for lecturers in Cycle 2, and three themes each for students and lecturers in Cycle 3) were identified from the data. The presentation and analysis of the data were followed by a critical discussion on the findings, which are summarised below.

### **5.3 Summary of findings**

This section reviews the study's results and links them to the research questions. The study aimed to draw conclusions that would assist lecturers to develop ideation abilities and to suggest more effective pedagogical strategies to assist graphic design students throughout the ideation process, prevent plagiarism and promote understanding of the creative process.



### **5.3.1 What is the applicability of graphic facilitation in a tertiary graphic design setting?**

This question was answered throughout the study and tested in the workshops. Graphic facilitation has been used in business settings to help workers come up with ideas, capture ideas, resolve conflicts and solve problems (Ball 1999; Muller *et al.* 2013; Hautop and Orngreen 2018). Graphic facilitation is relevant and appropriate in the creative process in assisting students to ideate. It aligns with Petty's (1997) creative process in generating ideas in the inspiration phase, but it can also be used to clarify the design brief, thereby helping to decide which idea to focus on, and refining these ideas in the distillation phase. Thus, inspiration, clarification and distillation are all part of graphic facilitation.

### **5.3.2 What ideation processes are currently employed by the participants?**

This question was mainly answered in the first action research cycle. The results showed that students employ three ideation processes. Firstly, some students did not undergo a premeditated ideation process; instead, they followed an organic creative process. Secondly, the most surprising finding was that some students worked backwards in that they executed the final design first and worked on the process thereafter to make it appear as though they had gone through the creative process. Lastly, some students followed an effective ideation process encompassing five phases (thumbnail sketches, mind maps, ideation, refining concepts and executing designs).

### **5.3.3 To what extent are students interested in developing creative new ideas, and aware of how important such ideas are?**

The third question was answered in Cycle 1, which also changed students' attitudes and interest in developing creative new ideas. In this cycle, one student's attitude indicated that he/she only had a vague understanding of ideation and the creative process, highlighting a lack of understanding of the importance of, and interest in, developing creative ideas and processes.

In Cycle 2 some students appeared to assume that ideas occur spontaneously in their minds with no reference, preparation, or development necessary. These students ended up plagiarising. Before the workshops, students did not appear knowledgeable in developing creative ideas, or aware of the potential and importance of creative ideas.

In Cycle 3 student attitudes towards generating ideas were reviewed in comparison to previous design assignments, and it was found that lecturers had mixed opinions on the level of improvement as a result of the workshops, rendering the results inconclusive.

#### **5.3.4 What are the benefits of adopting graphic facilitation?**

This was the overarching question which was partially answered in the literature review and expanded with the findings in chapter 4. The numerous benefits of adopting graphic facilitation include:

- 1) It helps engage everyone in the workshop;
- 2) It helps ideas come to life in front of the workshop participants;
- 3) Individuals co-create visuals;
- 4) Co-creation in the workshop helps every participant to feel valued;
- 5) It helps bring information closer to students;
- 6) It helps individuals retain and use shared information;
- 7) It presents ideas in relation to other ideas, discouraging students from viewing them in isolation;
- 8) It helps to keep a record of work from the workshop;
- 9) It helps to enhance understanding and the identification of the interconnections between concepts;
- 10) It helps participants to see a graphical representation of their ideas so that they do not have to keep their ideas in their minds;
- 11) It helps participants to learn and think about the things that are happening in front of them or being discussed.

Further benefits of adopting graphic facilitation in graphic design education and ideation include that it helped students to:

- a) Understand that the most unintelligent ideas can help to produce mind-blowing solutions;
- b) Understand that there are no poor ideas, and all ideas have potential, hinging on an individual approach to associations and connecting everything;
- c) Realise that they should not depend on the Internet for ideas but should generate ideas for themselves;
- d) Comprehend that they should not take any ideas for granted;
- e) Realise that every idea that one generates, and thinks is working, should be illustrated, even roughly, which can help one to generate new ideas;

- f) Have an epiphany of why they struggled to ideate and subsequently explain to the researcher that they judge their ideas too early while they are still brainstorming and forget that ideas have potential;
- g) Grasp that unless they note down their ideas, they end up forgetting some which they could have solidified into amazing concepts;
- h) Understand that every idea and every part of the process is important in answering the assignment;
- i) Learn that ideation is very easy and that one can ideate many ideas in a limited time period;
- j) Generate many ideas for a campaign in a short time period rather than restarting idea generation.

All these benefits can contribute to a mind shift to enhance graphic design education.

### **5.3.5 How can plagiarism be investigated in the ideation process through the use of graphic facilitation?**

The last research question related to the use of graphic facilitation to probe visual plagiarism in the ideation process over the course of the three action cycles. Students were observed in the graphic facilitation workshops, indicating that plagiarism can be investigated while students work on design assignments. This could be enhanced if graphic facilitation were to be incorporated into the creative process for every project. Some students developed their ideas by feeding off those of one another in the workshop. Uncertainty regarding visual plagiarism crept in when students took an idea and made it their own, based on the principle from the associative theory of creativity that new ideas may be inspired when other ideas are next to each other. Students' uncertainty lay in how to draw the line between what is and what is not plagiarism. However, when ideas were sparking from students feeding on one another, they developed ideas in different directions, where they applied their thinking.

The research revealed that students fall prey to plagiarism for at least nine reasons (page 148, section 4.6.5). What stood out was that within the context of the ideation process, students failed to understand and define design terminology and theoretical concepts, including plagiarism, inspiration, and influence; and hence struggled to identify when they were plagiarising.

### **5.4 Contribution of the study**

This study explored the applicability of graphic facilitation for ideation among second-year graphic design students at DUT. It broadened understanding in a variety of ways and contributes

to the existing body of knowledge within academia, especially with regard to graphic facilitation, graphic design and ideation. The literature revealed no study that incorporated graphic facilitation in education, ideation, or graphic design. Hence, this study provides empirical findings on the application of graphic facilitation in a tertiary setting involving graphic design students. It aimed to address student plagiarism while imparting design terminology and theoretical concepts.

The study was informed by the work of scholars like Petty (1997); Vygotsky (1978), de la Harpe (2006: 2) and Schunk (2012). Vygotsky's constructivism was initially questioned, and it was criticised for failing to account for students' recollection of taught material. Vygotsky's constructivism is used to assist students to assimilate knowledge while learning graphic design, but in the study students also appeared to struggle to retain information that their lecturers stated had been taught, thereby rendering ideation a more complex task than necessary. Retention of information was not specifically investigated, but it is a possible reason why ideation still appears to be a struggle for students and needs further investigation.

Secondly, design education curricula in South African and overseas tertiary institutions rely on students' creativity developing through the completion of creative task-oriented practical projects rather than on the processes of creativity, and originating ideas. The study's results reveal misconceptions about students' instruction in ideation and lecturers' assumptions. Lecturers appeared to assume that since learning about ideation is within the design briefs, students would easily grasp ideation concepts. This was not demonstrated by the students in the original observation or the workshops. Their inconsistent ideation processes may be the result of an educational context similar to that described by de la Harpe (2006: 2) that focuses more on the execution of design rather than instruction in design and ideation.

Graphic facilitation helped the students to understand some design concepts that they had not previously grasped, and integrating graphic facilitation in the creative process enhanced their understanding of visual plagiarism in assignments. In turn, it appeared that graphic facilitation could assist in reducing student visual plagiarism when applied consistently as part of the creative process. Although the results were inconclusive to some degree, the researcher believes that he managed to overcome the obstacles and bring the study to a satisfactory conclusion.

### **5.5 Recommendations for future practice**

This section offers recommendations in relation to lecturers' teaching practice to help curb plagiarism, encourage a more successful ideation process and help graphic design students to be more creative. Further investigations are recommended to identify more clearly how to assist students firstly, to understand graphic design terminology and theoretical concepts that impact their critical thinking; secondly, to ensure explicit understanding of the design process; and thirdly, to understand that brainstorming is not ideation as such but one ideation technique among many. It is recommended that students are taught many brainstorming and ideation techniques and exercises making use of various methods.

Brainstorming techniques and exercises will help students to understand how brainstorming and ideation work as effective ways to develop preliminary original ideas (the divergent thinking phase). Students should be enabled to understand the main reasons for following the creative process, including the benefits. Showing students how top designers use ideation in the creative process to develop award-winning and inspiring work is likely to have an impact on how they think and work.

A change in teaching methods is necessary to ensure that students understand that ideation is essential. This needs to be emphasised in every project for the duration of the student's academic life. Marking criteria and rubrics should award marks for creativity, the ideas generated and for following the creative process. This would encourage students to follow the process more conscientiously, work harder, enjoy the work and be less prone to plagiarism.

Teaching practice should be modified so that students learn the communication process and execute it effectively rather than sitting in a lecture room and working on assignments. They need to scrutinise examples of effective communication to understand why and when different cases work.

### **5.6 Recommendations for future research**

Future research could examine how the COVID-19 pandemic affected graphic design students, including their motivation, application, mental health, and other issues. The effects on student performance based on the drop-out, failure and throughput rates in 2020 and 2021 would benefit from further enquiry.

Future studies could also focus on how ideation could be incorporated in design education in such a way that it becomes second nature to students while learning design. Lecturers need to emphasise the importance of ideation and ensure that students have grasped and applied ideation concepts.

## **5.7 Conclusion**

In conclusion, graphic facilitation appears to be applicable and effective for graphic design when used by students in the creative process to generate ideas. However, the results on the extent to which the students' work improved were inconclusive because a) both samples of participants were small; b) the COVID-19 circumstances were abnormal, and c) the lecturers' views were possibly not objective. Nonetheless, the students benefited from the graphic facilitation workshops in terms of their understanding of terms, the importance of ideation and the creative process, and in developing creative ideas.

The findings indicated that adopting graphic facilitation in graphic design was beneficial for design education, especially the creative process and ideation. It initiated the process of enabling a mind shift among graphic design students at DUT that will assist in the assimilation of knowledge.

Finally, graphic facilitation was employed to investigate visual plagiarism in the three action cycles of the ideation process. This was achieved by means of graphic facilitation workshops during which students were observed. It highlighted that plagiarism can be investigated while students work on design assignments, and better still when graphic facilitation is incorporated into the creative process. Students fed off one another's ideas during the workshop. Future research could investigate the activities and processes in more detail, so as to reach more conclusive findings on the benefits of graphic facilitation. This could suggest solutions to some of the problems in graphic facilitation, ideation, the creative process and visual plagiarism, graphic design theory and conceptualisation that lecturers and students might face.

## References

- Adams, R. 2015. Cheating found to be rife in British schools and universities. *The Guardian*, 15 June. Available: <http://www.theguardian.com/education/2015/jun/15/cheating-rife-in-uk-education-system-dispatches-investigation-shows> (Accessed 12 April 2019)
- Ahmed, S. and Asraf, R.M., 2018. The workshop as a qualitative research approach: lessons learnt from a “critical thinking through writing” workshop. *The Turkish Online Journal of Design, Art and Communication*, 2018, pp.1504-1510.
- AIGA. 1993. *Graphic Design: A Career guide and education directory*. Massachusetts: American Institute of Graphic Arts.
- Al-Fedaghi, S. 2012. A conceptual foundation for the Shannon-Weaver Model of communication. *International Journal of Soft Computing*, 7 (1): 12-19. Available: [https://www.researchgate.net/publication/272964534\\_A\\_Conceptual\\_Foundation\\_for\\_the\\_Shannon-Weaver\\_Model\\_of\\_Communication](https://www.researchgate.net/publication/272964534_A_Conceptual_Foundation_for_the_Shannon-Weaver_Model_of_Communication) (Accessed 12 July 2020).
- Alber. R. 2011. 6 Scaffolding strategies to use with your students. Available: <https://www.edutopia.org/blog/scaffolding-lessons-six-strategies-rebecca-alber> (Accessed 07 February 2021).
- Altarriba, J., Leblebici-Başar, D. and Vitrano, D. 2021. Revisiting Mednick's (1962) Theory of creativity with a composite measure of creativity: the effect of stimulus type on Word Association Production. *The Journal of Creative Behaviour*. 55(1).
- Amin, A., Sudana, I., Setyosari, P. and Djatmika, E., 2021. The effectiveness of mobile blended problem based learning on mathematical problem-solving. *International Journal of Interactive Mobile Technologies*, 15(1): 119-141.
- Amineh, R. J. and Asl, H. D. 2015. Review of constructivism and social constructivism. *Journal of Social Sciences, Literature and Languages*, 1(1): 9-16. Available: <https://www.semanticscholar.org/paper/Review-of-Constructivism-and-Social->

Constructivism-Amineh-Asl/38903f4a7255496f75124d639e14e9b810c17370 (Accessed 23 May 2019)

Antwi, S. K., & Kasim, H. (2015). Qualitative and quantitative research paradigms in business research: A Philosophical Reflection Performance Management Practices in the Ghanaian local government system View project. *European Journal of Business and Management*, 7(3), 217–226.

AQR. 2013. The Association for Qualitative Research the hub of qualitative thinking: workshop. Available: <https://www.aqr.org.uk/glossary/workshop> (Accessed 10 June 2021)

Ashcroft, B., Griffiths, G and Triffin, H. 2007. *Post-colonial studies: The key concepts*. 2<sup>nd</sup> ed. Oxford: Routledge.

Asana. 2021. *Convergent vs. divergent thinking: Finding the right balance for creative problem solving*. Available: <https://asana.com/resources/convergent-vs-divergent> (Accessed 11 June 2021)

Aspelund, K. 2010. *The design process*. New York: Fairchild Books.

Bailey, C. A. 2007. *A guide to qualitative field research*. 2<sup>nd</sup> ed. California: Pine Forge Press

Bailey, N., 2011. Graphic facilitation: How it benefits L and D. *Training and Development in Australia*, 38(2), pp.14-15.

Baldwin, J and Roberts, L. 2006. *Visual communication from theory to practice*. London: AVA Publishing SA.

Ball, G. 1999. *Graphic facilitation focuses on a group's thoughts*. Available: <https://www.mediate.com/articles/ball.cfm> (Accessed 17 June 2020)

Barnard, M. 2005. *Graphic design as communication*. Oxford: Routledge.

Beaty, R., Silvia, P., Nusbaum, E., Jauk, E., and Benedek, M. 2014. The Roles of Associative and Executive Processes in Creative Cognition. *Memory and Cognition*. 42(7)



- Bell, M. A 2015, 'Embrace your inner doodler! Join the sketchnoting revolution!', *Internet@Schools*, 22( 2): 12. Available:  
<https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=edsgao&AN=edsgc1.407228476&site=eds-live&scope=site> (Accessed 13 February 2022)
- Belter, R.W. and duPre, A. 2009. A strategy to reduce plagiarism in an undergraduate course. *Teaching of Psychology*, 36(4): 257-261.
- Benedek, M. and Neubauer, A. 2013. Revisiting Mednick's Model on Creativity-Related Differences in Associative Hierarchies. Evidence for a Common Path to Uncommon Thought. *The Journal of creative behavior*. 47(4): 273-289.  
 Available: <https://doi.org/10.1002/jocb.35> (Accessed 12 May 2020)
- Berkun, S, 2016. *Creativity is not an accident*.  
 Available: <https://scottberkun.com/2016/creativity-is-not-an-accident/> (Accessed 12 May 2020)
- Blackstone, A. 2012. *Principles of Sociological Inquiry – Qualitative and Quantitative Methods*. Saylor Foundation: Washington DC
- Blanche, M. T, Durrheim. K and Painter, D. 2006. *Research in Practice: Applied Methods for the Social Sciences*. Cape Town: University of Cape Town Press.
- Bradely, S. 2013. *Become A Better Designer Through Critical Thinking*. Available:  
<https://vanseodesign.com/web-design/critical-thinking/> (Accessed 21 February 2023)
- Braun, V. and Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2): 77-101. Available: <http://dx.doi.org/10.1191/1478088706qp063oa> (Accessed 10 May 2020)
- Braun, V. and Clarke, V. 2013. Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The Psychologist*, 26(2). 120-123. Available:  
<http://www.thepsychologist.org.uk/archive/archivehome.cfm?volumeID=26&editionI>  
 (Accessed 10 May 2020)

Braun, V. and Clarke, V. 2014. What can “thematic analysis” offer health and wellbeing researchers, *International Journal of Qualitative Studies on health and well-being*. 9(1). Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4201665> (Accessed 10 May 2020)

Braun, V. and Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2): 77-101. Available: <http://dx.doi.org/10.1191/1478088706qp063oa> (Accessed 10 May 2020)

Brodwin, E. 2015. Here’s where ‘aha!’ moments come from. *Business insider*. Available: <https://www.businessinsider.com/where-do-eureka-moments-come-from-2015-1?IR=T> (Accessed 17 July 2020)

Brink, H. I. L. 1993. Validity and reliability in qualitative research. *Curations*, 16(2): 35-38.

Brown, A. S. 1973. An empirical verification of Mednick’s associative theory of creativity. *Bulletin of the Psychonomic Society*. 2:429–430. Available: <https://doi.org/10.3758/BF03334439> (Accessed 18 March 2020)

Brown, A. L. 1994. The advancement of learning. *Educational researcher*, 23(8): 4-12.

Bull, K. S., Montgomery, D., & Baloch, L. 1995. Teaching creativity at the college level: A synthesis of curricular components perceived as important by instructors. *Creativity Research Journal*, 8(1):83–89. Available: [https://doi.org/10.1207/s15326934crj0801\\_7](https://doi.org/10.1207/s15326934crj0801_7) (Accessed 18 March 2020)

Burbage, A. 2016. Theories on creativity (online video). Accessed: <https://www.youtube.com/watch?v=I0ZvJfnDTh0> (Available 10 May 2020)

Burkus, D. 2014. How to have a Eureka Moment. *Harvard business review*. Available: <https://hbr.org/2014/03/how-to-have-a-eureka-moment> (Accessed 17 July 2020)

Businesstopia in Communication. 2018. *Shannon and Weaver Model of Communication*. Available: <https://www.businesstopia.net/communication/shannon-and-weaver-model-communication#:~:text=Criticisms%20of%20Shannon%20Weaver%20Model&text=Receive>

[r%20plays%20the%20passive%20part,primary%20role%20that%20sends%20messages.&tex  
t=The%20model%20is%20taken%20by,is%20not%20mathematical%20in%20nature](#)

(Accessed 20 December 2020)

Buzan, T. and Buzan, B. 1994. *The mind map book: How to Use Radiant Thinking to Maximize Your Brain's Untapped Potential*. New York: Penguin Books

Cajander, A. 2016. Action research 4: *Four disadvantages*. (blog) Available:

<https://www.asacajander.se/2016/12/19/action-research-4-four-disadvantages/> (Accessed 5 May 2020)

Cambridge Dictionary. 2020a. *Meaning of similarity in English*. Available:

<https://dictionary.cambridge.org/dictionary/english/similarity> (Accessed 10 March 2020)

Cambridge Dictionary. 2020b. *Meaning of mediation in English*. Available:

<https://dictionary.cambridge.org/dictionary/english/mediation> (Accessed 10 March 2020)

Cheema, Z., Mahmood, S. T., Mahmood, A., and Shah, M. A. 2011. Conceptual awareness of research scholars about plagiarism at higher education level: Intellectual property right and patent. *International Journal of Academic Research*, 3(1): 666-671.

Available: [https://www.researchgate.net/publication/236177595\\_CONCEPTUAL\\_AWARENESS\\_OF\\_RESEARCH\\_SCHOLARS\\_ABOUT\\_PLAGIARISM\\_AT\\_HIGHER\\_EDUCATION\\_LEVEL\\_INTELLECTUAL\\_PROPERTY\\_RIGHT\\_AND\\_PATENT](https://www.researchgate.net/publication/236177595_CONCEPTUAL_AWARENESS_OF_RESEARCH_SCHOLARS_ABOUT_PLAGIARISM_AT_HIGHER_EDUCATION_LEVEL_INTELLECTUAL_PROPERTY_RIGHT_AND_PATENT) (Accessed 10 January 2020)

Cherry, K. 2019. *The Zone of Proximal Development as Defined by Vygotsky*.

Available: <https://www.verywellmind.com/what-is-the-zone-of-proximal-development-2796034> (Accessed 10 January 2020)

Chin, C, and Osborne, J. 2008. Students' questions: a potential resource for teaching and learning science, *Studies in Science Education*, 44(1): 1-39.

Available: <https://www.tandfonline.com/doi/full/10.1080/03057260701828101> (Accessed 10 April 2019)

Christensen, T. 2014. *The challenge with teaching creativity*. Available:  
<https://creativesomething.net/post/84942658350/the-challenge-with-teaching-creativity>  
(Accessed 09 February 2021)

Clarke. V. 2019. *Thematic analysis part1 – Braun Clarke & Hayfield* (online video).  
Available: <https://www.youtube.com/watch?v=Lor1A0kRIKU> (Accessed 05 May 2020)

Cloete, R. 2021 *NSFAS: Last chance to apply for 2021 funding* Available:  
<https://www.skillsportal.co.za/content/nsfas-last-chance-apply-2021-funding>. Accessed 05  
January 2022)

Colnerud, G. and Rosander, M., 2009. Academic dishonesty, ethical norms and  
learning. *Assessment & Evaluation in Higher Education*, 34 (5), pp.505-517.

Congleton, C., 2011. *Action research at LILA: Exploring the role of graphic facilitation in  
adult learning*. Available: [http://www.think-in-colour.com.au/wp-](http://www.think-in-colour.com.au/wp-content/uploads/2012/05/Congleton_AR-final_5-11.pdf)  
[content/uploads/2012/05/Congleton\\_AR-final\\_5-11.pdf](http://www.think-in-colour.com.au/wp-content/uploads/2012/05/Congleton_AR-final_5-11.pdf) (Accessed 10 July 2019)

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five  
approaches*. California: Sage.

Creswell, J. W. 2003. *Qualitative inquiry & research design: choosing among five approaches*.  
2<sup>nd</sup> edition California: Sage.

Creswell, J. W. 2013. *Qualitative inquiry & research design: choosing among five approaches*.  
3<sup>rd</sup> edition. Washington DC: Sage

Creswell, J. W. 2014. *Qualitative inquiry & research design: choosing among five approaches*  
4<sup>th</sup> ed. California: Sage

Cronje, J. and Appiah, E. 2013. Information Communication and Technology (ICT) and the  
Challenges of Ideation in Graphic Design: An Activity Theory Focus. *International Journal  
of Computer Applications*, 63(6): (0975 – 8887), Available:  
[https://www.academia.edu/3183589/Appiah E. and Cronje% C3%A9 J. C. Information c](https://www.academia.edu/3183589/Appiah_E._and_Cronje_J._C._Information_c)

[ommunication\\_and\\_technology\\_ICT\\_and\\_the\\_challenges\\_of\\_ideation\\_in\\_graphic\\_design\\_an\\_activity\\_theory\\_focus](#) (Accessed 26 July 2019)

Cropley, A. (2000). Defining and measuring creativity: Are creativity tests worth using. *Roeper Review*, 23(2):72–79.

Cullinane, K. 2013. The Original Paradox: Or the value of creating new designs vs. being original. *Design Observer*. Available: <https://designobserver.com/feature/the-original-paradox/37733/> (Accessed 5 November 2019)

Davis, M. 2012. *Graphic Design Theory: Graphic Design in Context*. London: Thames & Hudson.

Dawson, J. 2004. Plagiarism: What's really going on? In *Seeking Educational Excellence*. Proceedings of the 13th Annual Teaching Learning Forum, 9-10 February 2004. Perth: Murdoch University.  
Available: <http://clt.curtin.edu.au/events/conferences/tlf/tlf2004/dawson.html> (Accessed 10 June 2020)

Dculibrary. 2013. *Why do students plagiarise?* (online video)  
Available: [https://www.youtube.com/watch?v=kyEr9Wqp\\_1E](https://www.youtube.com/watch?v=kyEr9Wqp_1E) (Accessed 10 June 2020)

de la Harpe, H.E., 2006. Cognitive and behavioural strategies for fostering creativity in graphic design education, Doctoral dissertation, North-West University, Potchefstroom Campus. Available:  
[https://scholar.google.com/scholar\\_url?url=http://repository.nwu.ac.za/bitstream/handle/10394/817/delaharpe\\_hanrie.pdf%3Fsequence%3D1&hl=en&sa=T&oi=gsb-gga&ct=res&cd=0&d=2679862368331687509&ei=dOB5XcW1DovmmgG-1oKACg&scisig=AAGBfm1fI8EXzWrjf0JRm5bEWUISQYMx8A](https://scholar.google.com/scholar_url?url=http://repository.nwu.ac.za/bitstream/handle/10394/817/delaharpe_hanrie.pdf%3Fsequence%3D1&hl=en&sa=T&oi=gsb-gga&ct=res&cd=0&d=2679862368331687509&ei=dOB5XcW1DovmmgG-1oKACg&scisig=AAGBfm1fI8EXzWrjf0JRm5bEWUISQYMx8A) (Accessed 22 July 2019)

Dictionary. Com. 2019a. *Originality*. Available:  
<https://www.dictionary.com/browse/originality?s=t> (Accessed 10 July 2019)

Dictionary.com. 2019b. *Creativity*.  
Available: <https://www.dictionary.com/browse/creativity?s=t> (Accessed 02 June 2020)

Diggory, K. 2019. *Communication is the key and why digital technologies are only a means to an end*. Available: <https://www.explore-life.com/en/articles/communication-is-the-key> (Accessed 13 February 2020)

Dudovskiy, J. 2011. *Action research*. Available: [https://research-methodology.net/research-methods/action-research/#\\_ftnref1](https://research-methodology.net/research-methods/action-research/#_ftnref1) (Accessed 13 February 2020)

Du, X. and Han, J. 2016. A literature review on the definition and process of project-based learning and other relative studies. *Creative Education*, 7 (07): 1079.

Durban University of Technology, 2019. *2019 Departmental Handbook: Visual Communication Design*. Available: <https://www.dut.ac.za/wpcontent/uploads/handbooks/A&D%20Visual%20Communication%20Design.pdf> (Accessed 6 November 2019)

Durban University of Technology, 2021. *2021 Departmental Handbook: Visual Communication Design: 2022 Departmental Handbook*. Available: <https://www.dut.ac.za/wp-content/uploads/handbooks/A&D%20Visual%20Communication%20Design.pdf> (Accessed 10 November 2021)

Durban University of Technology, 2022. *2022 Departmental Handbook: Visual Communication Design: 2022 Departmental Handbook*. Available: <https://www.dut.ac.za/wp-content/uploads/handbooks/A&D%20Visual%20Communication%20Design.pdf> (Accessed 6 February 2022)

Earls, M., 2015. *Copy, Copy, Copy: How to Do Smarter Marketing by Using Other People's Ideas*. Chichester: John Wiley & Sons

Ecclesiastes 1:9, Holy Bible: King James version

Economou, I. 2011. The problem with plagiarism. In: Breytenbach, A., and Faber, L. 20/20 Design Vision conference proceedings of the sixth international DEFSA

conference. Johannesburg. 7-8 September 2011. South Africa. 79-86 Available: <http://www.defsa.org.za/sites/default/files/downloads/2011conference/Economou.pdf> (Accessed 19 May 2020)

Erdurak, N.D., 2002. 'Enforcing creativity in graphic design', Master's thesis, Bilkent University, Ankara.

Espiner, D. and Hartnett, F. 2016. Innovation and graphic facilitation. *Aoteroa New Zealand social work*. 28(4): 44-53. Available: <https://anzswjournal.nz/anzsw/article/view/298> (Accessed 22 June 2019)

Espy, L. 2019. *The Osborn Parnes Creative Problem-solving Process*. Available: <https://projectbliss.net/osborn-parnes-creative-problem-solving-process/> (Accessed 28 September 2020)

Evering, L. C. and Moorman, G. 2012. Rethinking plagiarism in the digital age. *The Journal of adolescent and adult literacy*. 56(1):35-44. Available: <https://doi.org/10.1002/JAAL.00100> (Accessed 10 May 2020)

Explorable. 2009. *Population sampling techniques*. Available: <https://explorable.com/population-sampling> (Accessed 10 June 2020)

Fasko, D. 1999. Associative theory. *Encyclopedia of creativity*, 1: 135- 139 Available: <https://books.google.co.za/books?id=cpc7CJH1s8C&pg=PA135&lpg=PA135&dq=encyclopedia+of+creativity+daniel+fasko&source=bl&ots=nM8nzLzo8J&sig=ACfU3U0VSLU9P1tdKhHS6OZZQbroVYChgg&hl=en&sa=X&ved=2ahUKewj-nID82sjkAhXkQxUIHY-vCYoQ6AEwA3oECAkQAQ#v=onepage&q=encyclopedia%20of%20creativity%20daniel%20fasko&f=false> (Accessed 10 September 2019)

Fish, R. and Hura, G., 2013. Students' Perceptions of Plagiarism. *Journal of the Scholarship of Teaching and Learning*, 13(5):33-45. Available: <https://files.eric.ed.gov/fulltext/EJ1017029.pdf> (Accessed 10 February 2020)

Fiske, J. 2010. *Introduction to Communication Studies*, 3<sup>rd</sup> ed. Oxford: Routledge

Flick, U. 2007. *Designing qualitative research*. London: Sage Publications

Fosnot, C. T. 2005. *Constructivism: Theory, Perspectives and practice*. 2<sup>nd</sup> ed. New York: Teachers College Press Available:

[http://faculty.arts.ubc.ca/emeyers/LIBR535/readings/Fosnot&Perry\\_2005.pdf](http://faculty.arts.ubc.ca/emeyers/LIBR535/readings/Fosnot&Perry_2005.pdf) (Accessed 26 May 2019)

Fowler, H.R., Aaron, J.E. and Okoomian, J. 2007. *The little, brown handbook* 10<sup>th</sup> ed. New York: Pearson Education

Gadsby, T. 2021. *Ultimate Guide For Using Graphic Recording In Online Meetings*.

Available: <https://thefuselight.com/ultimate-guide-for-using-graphic-recording-in-online-meetings/> (Accessed 29 June 2021)

Garrett, L, and Robinson, A. 2012. *Spot the Difference! Visual plagiarism in the visual arts*.

Available: [https://research.uca.ac.uk/1194/1/ewic\\_ev12\\_s2paper1.pdf](https://research.uca.ac.uk/1194/1/ewic_ev12_s2paper1.pdf) (Accessed 29 August 2019)

Gharbo, G. 2020. Vizual worx turn ideas into action.

Available: <https://vizualworx.com/services/visual-summaries/> (Accessed 22 June 2021)

Glen, S. 2017. *"Welcome to Statistics How To!" From StatisticsHowTo.com: Elementary*

*Statistics for the rest of us!* Available: <https://www.statisticshowto.com/> (Accessed 07 May 2020)

Gray, D. E. 2009. *Doing research in the real world*. London: Sage Publications

Greenwood, D. J. and Levin, M. 2007. *Introduction to action research*, 2<sup>nd</sup> ed, SAGE Publications, Inc., Thousand Oaks, California, Available:

<http://dx.doi.org/10.4135/9781412984614> (Accessed 12 May 2020)

Griffin, W. G. and Morrison, D. 2010. *The creative process Illustrated (how advertising's big ideas are born)*. Ohio: How books



Grocholl, T., Jershov, D. and Orav, K. 2016. *Visual Facilitation cookbook: creative learning cookbook*. Estonia: Estonian UNESCO Youth Association. Available: [https://www.salto-youth.net/downloads/toolbox\\_tool\\_download-file-1430/VF-cookbook-web.pdf](https://www.salto-youth.net/downloads/toolbox_tool_download-file-1430/VF-cookbook-web.pdf) (Accessed 12 May 2020)

Guiraud, P.1975. *Semiology*. London: Routledge & Kegan Ltd

Haldemann, J. 2014. *A brief history of pictograms and ideograms*. Available: <https://saffroninteractive.com/a-brief-history-of-pictograms-and-ideograms/> (Accessed 27 April 2020)

Haleem, A., Khan, M.K., Sufia, S., Chaudhry, S., Siddiqui, M.I. and Khan, A.A., 2015. The role of repetition and reinforcement in school-based oral health education-a cluster randomized controlled trial. *BMC Public Health*, 16(1), pp.1-11.

Hammond, J. and Gibbons, P., 2005. What is scaffolding? Teachers' voices, 8, Explicitly supporting reading and writing in the classroom, 8-16.

Hard, S.F., Conway, J.M. and Moran, A.C., 2006. Faculty and college students beliefs about the frequency of student academic misconduct. *The Journal of Higher Education*, 77(6). 1058-1080.

Hautopp, H. and Ørngreen, R. 2018. A Review of Graphic Facilitation in Organizational and Educational Contexts. *Designs for Learning*, 10 (1)  
Available:<https://www.designsforlearning.nu/articles/10.16993/dfl.97/> (Accessed 4 April 2019)

Haynes, W.L. and Riordan, C.A., 1996. Student cooperative learning workshops go mainstream: UMR's Excel program. *Journal of Engineering Education*, 85(4): 293-302.

Hein, G. 1991. Constructivist learning theory. Institute for Inquiry The Museum and the Needs of People. In: CECA (International Committee of Museum Educators) Conference Jerusalem, Israel, 15-22 October 1991. Lesley College. Massachusetts USA. Available: [http://beta.edtechpolicy.org/AAASGW/Session2/const\\_inquiry\\_paper.pdf](http://beta.edtechpolicy.org/AAASGW/Session2/const_inquiry_paper.pdf) (Accessed April 2019)

- Heller, S. 1998. *The education of a graphic designer*. New York: Allworth Press
- Hembree, R. 2006. *The complete Graphic designer: a guide to understanding graphics and visual communication*. Massachusetts: Rockport publishing
- Henley, D. 2018. *Creativity: Why it matters*. London: Elliot and Thompson Limited
- Hokanson, B. 2007. By measure: creativity in design. *Journal of Industry and Higher Education*, 21: 353-359. Available: <http://doi.org/10.5367/0000000007782311830> (Accessed 20 May 2020)
- Horberry, R. 2009. *Brilliant copywriting: How to craft the most interesting and effective copy imaginable*. Harlow: Pearson Education Limited
- Hu, S. 2014. Pretesting. *Encyclopedia of quality of life and well-being research*. Available: <https://doi.org/10.1007/978-94-007-0753-5> (Accessed 27 April 2020)
- Illeris, K. 2018. An overview of the history of learning theory. *European Journal of Education Research Development and Policy*, 53(1): 86-101. Available: <https://doi.org/10.1111/ejed.12265> (Accessed 20 May 2020)
- ILT Brief 2. 2011. IDS Practice Paper in brief: Learning about an alternative approach to strategic discussions. Available: <https://content.changeroo.com/wp-content/uploads/Academy/2017/07/ids2011visualisation-alternativeapproachtostrategiceddiscussion.pdf> (Accessed 10 January 2020)
- Institute for Work and Health. 2014. *Selection bias*. Available: <https://www.iwh.on.ca/what-researchers-mean-by/selection-bias> (Accessed 20 May 2020)
- Isaksen, S. G., & Parnes, S. J. 1992. Curriculum Planning for Creative Thinking and Problem Solving. *Journal of Creative Behavior*, 19(1): 1-29. (In Parnes, S. J. Source book for Creative problem-solving. Buffalo, New York: Creative Education Foundation Press: 422-440)

Isaksen, S. G. and Treffinger, D. J. 2004. Celebrating 50 years of Reflective Practice: Versions of Creative Problem Solving. *The Journal of creative behavior*, 38 (2): 75-101

Iucu, R.B. and Marin, E., 2014. Authentic learning in adult education. *Procedia-Social and Behavioral Sciences*, 142, pp.410-415.

Jensen, K.B. & Neuman, W.R. 2013. Evolving paradigms of communication research. *International Journal of Communication*, 230-248.

Jharotia, K. A. 2018. Plagiarism detection through software in digital software in digital world. JK Business School Conference, 30/03/2018. At Gurugram, Haryana Available: [https://www.researchgate.net/publication/324151303\\_PLAGIARISM\\_DETECTION\\_THROUGH\\_SOFTWARE\\_IN\\_DIGITAL\\_WORLD](https://www.researchgate.net/publication/324151303_PLAGIARISM_DETECTION_THROUGH_SOFTWARE_IN_DIGITAL_WORLD) (Accessed 28 February 2020)

Jarmusch, J. 2013. 'Things I've Learned: Jim Jarmusch', *MOVIEMAKER*, 5 June. Available: <https://www.moviemaker.com/jim-jarmusch-5-golden-rules-of-moviemaking/>. (Accessed 21 February 2023)

Johnson, A. 2016. *Wallas model of creativity* (video) Available: <https://www.youtube.com/watch?v=14nX6lF7UAc> (Accessed 14 February 2020)

Jones, S. 2014. How people read and write and they don't even notice: everyday lives and literacies on a Midlands council estate. *Literacy*, 48(2): 59-65. Available: <https://doi.org/10.1111/lit.12030> (Accessed 22 October 2019)

Kampylis, P. and Berki, E., 2014. Nurturing creative thinking. *International Academy of Education*, 6: 88

Kane, M. E. 2016. *Ethics in graphic design- Battling visual plagiarism*. Available: <http://www.ethicsingraphicdesign.org/design-plagiarism/> (Accessed 10 May 2020)

Kelly, M. 2019. *What is creativity? The ultimate guide to understanding today's most important ability*. Available: <https://99designs.com/blog/creative-thinking/what-is-creativity/> (Accessed 23 May 2019)

Kemmis, S. and McTaggart, R. 1988. *The Action Research Planner*, 3<sup>rd</sup> edition Victoria Australia: Deakin University Press

Kind, J. 1994. Fostering creativity. *The TQM Magazine*.6(5): 10.

Available: <https://www.emerald.com/insight/content/doi/10.1108/09544789410067943/full/pdf> (Accessed:17 August 2020)

Kivunja, C. and Kuyini, A. B. 2017. Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5): 26-41. Available: <https://doi.org/10.5430/ijhe.v6n5p26> (Accessed 06 May 2020)

Kleon, A. 2012. *Steal like an artist: 10 things nobody told you about being creative*. New York: Workman Publishing Limited

Kleon, A. 2018. *Copying is how we learn*. Available:

<https://austinkleon.com/2018/02/08/copying-is-how-we-learn/> (Accessed 31 July 2020)

Koberidze, G. and Tsereteli, N. 2019. Master graphic facilitation: Draw for training & meetings. Udemy

Kock, N. (2005). Using action research to study e-collaboration. *International Journal of E-collaboration*, 1(4): i-vii.

Kolk, M., 2009. *Embrace Action Research*. Available

[http://www.thecreativeeducator.com/v07/articles/Embracing\\_Action\\_Research](http://www.thecreativeeducator.com/v07/articles/Embracing_Action_Research) (Accessed 9 March 2018)

Kumar, R. 2011. Research methodology: A step-by-step guide for beginners. 3<sup>rd</sup> Ed. New Delhi: Sage Publications.

Kumar, R. 2014. Research methodology: A step-by-step guide for beginners. New Delhi: Sage Publications.

Laal, M. and Laal, M. 2012. Collaborative learning: what is it? *Procedia-Social and Behavioral Sciences*, 31: 491-495.

Ladudovic, A. and Vukusic, N. 2009. *Field Guide: How to be a Graphic Designer*. Massachusetts Rockport.

Landa, R. 2010. *Advertising by design: Generating and Designing Creative Ideas Across Media*. 2<sup>nd</sup> ed. City: John Wiley & Sons

Leedy, P. D. and Ormrod, J. E. 2005. *Practical research: Planning and design*. 8<sup>th</sup> edition. New Jersey: Pearson Education

Lethem, J., 2007. The ecstasy of influence. *Harpers Magazine*. February 2007: 59-71.  
Available: <https://najculture.org/bitstream/handle/20.500.11976/249/HarpersMagazine-2007-02-0081387.pdf?sequence=1> (Accessed 30 October 2019)

Lexico Dictionary. 2019a. *Copy*. Available: <https://www.lexico.com/definition/copy>  
(Accessed 02 December 2019)

Lexico Dictionary. 2020b. *Homonym*.  
Available: <https://www.lexico.com/en/definition/homonym> (Accessed 02 July 2020)

Lincoln, S. Y., & Guba, E. G. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage

Lipscomb, A. Swanson, J. and West, A. 2010. *Emerging Perspectives on Learning, Teaching, and Technology*, Global Text, Michael Orey. Chapter 21.  
Available.: [https://textbookequity.org/Textbooks/Orey\\_Emergin\\_Perspectives\\_Learning.pdf](https://textbookequity.org/Textbooks/Orey_Emergin_Perspectives_Learning.pdf)  
(Accessed 20 July 2020)

Lucero, A., 2012, June. Framing, aligning, paradoxing, abstracting, and directing: *How design mood boards work*. In *Proceedings of the designing interactive systems conference*: 438-447

Lynch, J. 2006. *The Perfectly Acceptable Practice of Literary Theft: Plagiarism, Copyright, and the Eighteenth Century*. Available: <https://www.writing-world.com/rights/lynch.shtml>  
(Accessed 10 October 2020)

Mackenzie, J., Tan, P. L., Hoverman, S. and Baldwin, C. 2012. The value and limitations of Action Research methodology, *Journal of hydrology* 474: 11-21, Available: <http://dx.doi.org/10.1016/j.jhydrol.2012.09.008> (Accessed 12 May 2020)

Macmillian, P. 2014. *Why do some students Plagiarise?* (online video). Available: <https://www.youtube.com/watch?v=BhS4mjyUhJY&t=1s> (Accessed 17 October 2019)

Mambrol, N. 2017. *Literary Theory and Criticism : Appropriation in Post-colonialism*. Available: <https://literariness.org/2017/09/28/appropriation-in-post-colonialism/#:~:text=A%20term%20used%20to%20describe,own%20social%20and%20cultural%20identities>. (Accessed 22 February 2023)

Mazarin, J. 2020. *Authentic Learning Activities: Examples & Concept*. Available: <https://study.com/academy/lesson/authentic-learning-activities-examples-lesson-quiz.html> (Accessed 17 October 2019)

Maziarz, M. B. 2011. *Kick as creativity makeover for artists and creative professionals*. London: Watkins Publishing

McMillan, K. and Weyers, J. 2013. *How to cite, reference & avoid plagiarism at university*. Essex: Pearson Education Limited

McNiff, J. and Whitehead, J 2011 *All you need to know about action research*. 2nd ed. London: Sage.

Mednick, S. 1962. The associative basis of the creativity process. *The journal of psychological review*, 69(3): 220-232.  
Available: <https://www.semanticscholar.org/paper/The-associative-basis-of-the-creative-process.-Mednick/927c10385d93d538e2791f8ef28c5eaf96e08a73#citing-papers> (Accessed 30 July 2020)

Meggs, P. B. and Purvis, A. W. 2006. *Meggs' History of Graphic Design*. 4<sup>th</sup> ed. New Jersey: John Wiley & Sons

Mehra, B. 2002. Bias in qualitative research: Voices from an online classroom. *The Qualitative Report*, 7 (1). Available: [http://nsuworks.nova.edu/tqr/vol7/iss1/2?utm\\_source=nsuworks.nova.edu%2Ftqr%2Fvol7%2Fiss1%2F2&utm\\_medium=PDF&utm\\_campaign=PDFCoverPages](http://nsuworks.nova.edu/tqr/vol7/iss1/2?utm_source=nsuworks.nova.edu%2Ftqr%2Fvol7%2Fiss1%2F2&utm_medium=PDF&utm_campaign=PDFCoverPages) (Accessed 07 May 2020)

Meier. 2012. *What is? Usual Plagiarism?*, Available: <https://www.slideshare.net/meier106/visual-plagiarism> (Accessed 19 April 2022)

Mendonca, P. 2016. Graphic facilitation, sketchnoting, journalism and the doodle revolution: new dimensions in comic scholarship. Intellect Limited. *Studies in Comics*. 7(1): 127-152  
Available: <http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=asu&AN=119334711&site=ehost-live&scope=site&custid=s5210036> (Accessed 30 July 2020)

Merriam-Webster Dictionary. 2019. Originality. Available: <https://www.merriam-webster.com/dictionary/originality> (Accessed 10 July 2019)

Mitch Medical. 2022. *Mednicks Associative Theory of Creativity*. Available: <https://www.mitchmedical.us/creativity/mednicks-associative-theory-of-creativity.html> (Accessed 23 February 2023)

Mithen, S. J. 1998. Creativity in human evolution and prehistory. London: Routledge

Morgan, J. and Welton, P. 1986. *See what I mean: An introduction to visual communication*. London: Edward Arnold.

Mortensen, D. 2020. *How to do a thematic analysis of user interviews*. Available: <https://www.interaction-design.org/literature/article/how-to-do-a-thematic-analysis-of-user-interviews> (Accessed 06 May 2020)

Moseley, D., Baumfield, V., Elliott, J., Gregson, M., Higgins, S., Miller, J. & Newton, D. 2005. *Frameworks for thinking: A handbook for teaching and learning*. Cambridge: Cambridge University Press

Muller, M., Wildman, D. M. and White, E. A. 1993. Equal Opportunity; PD Using PICTIVE. *Communications of the ACM*, 36 (6): 64-66.

Mumaw, S., 2015. *The shape of ideation*. (online video) Available: <https://www.youtube.com/watch?v=BErt2qRmoFQ&spfreload=5> (Accessed 25 July 2019)

Murphy, C., Scantlebury K., and Milne, C. 2015. Using Vygotsky's zone of proximal development to propose and test an explanatory model for conceptualising coteaching in pre-service science teacher education, *Asia-Pacific Journal of Teacher Education*, 43(4):281-295, DOI: 10.1080/1359866X.2015.1060291

Naiman, L. 2020. *Creativity at work*. Available: <https://www.creativityatwork.com/2014/02/17/what-is-creativity/> (Accessed 29 July 2020)

Newman, C. 2017. How 'Eureka Moments in Science Happen. *National Geographic*. Available: <https://www.nationalgeographic.com/news/2017/05/eureka-insight-newton-archimedes-genius-science/> (Accessed 20 August 2020)

Ngcoya, L. L. 2019. *Email* to Tendai Chiwandamira, 13 November.

Noh, M. A. M., Nudin, A. L. A. Narimah, N., Shamsudin, W. N. and Harun, M. 2016. Plagiarism in Graphic Design In. 2nd Art and Design International Conference 2016 (AnDIC 2016), At Concorde Hotel, Shah Alam, 9-11 October 2016 Available: [https://www.researchgate.net/publication/318815041\\_Plagiarism\\_in\\_Graphic\\_Design](https://www.researchgate.net/publication/318815041_Plagiarism_in_Graphic_Design) (Accessed 11 September 2019)

Noordin, M.K., Nasir, A.N., Ali, D.F. and Nordin, M.S., 2011. Problem-Based Learning (PBL) and Project-Based Learning (PjBL) in engineering education: a comparison. *Proceedings of the IETEC*, 11.

Nursing Society – SPUQC. 2018. *Shannon – Weaver Model of communication* (online video). Available: <https://www.youtube.com/watch?v=xuJKEqiv0XQ> (Accessed 10 February 2020)



Oaps, T. 2008.' An Investigation into the Development of a Creativity Support Tool for Advertising', PhD thesis, Auckland University of Technology, Auckland. Available: <https://core.ac.uk/download/pdf/56361453.pdf> (Accessed 18 February 2021)

Odell, D. W. 1981. The Argument of Young's "Conjectures on Original Composition. *Studies in Philology*, 78(1), 87-106. Available: <http://www.jstor.org/stable/4174066> (Accessed 5 November 2019)

Oellinger, M. and Knoblich, G. 2006. The Eureka Moment. *Scientific American Mind*, 17(5): 34-43

Ormrod, J. E. 2012. *Human Learning*. 6<sup>th</sup> ed. New Jersey: Pearson  
Oxford Learner's Dictionaries. 2020. Serendipity. Available: <https://www.oxfordlearnersdictionaries.com/definition/english/serendipity?q=serendipity> (Accessed 10 March 2020)

Oxford Learner's Dictionary. 2020. *Serendipity*. Available: [https://www.oxfordlearnersdictionaries.com/definition/american\\_english/serendipity](https://www.oxfordlearnersdictionaries.com/definition/american_english/serendipity) (Accessed 10 March 2020)

Oxford University Press dictionary. 2019. *Creativity*. Available: <http://oxfordlearnersdictionaries.com/definition/english/creativity> (Accessed 10 March 2020)

Park, C. (2003). In other (people's) words: Plagiarism by university students – literature and lessons. *Assessment & Evaluation in Higher Education*, 28(5), 471-488.

Pemberton, A. M. 2000. *The Ethics of Writing Instruction: Issues in Theory and Practice*. Stamford: Ablex Publishing Corporation

Petty, G. 1997. *How to be better at creativity*. London: Kogan Page.

Plagiarism . 2017. *Plagiarism: Facts & Stats* Available: <https://www.plagiarism.org/article/plagiarism-facts-and-stats> (Available 20 August 2019)

Plsek, P. E. 1996. *Working paper: Models for the Creative Process*. Available: <http://www.directedcreativity.com/pages/WPMModels.html> (Accessed 20 August 2019)

Powell, K. C. and Kalina, C. J. 2009. Cognitive and social constructivism: Developing tools for an effective classroom. *Education*, 130(2): 241-250.  
Available: <https://docdrop.org/static/drop-pdf/ConstructivismDay1-ln36v.pdf> (Accessed 10 May 2020)

Ransdell, D. R. 2001. Class workshops: An alternative to peer-group review. *Teaching English in the Two Year College*, 29(1): 32. Available: <https://search.proquest.com/openview/39668663fd693260d856f1f6bde3391c/1?pq-origsite=gscholar&cbl=47668> (Accessed 02 May 2020)

Reddy, M. S. 2010. *Creativity in college students*. New Delhi: Discovery Publishing House.

Reese, H. W. 2011. The learning-by-doing principle. *Behavioral development bulletin*, 17 (1): 1.

Reid, L.N. and Rotfeld, H.J. 1976. Toward an associative model of advertising creativity, *Journal of Advertising*, 5(4): 24. Available: <https://doi.org/10.1080/00913367.1976.10672660> (Accessed: 30 July 2020)

Renard, L., 1999. Cut and paste 101: Plagiarism and the net. *Educational Leadership*, 57(4), pp.38-42.

Rodriguez, M 2014. *Zone of Proximal Development* (online video) Available: <https://www.youtube.com/watch?v=Du6vqSOj7UU> (Accessed 11 October 2019)

Roetzel, P.G. 2018. Information overload in the information age: a review of the literature from business administration, business psychology, and related disciplines with a bibliometric approach and framework development. *Business Research*, 1-44.  
Available: <https://doi.org/10.1177/147078539303500202> (Accessed 11 September 2019)

Sangelkar, S., De Vries, C., Ashour, O. and Lasher, W.C., 2015, June. Teaching idea generation to undergraduate students within the time constraints of a capstone course. In *2015 ASEE Annual Conference & Exposition* (pp. 26-1476)

Sapienza, Z.S., Veenstra, A.S., Kirtiklis, K. and Giannino, S.S., 2016. The transmission model of communication: Toward a multidisciplinary explication. *ETC: A Review of General Semantics*, 73(4): 321-341. Available:

[https://www.researchgate.net/publication/323025486\\_The\\_Transmission\\_Model\\_of\\_Communication\\_Toward\\_a\\_Multidisciplinary\\_Explication](https://www.researchgate.net/publication/323025486_The_Transmission_Model_of_Communication_Toward_a_Multidisciplinary_Explication) (Accessed 10 June 2020)

Sarniak, R. 2015. *9 types of research bias and how to avoid them*. Available: <https://www.quirks.com/articles/9-types-of-research-bias-and-how-to-avoid-them> (Accessed 07 May 2020)

Schunk, D. H. 2012. *Learning theories: An educational perspective* 6<sup>th</sup> ed. Boston: Allyn & Bacon.

Sharma, P. 2004. *Teaching creativity, a systemic viewpoint. Enhancing curricula: exploring effective curricula practices*, UNITEC Institute of Technology, Auckland: 330-342

Sherwin, B. 2011. *The Origins of Original Art: The stepping stone of originality in art*. Available: <https://fineartviews.com/blog/33317/the-origins-of-original-art-the-stepping-stone-of-originality-in-art> (Accessed 5 November 2019)

Sibbet, D., 2001, May. A graphic facilitation retrospective. In *Adapted from a paper presented at the International Association of Facilitators: The Art and Mastery of Facilitation–Navigating the Future IAF Conference, Minnesota, May 16*: 20

Sibbet, D., 2012. *Visual leaders: New tools for visioning, management, and organization change*. John Wiley & Sons.

Simon, M.K. and Goes, J., 2013. Assumptions, limitations, delimitations, and scope of the study. Retrieved from *dissertationrecipes.com*. Available: <http://www.dissertationrecipes.com/wp-content/uploads/2011/04/limitationscopedelimitation1.pdf> (Accessed 11 September 2019)

Sparkman, D.1995. *Selling graphic design*. New York: Allworth Press

Steinberg, S. 2007. *An introduction to communication studies*. Cape Town: Juta & Company

Stephen, S. 2013. *The five major theories of creativity*. Available:

<https://www.ripperdesignandmultimedia.com/2013/03/26/the-five-major-theories-of-creativity/#:~:text=There%20are%20five%20major%20theories,theories%20is%20the%20%E2%80%9CPerson%E2%80%9D> (Accessed 07 April 2020)

Sternberg, R. J. 1999. *Handbook of creativity*. Cambridge: Cambridge University Press

Streefkerk, R. 2018. *Types of*

*plagiarism*. Available: <https://www.scribbr.com/plagiarism/types-of-plagiarism/> (Accessed 20 July 2020)

Stinger, E. T. 2007. *Action research* 3<sup>rd</sup> ed. California: Sage.

Swanson, G. 2005. Generation Ex: copies and copying in graphic design. *Step Inside Design*, 21(4): 56-59.

Toffah, A.A., Appiah, E. and Boamah, A., 2021. To Use or Not to Use: Analysis of ICT in the Ideation Process of Graphic Design in the Senior High Schools. *Arts and Design Studies*, 90: 24 - 29

Thomas, T. 2017. *How to do your research project: A guide for students*. London: Sage Publications

Törnqvist, G. 2011. *The Geography of Creativity*. Cheltenham: Edward Elgar Publishing Limited

Torrance, E.P. 1972. Can we teach children to think creatively? *The Journal of Creative Behavior*, 6(2): 114-143. Available: <https://doi.org/10.1002/j.2162-6057.1972.tb00923.x> (Accessed 10 May 2020)

Treloar, A., Little, P., Stone, T. and McMillan, M., 2017. Workshops and data collection: Ways to embed clinical complexity in learning events. *Journal of Problem-Based Learning*, 4(1): 15-24.

Tschimmel, K., 2004. A new discipline in design education: cognitive processes in design. In DS 33: Proceedings of E&PDE 2004, the 7th International Conference on Engineering and Product Design Education, Delft, the Netherlands, 02.-03.September. 2004 175-184.

Available:

<https://www.designsociety.org/publication/19590/A+NEW+DISCIPLINE+IN+DESIGN+EDUCATION%3A+COGNITIVE+PROCESSES+IN+DESIGN> (Accessed 11 September 2019)

Tyler, C., Valek, L. and Rowland, R., 2005. Graphic facilitation and large-scale interventions: Supporting dialogue between cultures at a global, multicultural, interfaith event. *The Journal of Applied Behavioral Science*, 41(1): 139-152.

UKEssays. 2018. *Criticism of Action Research*. Available:

<https://www.ukessays.com/essays/education/research-methods-and-critique-action-research-in-education-education-essay.php?vref=1> (Accessed 15 February 2021)

Ukraine Crisis Media Center. 2017. *Lack of motivation is the reason for academic dishonesty-experts*. Available: <https://uacrisis.org/en/54017-motyvatsia> (Accessed 15 February 2021)

Valenza, C. and Adkins, J., 2009. TIMELINES Understanding visual thinking: the history and future of graphic facilitation. *Interactions*, 16(4): 38-43.

Vierling, S. F. 2018. *Stop calling it “cultural appropriation” and call it what it is: Colonialism*. Available: <https://afropunk.com/2018/06/stop-calling-it-cultural-appropriation-and-call-it-what-it-is-colonialism/> (Accessed 30 June 2020)

Vygotsky, L. S. 1978. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press

Wallen, P. 2013. *Design plagiarism: Myth or reality? Society for news design*. Available: <https://www.snd.org/2013/09/design-plagiarism-myth-or-reality/> (Accessed 3 March 2020)

Wang, Y. 2008. University student online plagiarism. *International Journal on E-Learning*. 7(4): 743-757.

Wahl, J. 2018. *Design 101: What is Graphic Design*. Available at: <https://learn.g2crowd.com/what-is-graphic-design> (Accessed 14 Feb. 2019)

Woodmansee, M. and Jaszi, P. 1999. *The Construction of Authorship: Textual Appropriation in Law and Literature*. Durham: Duke University Press

Xiao, Y. 2013. *Understanding Graphic Facilitation*. Available: <https://www.imagethink.net/understanding-graphic-facilitation/> (Accessed 09 July 2020)

Yetman, D. 2020. *What is the Zone of Proximal Development?* Available: <https://www.healthline.com/health/zone-of-proximal-development> (Accessed 09 July 2020)

Your dictionary. 2020a. *Serendipity*. Available: <https://www.yourdictionary.com/serendipity> (Accessed 10 May 2020)

Yu, L. and Nickerson, J.V., 2011, May. Cooks or cobblers? Crowd creativity through combination. In *Proceedings of the SIGCHI conference on human factors in computing systems*: 1393-1402 Available: <https://cseweb.ucsd.edu/~gary/COGS200-fl17/dow2.pdf> (Accessed 07 May 2020)

Zahinsky, A. 2017. *How to research: Bias?* (online video). Available: <https://youtu.be/Arg73lkD62k> (Accessed 07 May 2020)

Zyl, A. and Thomas, A. Academic honesty: Perceptions of millennial university students and the role of moderating variables. *Koers*, 80(1): 1-15

# APPENDICES

## Appendix A



### Letter of Information

Dear Potential participant

I Tendai Rogers Chiwandamira would like to invite you to participate in a research project for my Master of Applied Arts in Graphic Design. Please see the details below of the study that you are asked to participate in. This project will examine current ideation practice among students and the extent to which these may be improved using graphic facilitation. Graphic design students will first participate in two graphic facilitation workshops and later be interviewed. Whereas graphic design lecturers will take part in two interview sessions. If you agree to participate in this study please sign the consent form following:

**Title of the Research Study:** An exploration of the applicability of graphic facilitation in tertiary institutions in South Africa; A case study of second-year graphic design students at Durban University of Technology

**Principal Investigator/s/researcher:** Tendai Chiwandamira, Bachelor of Technology in Graphic Design

**Co-Investigator/s/supervisor/s:** Piers Christian Carey, M Tech (cum laude) and Dr Lockias Chitanana, Doctor of Philosophy - Technology Education

**Brief Introduction and Purpose of the Study:** The research aims to develop and recommend a more successful ideation process that could be adopted by second-year graphic design students to a) increase the originality of design ideas, and b) that will help to reduce plagiarism cases. The study will consist of three action cycles with two workshops, in which both the lecturers and students are the research participants. The cycles will consist of 1) pilot observation study and interview pretesting will be carried out. In which a pilot observation study will be used to identify current ideation practices among this group of students, while the interview pretesting will help refine the interview questions; 2) and 3), two graphic facilitation ideation workshops that students will participate in: the data will be gathered by observation in the pilot study, and after the workshops through interviews that will inform the action cycles of the study. Students in this class will be included or excluded on basis of their voluntary participation. All second-year graphic design students are eligible to participate; they may choose to participate or not participate.

**Outline of the Procedures:**

**For the Students:** The workshop and interview will take approximately 60 minutes each. Participation is voluntary and you are free to withdraw from the

study at any time without giving reasons and without prejudice or any adverse consequences. The information you give will only be used for research purposes. Your identity and individual answers will be kept confidential. You are requested to take part in two graphic facilitation workshops. After the workshop, interviews will be conducted. The pilot study and interview pretesting will take place during a free study period in the graphic design studio room CA0104C or CA0204 or CH0204 at the Durban University of Technology City campus on the 4 May 2020 respectively pending availability and approval. While the two workshops and the interviews are planned to take place in the graphic design studio room CA0104C or CA0204 at the Durban University of Technology City campus on the 1 June and 2 September 2020 respectively pending availability and approval. You will first participate in a graphic facilitation workshop in which you are going to brainstorm ideas for an advertising campaign.

**For the lecturers:** The interview will take approximately 30 minutes. Participation is voluntary and you are free to withdraw from the study at any time without giving reasons and without prejudice or any adverse consequences. The information you give will only be used for research purposes. Your identity and individual answers will be kept confidential. You will be interviewed twice; initially, they will be a pretesting of the interview questions at the beginning of the research. Secondly, the interviews will commence and thirdly, later on, a follow-up interview at the end of the research. Pretesting and the interviews will take place in room CA0104B or CG0202 at the Durban University of Technology City Campus on 7 May, 8 June and 6 November 2020 respectively pending availability and approval.

**Risks or Discomforts to the Participant:** Participation should cause no harm or discomfort to you. You can withdraw from this research at any time.

**Benefits:** The research will result in the production of an academic dissertation. An article from this research will be submitted for publication in the Sage visual communication journal and the journal of educational research. The research will benefit participants with improved ideation techniques, which will help improve graphic design, marks and employability.

**The reason why the Participant May Withdraw from the Study:** There is no reason why you could withdraw from this research, but there will be no adverse consequences for you should you choose to withdraw.

**Remuneration:** You will not receive any monetary or any type of remuneration for this research.

**Costs of the Study:** You will not be expected to cover any costs for the study

**Confidentiality:** The information you give will only be used for research purposes. Your identity and individual answers will be kept confidential. The interview recordings will be stored online on a Google drive for which only the researcher has the password to retrieve them.

**Research-related Injury:** This research presents no risk of no research-related injury or adverse reaction.



**Persons to Contact in the Event of Any Problems or Queries:**

Please contact the researcher Tendai Chiwandamira telephone: 0648 245 042, my supervisors Piers Carey telephone: 031 373 6698/48 or Dr Lockias Chitanana, telephone: +263 54 260337/260404 or the Institutional Research Ethics Administrator at 031 373 2375. Complaints can be reported to the DVC: Research, Moyo on 031 373 2577 or [moyos@dut.ac.za](mailto:moyos@dut.ac.za)



## Consent

### Statement of Agreement to Participate in the Research Study:

I hereby confirm that I have been informed by the researcher,  
**Tendai Chiwandamira** about the nature, conduct, benefits, and risks of this study.

- I have also received read and understood the above- written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- Given the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant	Date	Time	Signature/Right Thumbprint
-----------------------------	------	------	-------------------------------

I, Tendai Rodgers Chiwandamira herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher	Date	Signature
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Full Name of Witness (If applicable)	Date	Signature
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Full Name of Legal Guardian (If applicable)	Date	Signature
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**Please note the following:**

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level

- use Flesch Reading Ease Scores on Microsoft Word), selecting a non-threatening environment for interaction and the availability of peer counselling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumbprint is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. a wrong date or spelling mistake, a new document has to be completed. The incomplete original document has to be kept in the participant's file and not thrown away, and copies thereof must be issued to the participant.

**References:**

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes*:

<http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/>

Department of Health. 2006. *South African Good Clinical Practice Guidelines*. 2nd Ed. Available at: [http://www.nhrec.org.za/?page\\_id=14](http://www.nhrec.org.za/?page_id=14)

## Appendix B

### The Design Brief

#### The Workshop Brief

University: Durban University of Technology

Class: Graphic Design

Students: Second/ Third year

Duration: 60minutes

Facilitator: Tendai Chiwandamira

Materials: Pencils, pen, markers, paper, ruler, and erasers (*not necessary*)

#### THE BRIEF

**Kreative Design Strategy** is a digital advertising agency that was founded in 1999 by Bradin and Maleeka. They have worked on international brands and won numerous awards. With the ever-changing world and negotiating in preparation for the **fourth industrial revolution**, they are giving their agency a new look and feel by rebranding their agency to go fully digital. The task should you choose to accept is to take part in a brainstorming session for their **logo and three adverts**. Since it is an advertising agency, they have given the designer the creative licence to go out and come up with the wildest ideas possible. **Kreative Design Strategy's** catchphrase is **IMAGINATION AND WAY BEYOND**.

#### DELIVERABLES

**1 Logo concept**

**2 Teaser**

**3 Reveal**

**4 Advert**

*(all these are brainstorming activities to just generating concepts no execution involved)*

# Appendix B

## Second-year lecturer's design brief



### FACULTY OF ARTS AND DESIGN

Department of Visual Communication Design

Visual Communication Design

Ref: VCD 202 – 2020 Project A – Short Movie Promotion Campaign.doc

2020	VCD2 – 2020 Project A: Short Movie Promotional Campaign	GROUP A
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**Subject:** Visual Communication Design 202

**Semester:** Y2S1

**ASSESSOR:** Mthandeni Zama | **MODERATORS:** Frank Kalala and Dane Knudsen

**BRIEFING DATE:** 7 January 2020 (Friday - 09:00am)

**PRE-REQUISITE:** Attendance to briefing session on Friday at 08:45am.

**COMPULSORY:** 100% Attendance (Check the TimeTable), and all work to be done in class.

**DEADLINE:** See Flow Chart

**MATERIALS:** Pencil, pen, paper, ruler, eraser, Adobe Suite (Illustrator, InDesign, Photoshop)

### LEARNING OUTCOMES

#### VISUAL COMMUNICATION DESIGN 2

Upon successful completion of this project, the student should be able to:

- Show evidence of being able to do research:  
In order to select and understand a short film, intended message, the appropriate target audience you aim to reach and how to reach them.
- Follow the design process. (*The two listed books – are helpful to understand this process further*):  
*Gavin Ambrose and Paul Harris – Design Thinking*  
*Ellen Lupton and Jennifer Cole Phillips – Graphic Design Thinking – How to Define Problems, Get Ideas and Create Form*  
This will involve mood board(s), concept development through various ideation techniques, scamps and sketches – in order to come up with a design solution.
- Create and execute a campaign to promote a short film by means of clear and appropriate messaging.  
(Here are some examples of messaging through a campaign):  
<https://www.creativeboom.com/inspiration/17-of-the-best-student-campaign-designs/>  
<https://www.behance.net/gallery/88466625/World-Kindness-Day-Coca-Cola-%28Time-Square-Billboard%29>  
<https://www.dove.com/za/stories/campaigns/showus.html>  
<http://www.marklives.com/2017/08/loeries2017-behind-the-award-shows-creative-campaign/>  
This will involve:  
Creating clear messages that are connecting the film to a specific targeted audience.  
Creating an appropriate imagery (type and image) – that is in line with your message.  
Produce a professional case study that clearly communicates your marketing angle in relation to the brief.

## THE BRIEF: Short Movie Promotional Campaign

You have been provided with short movies no longer than 1 minute each. You must watch all of them then you must choose one that you would design the promotional campaign for. Each movie addresses a local social issue in a short and precise manner. You may need to watch your selected movie several times to understand the communicated message, in order to decide on the important aspects that could add value in the communication of your promotional campaign. While a movie or short film is typically promoted through a trailer, a one-minute movie does not accommodate this. Therefore, to promote a one-minute movie, other creative options could be explored.

This is a DUT initiative as the work was done by former Third Year students. Ster-Kinekor is our airing partner, and each movie will be running with adverts and trailers on all weekends from March – June 2020. Since this might a traditional platform (bioskop), we would need to would need to bring the buzz into social media in order to keep the conversation going.

For this brief, you are to conceptualize and prepare a promotional campaign for the purpose of advertising the movie. This should illustrate the theme of the movie. Look at how other designers, filmmakers and communicators successfully communicate or portray their promotional material, in a **consistent** way. The brief is to communicate a message through your design production that will convincingly make an intellectual, emotional or subconscious statement, which will effect or influence your audience (hopefully in an optimistic or positive manner). The aim is to market the video's message.

When you watch and choose the short film for the promotional campaign, consider and establish the following:

1. The key **communication** of the movie.
2. The **Purpose** of the movie and call to action.
3. The **Target audience**, who are you talking to and why – so you may start to prepare how to address them.

The first step is to watch all the movies, choose one that you will develop the campaign for. Understand the message of the movie, the purpose of the movie, and who it is targeted for. You are allowed to use **illustration or photography, or a combination**, choosing a **relevant** technique of your choice to develop the **visuals** for the campaign that **supports your communication**. **Typography** can be used to create a captivating, memorable, and appropriate campaign to promote the film. **Your challenge** is to figure out **how to promote a one-minute film with an unknown cast without giving away the storyline but hinting at the core concept through your messaging**.

**NB:** Photography and images of the cast cannot be used to promote this movie.

## PROCESS REQUIREMENTS:

### Research and Concept Development

- a. Establish the social issue that is addressed in the movie,
- b. Message of the movie in relation to the social issue,
- c. The reason for creating the movie,
- d. Targeted audience and why
- e. develop conceptual ideas and communication goals
- f. Movie title – Creating a unique movie title, that is in line with the story, and tone.
- g. Palette, typography, and layout development

#### DELIVERABLES AND FLOWCHART

No.	DELIVERABLES	DEADLINE
1.	Written Research, Mindmaps and Concept development, Mood board (3 x A3 format) – to explore direction and style.	<b>Tuesday – 11 February</b> <i>(For discussion in class – and to sign register)</i>
2.	Scamps, Thumbnail sketches, artwork development. These show composition, visual hierarchy and text development	<b>Friday – 14 February</b> <i>(For discussion in class – and to sign register)</i>
3.	Revised Mood board, and sketches – from feedback received. Developing the key visuals – Towards executing the Poster	<b>Tuesday – 18 February</b> <i>(For discussion in class – and to sign register)</i>
4.	A3 Poster – CMYK PDF A named folder - Initials - last name <i>(unnamed files and folders will NOT be considered)</i> Folder to include screenshots of Tineye scanning: 1. Title 2. Main image	<b>SUBMIT - Tuesday – 25 February – 12h00</b>
5.	Ster-Kinekor Instagram 3 x Teasers (What is a teaser) Concept development, sketches and direction. Feedback on submitted Posters (Printed).	<b>Friday – 28 February</b> <i>(For discussion in class – and to sign register)</i>
6.	3 x Teasers - 1080px X 1080px, RGB, PNG files – in a named folder.	<b>SUBMIT - Tuesday – 3 March – 12h00</b>
7.	Lesson on Case Study and how to present work using mock-ups	<b>Friday – 6 March – 09h00</b>
8.	1 x Promotional item of your choice. Case study development – Layout and information	<b>Tuesday – 10 March</b> <i>(For discussion in class – and to sign register)</i>
9.	Final <b>Named folder</b> to submit, with the following: 1. Process work – Raw process, notes, digital process – in a correct sequence – as a single multipage A3 PDF. 2. A3 Final Poster – CMYK PDF. 3. Teaser presentation – CMYK PDF 4. Case study – to include Poster, teasers, promo item, Brief and solution paragraphs.	<b>SUBMIT - Friday – 13 March – 10h00</b>

#### ASSESSMENT CRITERIA:

- Have thumbnails been used effectively to show progress and development?
- How effective is the use of design style, in relation to the compiled mood board, and the communication of the message?
- How well are concepts conveyed visually – are they contemporary and captivating?
- Is your message clear, and in line with the theme of the movie?
- Is your message consistent through different elements, to create interest around the movie?
- Is your tone of voice appropriate to your targeted audience?
- Have all the deliverables of the brief completed sufficiently?

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**Any work handed in late will receive a mark of 0%.**

## Third-year lecturer's design brief



### FACULTY OF ARTS AND DESIGN

Department of Visual Communication Design

Graphic Design

Ref: 3RD Year Briefs 2020 007.doc

2020	Project 7: Self-Branding	PDP 302	CDGD 302	DTCN 302
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**SUBJECTS:** Professional GD Practice III | Design Techniques III | Communication Design III |

**ASSESSOR:** Frank Kalala, Dane Knudsen | **MODERATOR:**

**BRIEFING DATE:** 12 Oct 2021 (10:00)

**DIGITAL DEADLINE:** Multiple Deadlines see flowchart

**SOFTWARE:** Photoshop CC | Illustrator CC | InDesign CC | iMovie | After Effects | Premier | QuickTime

007

#### THE BRIEF:

You will soon be saying goodbye to the 3<sup>rd</sup> year team and enter the real design world where deadlines are a lifestyle, not an option, and where nobody gives a flip about your A4 diploma that you have worked hard for over a very long three years. In the real world it is your portfolio that lands you that job. This project will help you develop a concept to promote yourself out there, through print and online channels.

A.	COMMUNICATION DESIGN III	Project 7	CDGD 302
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So here is the brief: you are required to develop a *personal corporate/creative identity*, which must include a *personal logo* and *double sided Business Card* (50mm x 90mm). You can also brand a couple of promotional items that you think are appropriate for your campaign eg. Rendered T-shirt designs and bla bla bla...these things are up to you, but remember it needs to be relevant to your targeted audience.

**LOGO:** Design a logo that is easy to remember, a logo that will best reflect your work, style and personality. You are required to develop a logo that will have a logotype and icon that can be used separately and together, eg. Puma, Nike...

Please check this link. <http://www.draward.com/best-corporate-identity-design-packages-branding-projects/> get inspired.

Presentation is everything.

**PORTFOLIO COVER and Concept for your Portfolio Publication:** Design a cover for your Portfolio Publication (A3 landscape) Template will be supplied. This should tie in with the concept developed for your *CI*, **your entire portfolio should look coherent, from your logo to your business card, Creative CV (infographics), GIF and possibly your exhibition displays;** your entire portfolio should somehow be informed by your core concept.

B.	DESIGN TECHNIQUES III	Project 7	DTCN 302
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**GIF BANNER:** Design a promotional GIF banner (800px x 800px) or any size that you are comfortable with. This can be typographic, illustrative, pictures and/or images that shows your best work in a very impressive way; use your creative visual approach to animate this artwork, use your work in a very interesting way, crop, zoom in, zoom out or tilt it, make it spicy, add text if you wish keep it interesting and short. You have 10 to 15 sec to impress your possible employer. Imagine it as an animated teaser to



promote your talent. If your portfolio was a **movie** this GIF banner would be the **trailer**. This can be sent to potential clients/employers via email with your CV or can be embedded at the bottom of your emails just to fish for their attention.

C.

PROFESSIONAL DESIGN PRACTICE III

Project 7

PDP 302

**CREATIVE CV:** Some of us still enjoy the hard copy, therefore you are required to design a CV (no bigger than A4). This CV needs to be very creative and make use of infographics. This can be achieved by using typography, illustrations and icons. Your colour pallet is still limited by the colours of your brand identity.

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#### LEARNING OUTCOMES:

- Upon successful completion of this project the student should be able to understand how to:
- Research and create a colour and typography moodboard as well as a concept moodboard
- Develop an original idea and concept
- Conceptualize and design a logo based on your work, style and personality
- Tell a story by means of infographics
- Design an icon and understand iconography
- Sell their work or concept by means of good presentation.
- Use typography and layout
- Develop and promote an identity through digital and print
- Understand formatting requirements
- Show and keep consistency throughout your portfolio

**SOME TIPS:** Be mindful of your target market....you are sending things out to design critics who are hard to impress and quick to dismiss. **Forget about thinking out the box. Set the box on fire and let that ignite your imagination. Remember that magic happens here!**

# Appendix C

## Initial Semi-structured Interview Question Guide

(First research participants)

### Graphic design students' semi-structured interview questions.

The interviews will be conducted with the students within the 2<sup>nd</sup> year graphic design studio.

1. What is ideation?
2. In what way do you think ideation is important?
3. What do you think are the reasons for doing mood boards?
4. What do you think are the reasons for doing Scamps?
5. When you start developing your concepts, how much do you refer back to your mood boards?
6. How do you refer and make use of your mood boards?

*These questions are for the pretesting (cycle 1) to establish a baseline. Once it is established the research can commence. With these interview questions, some new questions will pop up dependent on how the research participant answers the questions in the interview. At the end of each cycle (Cycles 2 and 3) ask the same questions.*

(Second research participants)

**Graphic design lecturers' semi-structured interview questions.**

The interviews will be conducted with the lecturers within their offices.

I. What is ideation?

II. In what way do you think ideation is important?

III. What have the students been taught about ideation?

IV. With the current work being handed in by students how do you rate students' innovation in answering the brief out of 10?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Poor				Average					Excellent

V. Why do you say that?

VI. How do you also rate students' ideas in terms of applying the creative process and communicating effectively to the target audience in answering the brief out of 10?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Poor		Fair		Good		Very good			Excellent

VII. Why do you say that?

VIII. What do you think can be improved in the students' ideation and development processes?

*These questions are for the pretesting (cycle 1) to understand what students have been taught about ideation as a baseline. Once it is established the lecturers will be interviewed. With these interview questions, some new questions will pop up dependent on how the research participant answers the questions in the interview. Each research participant will be interviewed, based on these questions. The same interview questions will be used at the end of cycle 3*

# **Appendix D**

## **Amended Pretested Semi-structured Interview Question Guide**

(Primary research participants)

### **Graphic design students' semi-structured interview questions.**

The interviews will be conducted with the students within the 2<sup>nd</sup> year graphic design studio.

1. What is ideation?
2. In what way do you think ideation is important?
3. What do you think are the reasons for doing mood boards?
4. What do you think are the reasons for doing Scamps?
5. When you start developing your concepts, how frequent/often do you refer back to your mood boards?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Never									Every single time

6. In what ways do your mood boards influence the direction of your design work?

7. What is visual plagiarism?

*These questions are for the pretesting (cycle 1) to establish a baseline. Once it is established the research can commence. With these interview questions, some new questions will pop up dependent on how the research participant answers the questions in the interview. At the end of each cycle (Cycles 2 and 3) ask the same questions.*

*(Secondary research participants)*

**Graphic design lecturers' semi-structured interview questions.**

The interviews will be conducted with the lecturers within their offices.

i. What is ideation?

ii. Which year do you Lecture graphic design students?

iii. In what way do you think ideation is important?

iv. Have students been taught the creative process?

v. What have the students been taught about ideation?

vi. With the current work being handed in by students how do you rate students' innovation (creativity) in answering the brief out of 10?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Poor				Average					Excellent

vii. Why do you say that?

viii. How do you also rate students' ideas in terms of applying the creative process and communicating effectively to the target audience in answering the brief out of 10?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Poor		Fair		Good		Very good			Excellent

ix. Why do you say that?

- x. What do you think can be improved in the students' ideation and development processes?
- xi. What is visual plagiarism?
- xii. What do the students know and understand about visual plagiarism?

*These questions are for the pretesting (cycle 1) to understand what students have been taught about ideation as a baseline. Once it is established the lecturers will be interviewed. With these interview questions, some new questions will pop up dependent on how the research participant answers the questions in the interview. Each research participant will be interviewed, based on these questions. The same interview questions will be used at the end of cycle 3.*



## **Appendix E**

### **Cycle 3 Semi-structured Interview Question Guide**

#### **Graphic design students' semi-structured interview questions**

- a) What do you understand about influence; may you please define it?
- b) What do you understand about appropriation; may you please define it?
- c) What do you understand about inspiration; may you please define it?
- d) What is the difference between plagiarism, influence, appropriation and inspiration?
- e) Which one was the idea you came up with?
- f) How did you come up with those ideas?
- g) What did you learn from the workshop?

## Graphic design lecturers' semi-structured interview questions

The interviews will be conducted with the lecturers within their offices.

1. With the work handed in or ideas presented by students in the previous assignment, how do you rate students' innovation (creativity) in answering the brief out of 10?

1	2	3	4	5	6	7	8	9	10
Poor			Average				Excellent		

2. Why do you say that?

3. Looking at all the students' overall work on this current assignment they handed in how do you rate it in comparison to previous work they have handed in in terms of students' creativity in answering the brief?

1	2	4	5	6	7	8
Very much worse	Worse	No changing	Mildly improved	improved	Much improved	Very Much improved

1. Why do you say that?

2. How do you also rate students' ideas in terms of applying the creative process and communicating effectively to the target audience in answering the brief on the current assignment handed in by the students?

1	2	3	4	5	6	7	8	9	10
Poor		Fair		Good		Very good		Excellent	

3. Why do you say that?

4. Looking at all the students' current work that they recently submitted how do you also rate students' ideas in terms of applying the creative process and communicating effectively to the target audience in answering the brief in comparison to all the previously handed in assignments?

1	2	4	5	6	7	8
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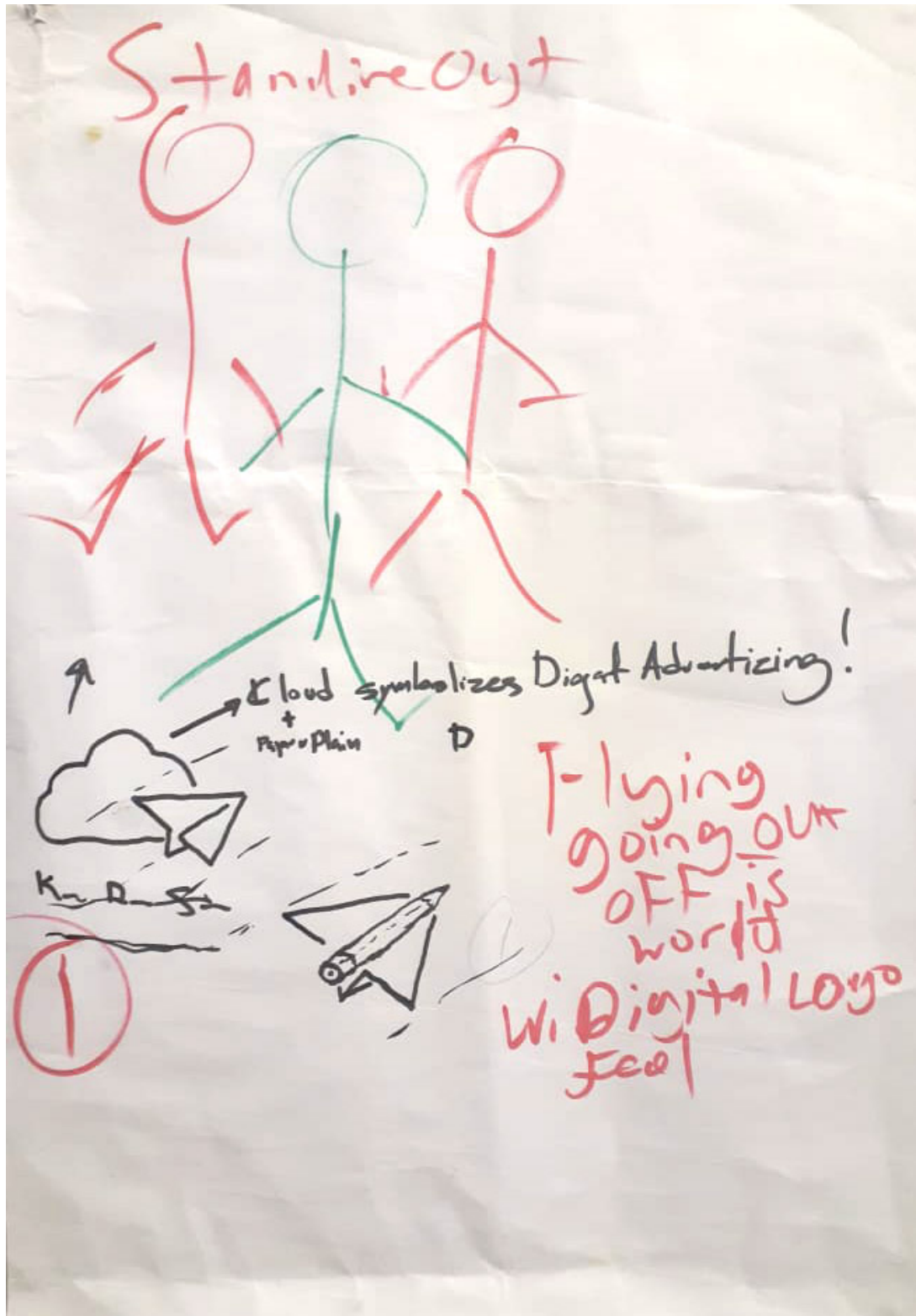
Very much worse	Worse	No changing	Mildly improved	improved	Much improved	Very Much improved
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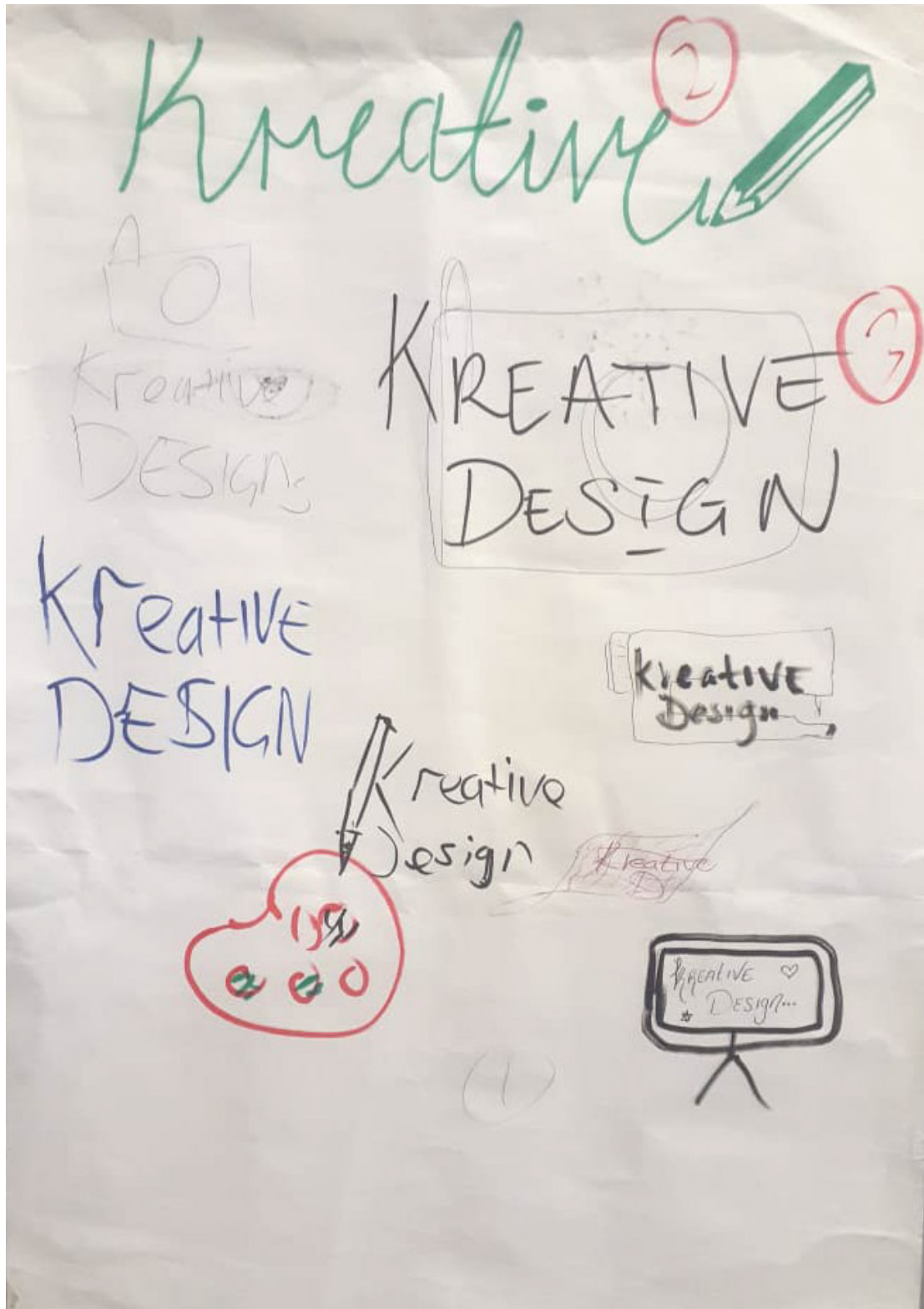
5. Why do you say that?
6. Do you think students understand the difference between plagiarism, influence, appropriation, and inspiration?
7. What do you think can be done to improve students' critical thinking capabilities thereby making them understand the difference between plagiarism, influence, appropriation, and inspiration?

## Appendix F

### Ideas generated

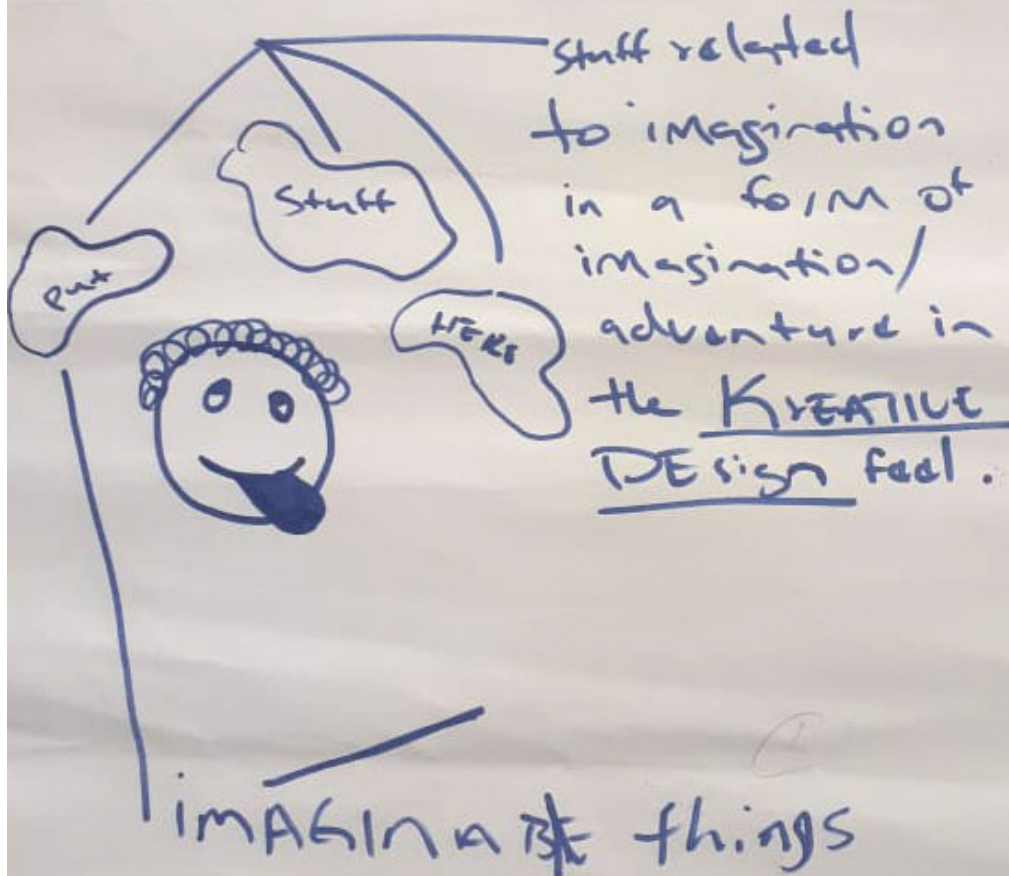
Ideas generated in Cycle 2 by the students

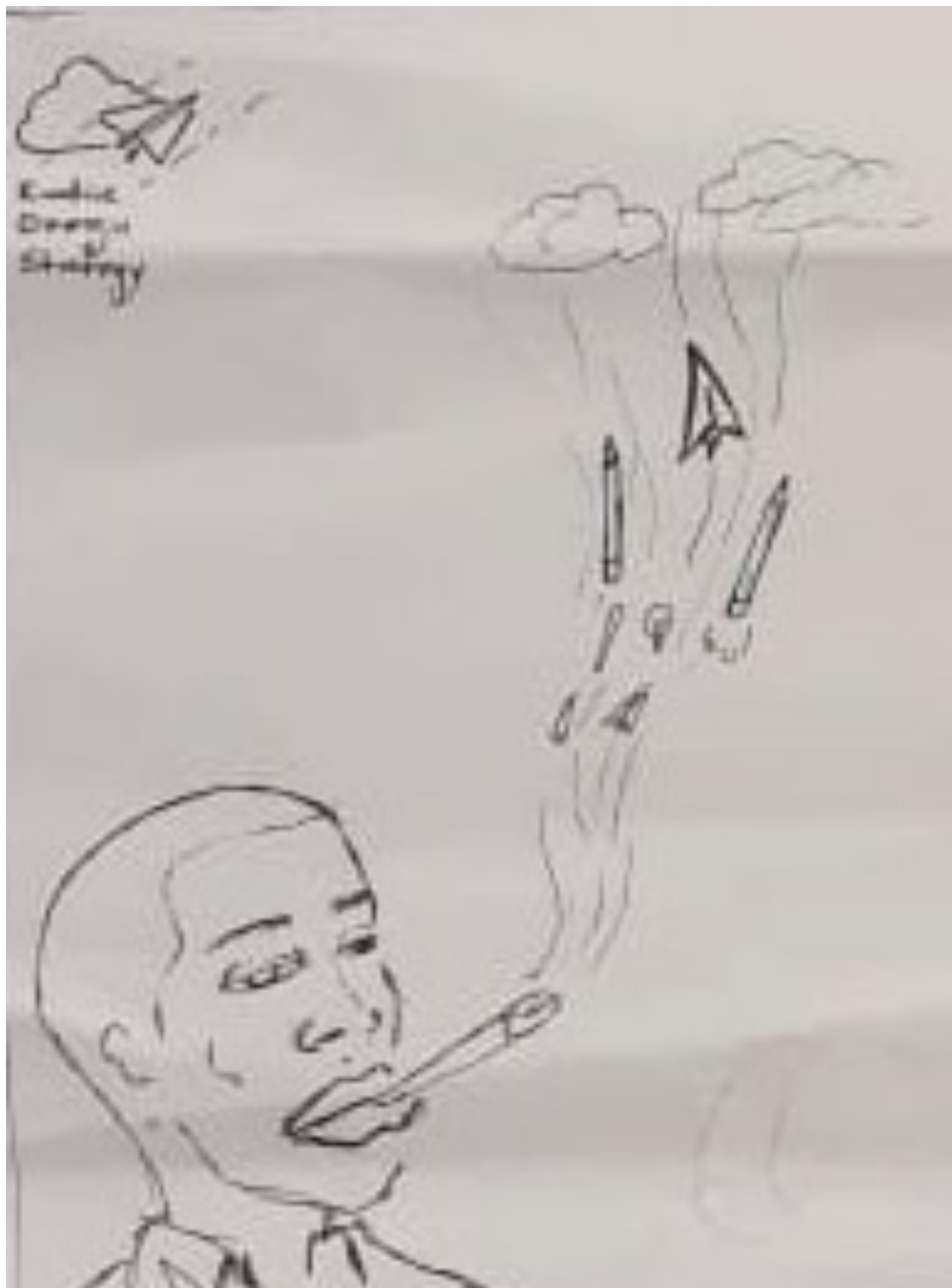




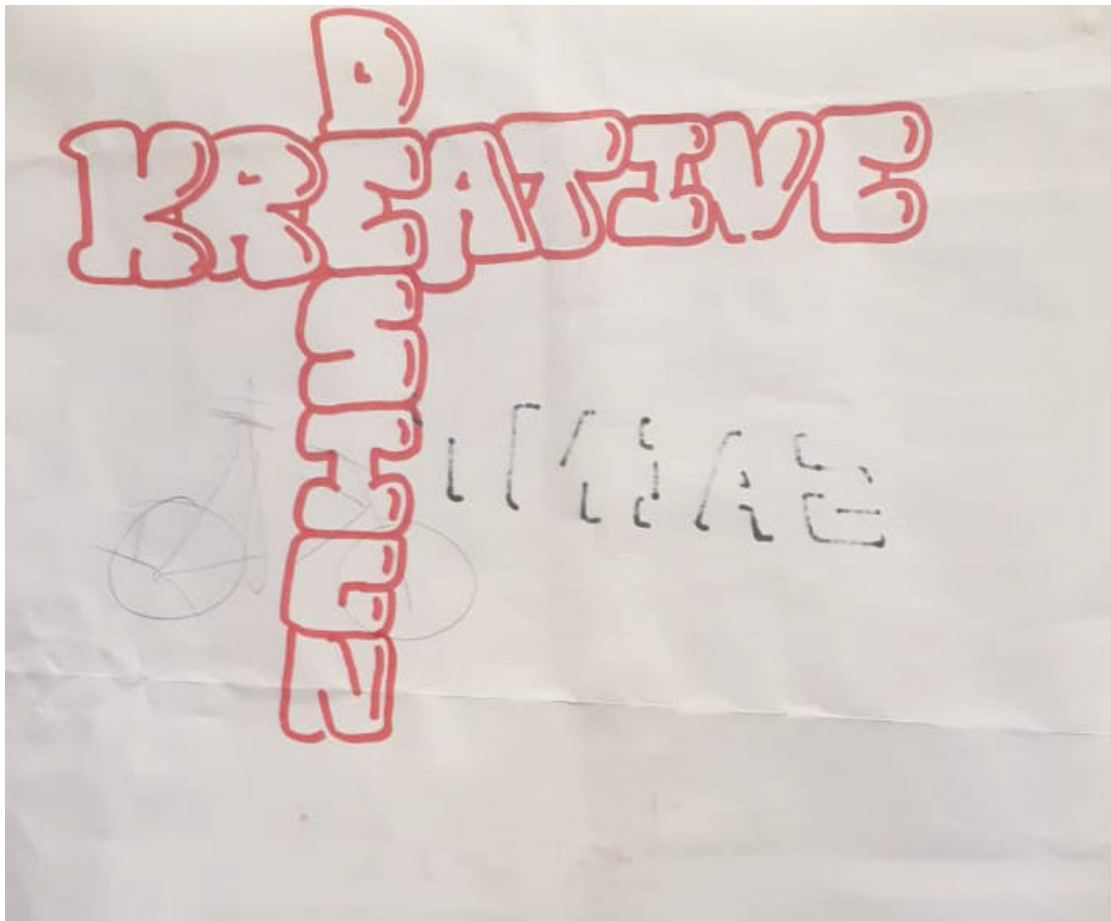
See shape OF F  
Clouds

- Go on adventure  
with e shape











Ideas generated in Cycle 3 by the students

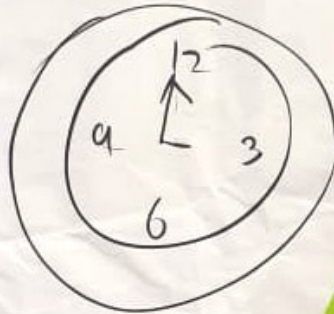


Why is Question  
marked here?



LOOK

Haibo



time  
to think



Stoko



THE  
**BIG**  
IDEA



# IDEATION

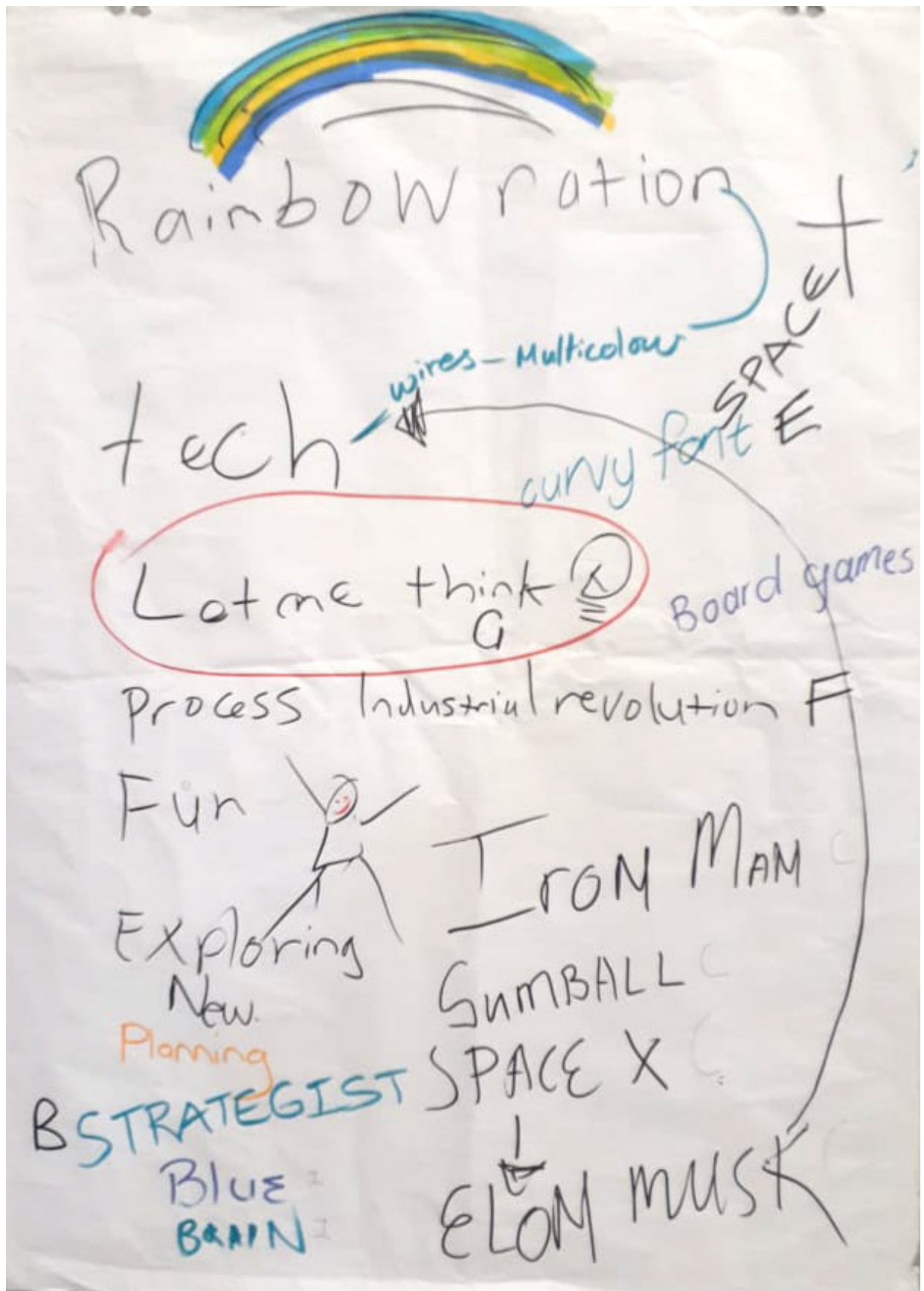
WHAT IS it?

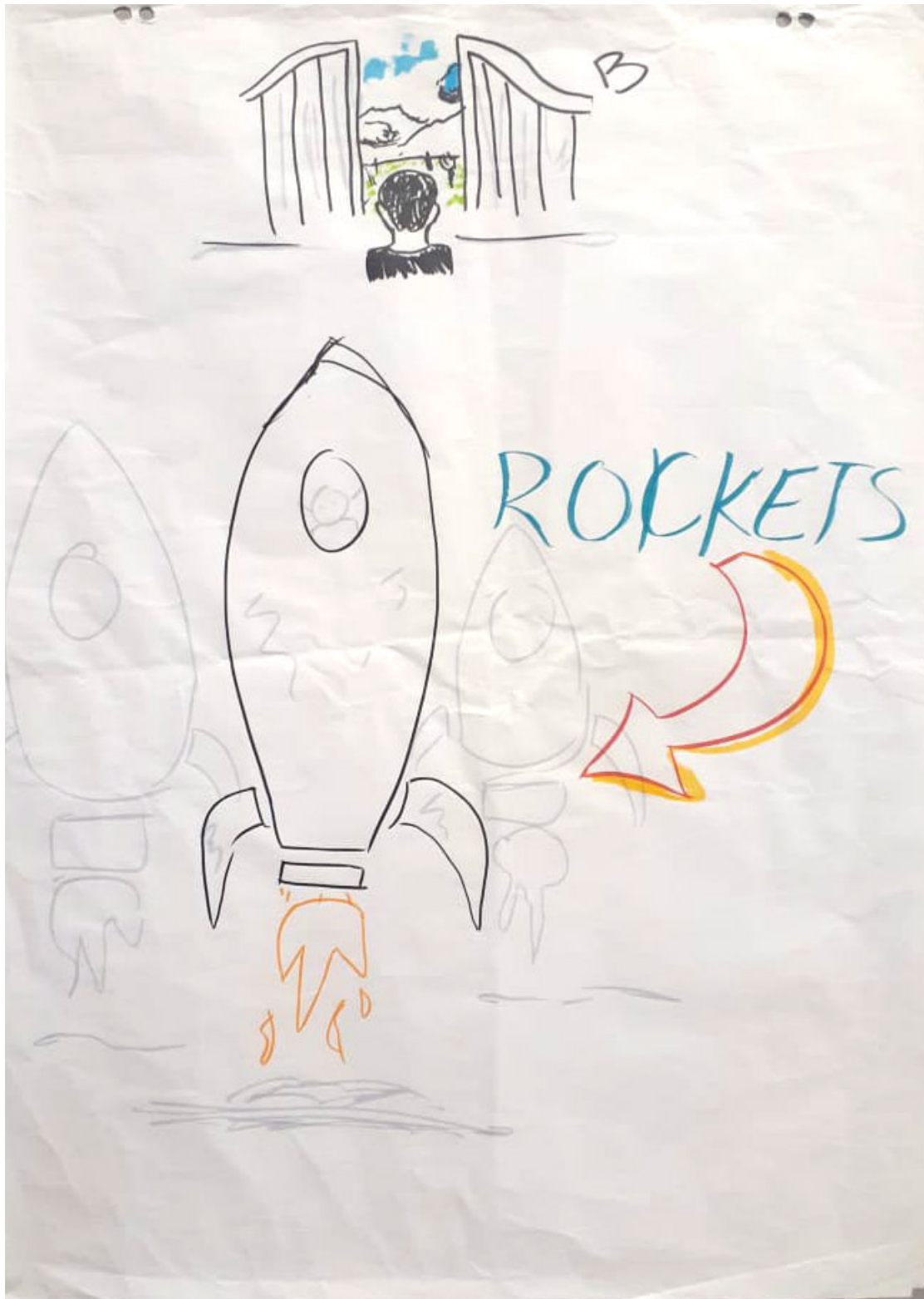
WHY is it important?

THINK  
**BIG**













~~par~~ nuna



popcorn

explosion colour

Head in the  
Cloud



Pizza A

Note book



Hunger

Endless road



Super hero  
Shooting  
to the sky

day dreaming  
reels  
rockets

daydream  
rockets

daydream

Short videos

catch phrases "helping you build your idea"

