The ‘blend’ in blended learning: establishing a balance between face-to-face and online learning in a pattern making and garment construction class

by

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I declare that this dissertation is my own work and has not been submitted for any other degree or examination at any other institution.

Signed: __ Date: 7 April 2020

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ABSTRACT

This study explored the use of blended learning in a fashion design class, working within the constructivist orientation with a mixed methods case study and using a sequential exploratory approach in order to focus on the effectiveness of the blended learning design and how it is experienced by the participants. The case study was based on a group of second year fashion design students from a private design institution in South Africa, for the combined subject, pattern making and garment construction. The purpose of this research was to investigate the ways in which face-to-face learning and online learning could best be blended to facilitate instruction in this particular class. The study focused on establishing what combination of online and face-to-face delivery could be seen to be most effective in achieving the project learning outcomes within the time and resource constraints available for the combined pattern making and garment construction subject. A blended learning curriculum model (Huang, Ma and Zhang, 2008) was used to assist in preparation for the blended learning programme, with online learning delivery being effected by means of Google Classroom, the learning management system recommended by the private design institution.

The sequential exploratory approach involved two projects, so that insights gained from the first project could be applied to modify the blended learning design for the second project, if and as required. Quantitative data were used to establish a baseline of students' prior understanding of blended learning, pattern making and garment construction processes. Qualitative data were collected in the form of interviews, questionnaires and observations, allowing for a descriptive understanding of how students as well as the lecturer (who was the researcher) experienced the blended learning classroom, and how effective that blend was in achieving the desired learning outcomes; opportunities were also offered for reflection. The results revealed that, not only did blended learning delivery need to be applied in a developmental way, with ongoing adjustments to accommodate best teaching/learning practice, but also that different fashion 'briefs' (that is, the tasks involved) might require modifications to the blended learning delivery

design. This suggests that there is no ideal ‘blend’ in blended learning, but that, like other forms of learning, it is exploratory, tentative and constantly evolving.

It is hoped that this study will offer insights into how face-to-face and online learning can be combined to best facilitate the learning process in this particular case, where practical assistance with students’ individual design projects traditionally requires a large amount of the instructional time available. As many vocational university subjects have similar time and resource constraints, particularly in facilitating practical application of theory at a professional standard, it is also hoped that, to some extent, the results will be generalizable to other disciplines.

DECLARATION

I, Luhandra Kirby, hereby declare that this research dissertation is my own work and that all sources I have used or quoted have been indicated and acknowledged by means of references.

I hereby certify that this report has not been submitted for a degree at any other university or institution.

Date: 7 April 2020

Luhandra Kirby

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DEFINITION OF KEY TERMS

Authentic learning: refers to a learning environment that reflects the way in which knowledge would be used in the real world.

Blended learning: refers to the combination of face-to-face instruction and online resources. Blended learning is also known as hybrid learning, project-based learning, mixed mode learning, e-learning, computer mediated learning, and technology enhanced learning.

Brief: is a document which stipulates the specific project outcomes, assessment criteria, project requirements and deliverables.

Case study: refers to the intensive analysis of a unit which is a group of students.

Collaborative learning: promotes the exchange of ideas and participation by each student, working together to share knowledge.

Constructivist orientation: one centred around the idea that reality is socially constructed, and that people construct their own understanding and knowledge through their experiences.

Constructivist pedagogy: is a learner-centred approach to teaching, where the students' needs are at the centre of the pedagogical focus.

Contact time: is the lesson time or the physical lecture.

Digital natives: refers to a generation of students who are native to the digital world of computers and the internet.

Face-to-face classroom: refers to the physical lecture, whereby the lecturer and students have contact with one another for a stipulated time period.

Facilitation: is the process of providing students with the necessary resources, information and support in order for them to fulfil the task rather than the lecturer teaching the students what to do.

Garment construction: refers to the process of sewing a garment.

Google Calendar: is a digital time-management and scheduling calendar.

Google Classroom: is a learning management system (refer to the learning management system definition above).

IP Address: is an Internet Protocol address which is a digital media transport system.

Learning Management System (LMS): is a software application which assists an educational course with the delivery of content, administration, documents, reports and tracking.

Learning model: refers to learning guidelines which assist in the development of a teaching and learning approach, offering descriptions of the methods and procedures involved in learning new skills and knowledge, and, how to engage and encourage the facilitation of learning.

Learning outcome: is a document which identifies what a learner will know and be able to do by the end of a brief.

Mixed methods approach: includes both qualitative and quantitative data collection.

National Qualification Framework (NQF): is a set of principles and guidelines stipulating learners' achievements, enabling a national recognition of acquired skills and knowledge.

Online classroom: in this study refers to a learning environment which is available to the students outside of the face-to-face lesson time. The online classroom makes use of an LMS.

Outline document: is also referred to as a curriculum outline, or course outline. This document specifies the lesson structure.

Pattern making: is the process by which three-dimensional form is redeveloped in two dimension. The shape of the body is transformed by mathematical systems into a series of flat pattern blocks and manipulated using geometry to create pieces for a garment

Pedagogy: refers to the practice of teaching.

Practical skills: in this study refers to skills performed by hand or using equipment, tools or technology which needs guidance.

Professional finishing: refers to the process of completing the construction of a garment. The garment should be pressed (ironed) and all lose threads should be cut. The garment should be presented on a hanger with a swing tag (label).

Reflective learning: refers to the opportunity for students to reflect upon their learning allowing students to make sense of what they are learning and to learn from their experiences for future improvements.

Self-regulated learning (SRL): refers to the students' ability to take charge of their own learning environment by self-regulating, setting goals, managing their time, adapting and strategizing to achieve objectives.

Sequential exploratory approach: This study involved the collection and analysis of data in a sequence in order to build on the initial data.

Session: in this study a session refers to the lesson or lecture time. The students have three sessions a week, one single session and a double, back to back session.

Specification (Spec) sheet: is a technical document with the technical specification of a garment.

Student resistance: refers to students' behaviour when becoming resistant towards an instructional strategy.

Subject: refers to the discipline being taught during a session or face-to-face classroom or contact time.

Technical drawing (TD): is a drawing that visually communicates how a garment functions.

Vocational training: refers to the practical aspects of education in training for a specific career whereby students are required to apply knowledge gained in a formal educational setting in a workplace context.

CHAPTER 1: INTRODUCTION

1.1 Introduction

Each classroom, student, lecturer and subject has its own unique context (Wang and Lindvall 1984: 161), which is why it is important to research the type of blended learning delivery which will be most appropriate to achieve the desired educational outcomes in any given context. In order to create a successful teaching and learning environment, it is not only necessary to know *what* is being taught, but also *who* the students are. These factors determine *how* the teaching and learning environment should be approached. Before the research can explore blended learning, an understanding of the subject under study, as well as the factors that would impact the blend, needs to be explicated, as is done in this chapter. As the pattern making and garment construction course, which is the focus of this study, falls within the ambit of vocational training, this chapter will look at the scope and purpose of such training, as well as the nationally specified outcomes. The delivery of this course is guided and constrained by these contextual factors, and it is therefore crucial to understand how these shape the study. Vocational training prepares students for professional practice, focusing on the practical application of the skills and knowledge required for that profession (Dall'Alba 2009: 34). Pattern making and garment construction are two of the practical components necessary in becoming a Fashion designer. Students are required to master the practical skills involved in becoming a professional, which takes a large amount of time and practise. The students' time spent attending classes is distributed amongst numerous subjects, limiting the time available for pattern making and garment construction, impacting the teaching and learning of the subject. Blended learning delivery was thought to provide a way of making best use of the limited time available by balancing online with face-to-face delivery. The purpose of this research was to determine the exact nature of the blend which might achieve this objective.

1.2 Vocational training

Vocational training, also known as professional training, is the education of skills

and knowledge relevant to specific industries, preparing students for a career based in practical activities (Shrestha 2016: 141). Educators are responsible for preparing students for professional practice, equipping students with the specific knowledge and skills which is applied in practical contexts (Dall'Alba 2009: 34; McLaughlin and Parkinson 2018: 15). Students spend the majority of their time engaged in learning, developing and practising skills in hands on, real life scenarios (Shrestha 2016: 141), in pursuit of learning professional ways of "being" by becoming the professional in question (Dall'Alba 2009: 42). Students should be able to integrate their knowledge and the way they act in pursuit of becoming the professionals, and, once students have completed a course, they should be able to become professionals by performing the relevant skills involved independently (Shrestha 2016: 141). A problem facing vocational training programmes today is the lack of transfer of skills and knowledge due to insufficient time to learn and practise these skills (Shrestha 2016: 142).

The professional practice under study is the process of becoming a Fashion designer, and, in particular, the processes involved in becoming a pattern maker or seamstress. The practical course that the students have enrolled in is a degree programme which covers general design in the first year, followed by two years of specialisation in either fashion, graphic or interior design. The class starts introductory Fashion design subjects at the beginning of the second year, and the focus of this study is on the pattern making and garment construction subject taught in this year.

1.3 Pattern making and garment construction

Before addressing what the literature says about the process of teaching and learning (the *how*), an understanding of *what* is being taught is necessary. The two practical aspects which need to be learnt in order to become a qualified Fashion designer are pattern making and garment construction. Pattern making is the art of designing patterns from which garments can be sewn (constructed) (Datta and Seal 2018: 29). The process of pattern making and garment construction are linked. In order to succeed in garment construction, it is crucial to have a good pattern to start with. However, in order to be a good pattern

maker, one must have a strong awareness of the processes and limitations of garment construction.

1.3.1 Pattern making

Pattern making is the process of creating the shapes and templates that are then used to cut out fabric in order to sew a garment. Almond and Power (2018: 34) explain that pattern making combines knowledge of body measurements and proportions to create a three-dimensional form which fits the human shape. The final two-dimensional pattern shapes must fit onto a three-dimensional form once sewn together in fabric, and thus it is crucial to maintain these body measurements and proportions. The process of redeveloping this three-dimensional form in two-dimension is the development of a pattern (Salo-Mattila 2014: 1). Flat pattern cutting is a form of pattern making where the shape of the body is transformed by mathematical systems into a series of flat pattern blocks (Lindqvist 2013: 36). These 'blocks' are tried and tested by cutting in fabric, sewing them up and fitting them onto a mannequin or model. Once perfected, these blocks have an impeccable fit and can be altered in a variety of ways to create new styles (Datta and Seal 2018: 29). The creation of new styles is a complex activity whereby the aesthetic properties of a design are interpreted and transferred into different contour lines (Avadanei, Filipescu and Ionescu 2015: 528). Herein lies the skill of pattern making, knowing when and how to manipulate flat two-dimensional shapes in order to achieve the desired outcome in three-dimensional fabric. In pattern making, an adjustment as small as three millimetres can make a difference to the final fit of a garment (Aldrich 2008: 5; Defty 2007: 8).

Students often find developing their designs into patterns demanding because their knowledge and skills are insufficient in translating their design into a physical pattern (Hardingham 2016: 97). Many Fashion students use Winifred Aldrich's book, *Metric Pattern Cutting for Womenswear*, as their main pattern making reference (Hardingham 2016: 98), as do the students in this study. The book provides students with the core technical instructions used for pattern making (Aldrich 2008: 5). When the students design a garment for a project, they need

to identify which technical instructions apply to their garment and to translate these pattern making techniques to their unique designs (Almond 2010: 4). This promotes creativity but disrupts the conventional pattern making processes (Almond and Power 2018: 34). In the past the lecturer had found that students struggled to translate the core technical knowledge presented to them in the textbook, to suit their own designs. The students had insufficient experience in practically applying the technical instructions, and, as such, had limited knowledge to draw on in order to understand the written text, and to adapt the instruction. Students need to practise these practical skills in order to expand their understanding, but the visuals and written instructions do not always convey enough information for the students to understand the skill or process. The lecturer has found that students need live demonstrations of a process, in order to assist their understanding of the technical instructions before they can apply it on their own.

1.3.2 Garment construction

Garment construction is the process of stitching a garment together, transforming the two-dimensional fabric pieces into a three-dimensional article of clothing (Sarkar 2015: 89). As such, it is important for designers to have an understanding of how a garment grows from a two-dimensional concept into a three-dimensional garment before starting the construction process (Fischer 2009: 11). When stitching a garment together, there is no one rule to follow (Callanhan, Callanhan and Barry 1938: 3). The types of seams and stitches used are dependent on the style, shape, fabric, and the skillset of the seamstress. In each step of constructing a garment, accuracy is essential, be it in laying the pattern pieces on the fabric, cutting the fabric, and/or transferring the pattern landmarks to the fabric. Once a garment has been assembled it should look professionally finished. All pins, basting stitches, knots, and lose threads should be trimmed off neatly. Good workmanship is important, as all permanent stitches and finishes should be neat, correctly made, and appropriate for the style of garment and fabric. The finished garment should be well pressed and clean.

Garment construction is a complex and challenging process for students to grasp (Lahti 2012: 179). Many students find the concepts difficult because they are

taught as a methodical and complex discipline (Almond and Power 2018: 34). To ensure a successful outcome there needs to be a balance between academic enquiry and practical applications (Almond and Power 2018: 39). Ashdown (2013: 116) states that it can be difficult to convince students who are facing a sewing task for the first time “that they can and should work to gain these skills” in the pursuit of becoming the professional.

At the private institution where the researcher is employed, the pattern making, and garment construction aspects are taught as a combined subject which focuses on both pattern making and garment construction in the same instructional subject, whereas in other institutions these two subjects are taught separately. The combined subject allows students to see their design through from the conceptualisation phase to the final garment. The subject is broken up into a number of projects which are each outlined by a project brief. A “brief” is a document which stipulates the specific project outcomes, assessment criteria, project requirements and deliverables. Every brief for this subject requires students to develop a pattern for a garment that they are going to construct. Individual students have an opportunity to design their own item of clothing within the parameters of the brief which is stipulated by the institution. This means that each student has his/her own learning needs which need to be addressed. Students’ levels of success are assessed according to their ability to meet the requirements of the brief.

The students are required to complete three steps in order to fulfil a brief (these steps are illustrated below in the Figure 1.1, Evolution of a garment). The first step involves the development of a technical drawing presented on a specification sheet. Step two is the pattern making process which begins with a block which is traced out and manipulated into a style analysis. The style analysis is a working pattern which shows all the construction lines of the pattern. The style analysis is traced and transformed into a master pattern. A master pattern comprises the individual pattern pieces and includes seam allowance. These pieces are used to cut the fabric and assist the seamstress in matching pieces together to assemble the garment. The pieces are then sewn together to construct the garment.

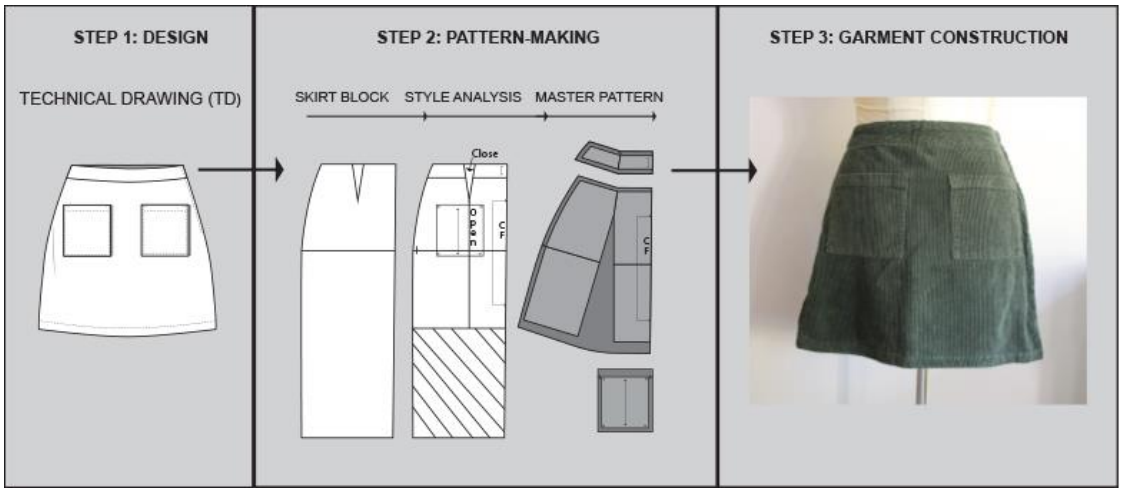


Figure 1.1 Evolution of a garment

1.4 National Qualification Framework (NQF) outcomes

The brief requirements for a project are aligned to the National Qualification Framework (NQF) outcomes. The course that this study focuses on is a Bachelor of Design Degree, which meets the NQF exit level 7 descriptors set by the South African Qualifications Authority (SAQA). The National Qualification Framework (NQF) level 7 descriptor (Appendix D) provides an indication for the learning achievements or outcomes that are appropriate for a degree programme (South Africa 2012: 5). These exit descriptors are true for graduating students. However, this study focuses on a second-year pattern making and garment construction class which is working towards achieving these descriptors. One could assume that second year students should meet the NQF level 6 descriptors (South Africa 2012: 9) by the end of that year (Appendix D). Some of the key descriptors that the students should be striving to achieve are the ability to demonstrate: *detailed knowledge* on the main areas of the field of study; an *understanding* of different types of knowledge; the ability to evaluate, select and *apply* appropriate methods, procedures or techniques; and to identify, analyse and *problem solve* in unfamiliar contexts (South Africa 2012: 9).

The NQF level 7 descriptor states that degree candidates should be able to *manage their own learning* and take *responsibility* for their own work. These two traits are key attributes in becoming a degree student. The structure of the notional hours stipulated by the Department of Higher Education consists of both

face-to-face contact time and independent learning. A NQF level 7 degree is made up of 120 credits per year (South Africa 2002: 45), and one credit is ten notional hours. Notional learning hours consist of face-to-face contact time with a lecturer, or independent learning by studying, completing assignments and assessments (South Africa 2001: 59). A full-time degree programme is made up of 30 weeks, which means that a student should be spending 40 hours a week on his/her studies (South Africa 2001: 59).

1.5 Constraints caused by limited contact time

At the private institution, where this study took place, the 40 notional hours consisted of 20 hours of face-to-face contact time and 20 hours of independent learning per week. The pattern making and garment construction class were limited to 5 hours and 25 minutes of face-to-face contact time a week. This was broken up into 1 hour and 45-minute sessions which occurred twice a week, as a single session and a double session. The institution recommended that students spent the same amount of time completing self-study as they did attending lectures. Given that the pattern making, and garment construction subject consisted of 5 hours and 25-minutes of contact time a week, the students should have been doing an average of 5 hours of self-study a week.

Teaching a practical subject such as pattern making and garment construction requires a lecturer to demonstrate the relative skills and techniques for the subject (Hampton 2002: 83), which takes up a large portion of the contact time. As two different types of instructional content need to be delivered during the given contact time, the students have less time to master the skills of each construction process. Teaching practical subjects entails the presentation of necessary knowledge and skills, and requires opportunities for their application (Dall'Alba 2009: 34). The given time did not allow the lecturer to demonstrate the new skills and techniques needed to fulfil the stipulated project briefs, and for the students to apply the newly acquired knowledge and skills to their assignments. The lecturer (as the researcher) needed to reconsider her use of the given contact time, using the time more efficiently to allow students to practise their skills in the

classroom where they could be guided by the lecturer, rather than for homework, where they worked alone, without assistance.

Limited contact time also impacts the opportunity for students to follow the process and to repeat the skills (Hampton 2002: 83), to reinforce their learning (Van der Merwe *et al.* 2015: 12). This is hugely problematic in teaching a professional discipline like pattern making and garment construction, where knowledge is made useful only when students are able to contextualise it through application (Collins 1988: 2; Paulins and Moeller 2017: 9). The curriculum outline meant (in the case of this study) that students had a vast amount to learn during the limited contact time. A traditional face-to-face teaching delivery had proved inefficient in the lecturer's experience, as students were unable to repeat the skills to a professional standard with industry accuracy when they completed their assignments at home, without any assistance.

1.6 Students as "digital natives"

The section above discussed the subject being taught, but equally important is who is being taught. Students are unique, and learning and teaching needs to adapt to the specific context and to the specific students (Wang and Lindvall 1984: 161). The section below gives an overview of the type of student who took part in this study and their learning preferences.

Students who are entering tertiary institutions today are not the same students as the past (Cornu 2011: 2). The transformation within higher education institutions should "reflect the changes that are taking place in our society" (South Africa 1997: 2). Today's students cannot be taught in the same way as past students (Cornu 2011: 8), as technology has had a profound impact on the lives of students, changing the way they communicate, create and learn (Helsper and Eynon 2010: 503). Educators have to rethink their teaching or pedagogy to appeal to the "digital natives". Prensky (2001: 2) defines digital natives as a generation who are native to the digital world of computers and the internet.

There is a large debate around Prensky's definition and whether this is an accurate description of all students; more importantly, whether this is an accurate

description of South African students. Thinyane (2010: 412) compiled a study to explore the digital natives in two South African Universities. He argues that within South Africa, students may have had access to technology, but, for some, their first encounter with technology was in university. Almost a decade ago, Thinyane found that the term digital native was not a description of all South African students. He did, however, agree with the notion of Palfrey and Gasser (2011: 15) that there was a population of digital natives amongst the elite. In a more recent study conducted at the Durban University of Technology researchers Cavanagh and Peté (2017: 1502) describe a first year pattern making class in a Fashion design program as digital natives based on the age of the participant, as the majority of the group were below the age of 23. The participants in this current study are 19 to 26 years old and have completed a year of design before specialising in Fashion design in their second year. It can be argued that the students qualify as digital natives due to their exposure to technology during their first year as well as the access to their own laptops and Wi-Fi.

Digital natives prefer to receive information at a faster pace than previous students, favouring multi-tasking and graphics over text (Prensky 2001: 3; Filho, Gammarano and Barreto 2019: 4). In contrast, their educators may not be native to this digital world, and Prensky (2001: 3) defines them as digital immigrants. As they are not themselves digital natives (Nelissen and Van den Bulck 2018: 3), many teachers assume that students are the same as they have always been, the same as the teachers were as students. Students should (they assume) be able to learn in the same manner as the teacher was taught. Digital immigrants choose to teach “slowly, step-by-step, one thing at a time” (Prensky 2001: 3). Note that the lecturer conducting this research is a digital immigrant, as she was not raised with technology. Helsper and Eynon (2010: 504) describe the characteristics of digital immigrants as individuals who do not rely on the internet for information, and who prefer printing out documents instead of viewing them on screen. As a digital immigrant, the lecturer conducted this study needed to align her teaching style to appeal to the digital natives rather than her own teaching/learning experiences or preferences.

1.7 Aims and scope of project

The private institution provided the outlines and the content for the subject, and the lecturer could not attempt to restructure or adjust the curriculum in any way. The focus for this study is, therefore, on the delivery of the content. Through this study, the researcher (as lecturer) hoped to improve the quality of her teaching practise by improving her delivery, making better use of the face-to-face contact time and the independent study time. Blended learning delivery was chosen as the option, as the private institution where this study took place had recently started to encourage the use of blended learning.

Research indicates that current students cannot be taught in the same way as past students (Cornu 2011: 8), as technology has had a profound impact on students (Helsper and Eynon 2010: 503). Educators need to align their pedagogy and their use of technology to benefit the students' learning (Van den Berg, Verster and Collett 2018: 441). One way of incorporating emerging technologies is to use blended learning. Blended learning mixes traditional face-to-face learning and online learning, depending on the context, learners and content (Swartz, Gachago and Belford 2018: 52). The incorporation of blended learning requires educators to introduce and test new teaching methodologies (Van den Berg, Verster and Collett 2018: 442). In this study, blended learning refers to a delivery method combining face-to-face instruction with online resources (Adams *et al.* 2017: 18; Oliver 2018: 1; Wang, Zuo and Yang 2018: 20). The blended learning design must aim to establish the blend, that is, how much content will be taught face-to-face and how much must be taught online (Van der Merwe *et al.* 2015: 11).

In 2001, Julian and Boone (Carman 2005: 1) stated that blended learning ensures the widest impact of learning experiences whilst optimizing productivity and delivering value to students. It has been established that blended learning benefits students (Osguthorpe and Graham 2003: 227; Dennis *et al.* 2006: 231; Graham 2006: 58; Ziob and Mosher 2006: 183; Van der Merwe *et al.* 2015: 11). However, this study aimed to understand how face-to-face and online learning should be blended to enrich learning. Given the limited face-to-face contact time

within the pattern making and garment construction class, the research explored how combining face-to-face and online delivery might result in an effective instructional blend.

1.7.1 Aim

The aim of the study was to design a blended learning approach which blended face-to-face with online learning in order to achieve the balance that optimised the teaching and learning processes for the pattern making and garment construction subject for second year students at a private institution in South Africa.

1.7.2 Objectives

1) To design a blended learning approach for pattern making and garment construction which made the best use of both face-to-face and online delivery to facilitate the learning process.
2) To establish the extent to which the blended learning approach for pattern making and garment construction facilitated students in successfully meeting the requirements of the project brief(s).
3) To determine how the blended learning approach was experienced by the lecturer and the students in terms of its facilitation of the teaching and learning process.

1.7.3 Critical Questions

The following critical questions were used to guide the inquiry in ascertaining how a blended learning approach might be designed to optimise the teaching and learning processes for the pattern making and garment construction class:

1) How can blended learning be defined?

2) What can a balanced approach for teaching and learning in the context of the pattern making and garment construction class consist of?

3) What are the results of applying the proposed blended learning delivery in the pattern making and garment construction class:

   in terms of achieving the requirements of the project brief(s)?

   in terms of how this is experienced by the students and the facilitator?

1.8 Purpose and scope of the research

The study explored the use of blended learning in a Fashion design class, working within the constructivist orientation (Heinze 2008) and using a case study approach to focus on the effectiveness of the blended learning design (Bonk and Graham 2006) and how it was experienced by the participants. The purpose of this research was to investigate the balance of face-to-face learning and online learning used for instruction in this particular class. The online learning platform used was Google Classroom. The aim was to establish what type of blended delivery was required to assist in achieving the project learning outcomes within the time and resources available. Mixed method data were collected in the form of questionnaires, observations and interviews, allowing for a descriptive understanding of how students as well as the lecturer experienced the blended learning classroom and the effectiveness of the blend in achieving the learning outcomes. It was hoped that this research would establish how face-to-face and online learning can be combined to best facilitate the learning process in this particular case, where practical assistance with students' individual design projects traditionally require a large amount of the instructional time available.

1.9 Potential value of the research

Blended learning programmes are easier to design when the instructor has a longer period available to refine the blended delivery design, as well as more choice in instructional content (Benson, Anderson and Ooms 2011: 143) As the subject involved in this study had tight deadlines and pre-determined instructional content, the focus was on the nature of the blend between online and face-to-face delivery which might best achieve the desired outcomes. It is thought that this study might prove useful to university instructors, most of whom are faced with similarly tight deadlines and pre-determined content, by showing them how

the time and content constraints are not necessarily barriers but can be transformed by means of a creative blended delivery. The creativity is thought to lie in maximising the benefits of both online and face-to-face delivery while compensating for their shortcomings by achieving a workable blend. This study modelled a process whereby a workable blend might be achieved.

1.10 Ethical considerations

The students who participated in the study did so voluntarily. The participants were provided with an information and consent letter (Appendix A Letter of Information and Letter of Consent). The inquiry was anonymous to protect the privacy of the students and to ensure that the teacher-student relationship was not compromised (Camp 2011: 1). The questionnaires were completed digitally and submitted through the online platform Google Forms, which allowed for anonymity by not collecting the participants' email addresses or IP addresses. The interviews were conducted by a third party who transcribed the information verbatim and protected the students' privacy through assigning pseudonyms and typing the transcripts out before giving the researcher access to the data. This ensured that students were not identified by their handwriting or names, and their responses could not be traced back to them individually. The lecturer's approach for this academic subject included blended learning, but only students who agreed to participate in the study were observed. Pseudonyms (false names) were used in all written documents to protect the identity of all participants. Ethical clearance was obtained from the Durban University of Technology's Institutional Research Ethics Committee (IREC; see Appendix A for IREC clearance letter) and Gatekeeper's permission was obtained from the private institution (see Appendix A, Gatekeeper's permission).

1.11 Delimitations and limitations

The study was delimited to this specific case study. The result focused on the 2019 cohort of students and did not include the opinions of past students, nor students from the institution's other campuses. The study was also limited by the number of enrolments within the private institution where it took place. Conclusions cannot be generalised widely for future classes because of the

qualitative approach used. However, they could be used as a benchmark on which future blended learning delivery approaches could be based.

1.12 Conclusion

This chapter gave context to the study by providing an explanation of the professional practice under study and offering insight into the practice of pattern making and garment construction. A discussion of the students in today's classroom provides clarity on their learning preferences. The following chapter, the literature review, will explore the relevant literature from a variety of sources on blended learning. An explanation of traditional face-to-face and online learning environments is offered to provide an understanding of the blend of these two environments. A suitable pedagogy for teaching practical subjects is explored, as well as teaching approaches which aligns with the pedagogical focus. These include the flipped classroom, authentic learning, reflective learning, and students' resistance. The chapter on research design will provide a record of the research methods and how the research methods were implemented in the study. The Research Findings chapter will detail the results of the questionnaire, observations, and interviews for each project as well as how the data has been analysed. The Conclusion and Recommendations chapter will draw conclusions from the data that has been collected and will make recommendations for future 'blends' of blended learning.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter 2 gives an account of blended learning, the teaching and learning approach proposed for the research project, as it is thought to have appeal for today's students (digital natives). Before dealing with blended learning, the two learning environments that make up the blend, traditional face-to-face and online delivery, are discussed, in order to identify the strengths and weaknesses of each approach. This provides a rationale as to why these learning environments should be blended, namely, to exploit the strengths and diffuse the weaknesses of each delivery method. The chapter then goes on to describe blended learning delivery in more detail, and the ways in which the learning environments might be blended in order to create an effective blend, optimising the students' chances of success. The strategy of the 'flipped classroom' is also discussed. Next, the pedagogical approach chosen for the pattern making and garment construction module is discussed, namely constructivist pedagogy, as well as the learning models which align with it: reflective learning, collaborative learning, and authentic learning. The issue of students' resistance to new learning approaches is then discussed, with some ideas as to how to overcome this resistance. Finally, the chapter describes the blended learning curriculum (BLC) model which assists in the developing a blended learning classroom by determining the aspects which should be taught face-to-face and online, and how to approach these activities.

2.2 Overview of blended learning delivery

There are many different definitions of blended learning, but for the purpose of this study, blended learning is defined as the combination of face-to-face instruction and online resources (Van der Merwe *et al*. 2015: 11; Heinze 2008: 35), and is and is considered to be one of the most practical and advantageous approaches to teaching today (Charitopoulos *et al.* 2017: 2). There are many terms used to describe the online delivery of content, these include e-learning (Arkorful and Abaidoo 2014: 397), computer mediated learning (CML) (Elbeck

and Mandernach 2009: 2), technology enhanced learning (TEL) (Goodyear and Retails 2010: 8), and online learning (Bakia, Yukie and Lasseter 2012: 8). At the core of each of these terms is the idea that technology is used to enhance the educational delivery. For the purpose of the study, the researcher will use the term online learning.

As blended learning is considered to be a highly effective and flexible use of time (Wang, Zuo and Yang 2018: 20), it is particularly relevant in terms of its application in this study to address the time constraints affecting the pattern making and garment construction module. This is because a blended approach can be used to improve the limited contact time in traditional face-to-face education (Yick *et al.* 2018: 180) by supplementing it with online involvement, merging traditional learning environments and self-regulated online learning environments (Van der Merwe *et al.* 2015: 11). Moreover, the blended learning approach allows students the opportunity to engage with both face-to-face learning experiences and online learning experiences (Charitopoulos *et al.* 2017: 6). Before exploring blended learning in more depth, this chapter will discuss face-to-face and online learning delivery in order to highlight the advantages and disadvantages of either approach. Blended learning can overcome the limitations of these approaches (Alammary, Carbone and Sheard 2016: 1) by taking advantage of the strengths of both (Graham 2006: 58; Charitopoulos *et al.* 2017: 1).

2.3 Traditional face-to-face delivery

Recommended use of face-to-face learning (often) takes the form of the lecturer presenting a lecture, an example and homework (Mason, Shuman and Cook 2013: 430). The lecturing style is teacher-centred (Graham 2006: 53), focusing on the teacher and his/her teaching style (Heinze 2008: 19). The teacher is seen as the *expert* (Heinze 2008: 19), the *knower* and the source of all knowledge (Tudor 1993: 24), bestowing his/her knowledge upon students (Mark 2011: 25) by presenting expert examples on a topic to students (Son, Sun and Lee 2018: 129). The underlying assumption is that all students learn by listening, and learn at the same pace (Schwerdt and Wuppermann 2011: 366).

Students often disengage during traditional-style lecturing owing to the fact that it does not accommodate their learning styles. The students' preference towards fast paced approaches (Prensky 2001: 3) often leads to an inability to stay engaged for long periods of time, which means students become distracted easily (Schmidt *et al.* 2015: 13). Schmidt *et al.* (2015: 13) suggest that the traditional lecturing style in higher education no longer works. Scott (2015: 2) describes students as lacking motivation, disengaging, having learning styles not catered for by the traditional approach, and thus lacking the necessary preparation for life and work which higher education is supposed to provide.

During face-to-face contact time, educators using a traditional approach usually present examples for students to follow and require them to repeat the processes demonstrated (Donkor 2010: 97). Students are thus not learning transferable skills; they are learning knowledge which focuses on the process (the how), rather than conceptual knowledge (the why) (Stevenson 2001: 654; Mann and Enderson 2017: 16). Assessment, then, focuses on the students' ability to remember and recreate previously taught procedures, rather than assessing understanding (Bransford *et al.* 2000: 51). Students who are taught in this manner often struggle to apply their knowledge in different situations because they lack the understanding of the 'why' (Cavanagh 2018: 198).

Lecturers are obliged to teach in a teacher-centric way (Emaliana 2017: 60) because lecture time has become limited (Schmidt *et al.* 2015: 13). They therefore have to summarise topics rather than discussing topics in sufficient detail (Schmidt *et al.* 2015: 13), giving students "little opportunity for interaction, hands-on learning or practise" (Alammary, Carbone and Sheard 2016: 2). At the same time, students have started to rely heavily on the information presented to them rather than consulting their textbooks (Schmidt *et al.* 2015: 13; Hartman, Townsend and Jackson 2019: 1). The students' knowledge has therefore become limited to the information necessary to fulfil a task rather than the information necessary for life (Schmidt *et al.* 2015: 13), leading to graduates who do not know how to think critically (Mann and Enderson 2017: 16). As mentioned in the previous chapter, students taking part in a degree programme need to be able to think critically, demonstrating the *ability to evaluate, select and apply*

appropriate methods, procedures or techniques, to identify, analyse and problem solve in unfamiliar contexts (South Africa 2012: 9). When students know only enough to fulfil a task, their knowledge becomes shallow, resulting in an inability to integrate their knowledge in other contexts and in real life. In terms of relevance to this study, the traditional face-to-face approach does not foster the development of the professional theory and skills the Fashion students need, hindering them in their pursuit to become Fashion designers.

Nevertheless, face-to-face learning has attributes which have a positive impact on students' learning, having the ability to enrich learning by providing support and socialisation. During contact time, the lecturer and students can interact with one another (Dennis *et al.* 2006: 231; Balaji and Chakrabarti 2010: 27; Van der Merwe *et al.* 2015: 12), promoting solidarity, a sense of community (Sen 2011: 107; Yick *et al.* 2018: 180), and belonging to a team (Charitopoulos *et al.* 2017: 2). Today's students need to feel this sense of belonging in order to engage, and studies of "Net Generation learners" have revealed a preference for face-to-face experiential learning, team work and social networking (Brown 2005: 12.3).

2.4 Online Learning

Today's students are far more 'techno-savvy' (Bhorat 2014: 173) than previous generations of students, making online learning an appropriate environment for engaging (and maintaining) their involvement:

> The Millennial generation is the most computer literate generation to enter the workforce. Also known as the Net Generation, those born from 1981- 2001 have been raised in an era of instant access. Their learning and communication style is through multi-media. The common method of contact is text messaging and instant messaging as well as cell phones. Learning has even moved into web based tools such as web-ct, online courses, online journals and i-pod downloads (Nicholas 2008: 1).

This section will focus on environments where students learn solely online (Lonka *et al.* 2019: 33). There are many terms used to describe the online delivery of content, amongst others: e-learning (Arkorful and Abaidoo 2014: 397), computer mediated learning (CML) (Elbeck and Mandernach 2009: 2), technology

enhanced learning (TEL) (Goodyear and Retalis 2010: 8), and online learning (Bakia *et al.* 2012: 1). At the core of each of these terms is the idea that technology is used to enhance educational delivery. For the purposes of the study, the term online learning will be used.

Online learning courses appeal to students because of their interactive features and the multimedia aspects including online materials and videos (Charitopoulos *et al.* 2017: 2). However, students can lose interest due the lack of face-to-face interaction, which can leave students feeling isolated and dissatisfied (Yick *et al.* 2018: 179). To overcome this, appropriate technologies need to be introduced which encourage interaction amongst online classmates (Gordon 2014: 6). Castaño-Muñoz, Duart and Sancho-Vinuesa (2014: 157) found that, in order to maximise the time spent studying online, students need to interact with one another during the learning process rather than searching for information individually, which can lead to isolation. Thus the online classroom should not be focused only on creating a platform where students can view and search for additional content (Castaño-Muñoz, Duart and Sancho-Vinuesa 2014: 157); rather, the focus should be centred around incorporating technology to promote interactive learning (Raiyn 2014: 14).

This means that online learning courses which have interactive features as well as multimedia aspects, including online materials and video, will appeal to students (Charitopoulos *et al.* 2017: 2). Thus, it is important in any online learning design to include ways for students to interact with not only the content, but also the educator and each other. The online classroom should not become a repository where students only view and search for additional content (Castaño-Muñoz, Duart and Sancho-Vinuesa 2014: 157), but a collaborative experience. To overcome a lack of interaction, appropriate technologies can to be introduced which encourage interaction amongst online classmates (Gordon 2014: 6), such as discussion forums, collaborative tasks like wiki, shared blog posts and interactive social media such as WhatsApp which have the immediacy of face-to-face interaction as well as recorded speech options. In order to keep students' interest, the focus of the online classroom should be centred around incorporating technology which promotes interactive learning, to improve the student's learning

(Raiyn 2014: 14), and not ‘technology for technology’s sake’ (Bozalek and Ng’ambi 2015: 3).

The online learning environment has the advantage of allowing students to work at their own pace, asynchronous to the rest of the class (Dennis *et al.* 2006: 232; Gedik, Kiraz and Ozden 2012: 103; Gilbert 2015: 22; Charitopoulos *et al.* 2017: 2). On the other hand, online learning does give the students additional responsibilities and autonomy, encouraging them to self-manage their learning process (Charitopoulos *et al.* 2017: 6). Some struggle with “time management, the increased workload, cultural and personal barriers, such as familial and career pressures" (Gedik, Kiraz and Ozden 2012: 103). This means that students accustomed to traditional college lecturing, where content is ‘dished out’, and students adopt a more passive and dependent role, may not only initially resist online learning but find it highly stressful, as occurred in this study.

The online classroom allows the lecturer to upload new material, give students assignments, keep them updated, communicate with them and answer online questions (Charitopoulos *et al.* 2017: 6). When considering the teaching practises for an online classroom, many educators simply adapt the face-to-face contact modes. However, it is not as simple as this because teaching is not a “one size fits all” approach (Gillett-Swan 2017: 21). Educators should consider adapting and differentiating their approach to accommodate different learners and different contexts (Gillett-Swan 2017: 21). The online classroom allows the students to get immediate and focused feedback as well as discussions and clarification from lecturers (Charitopoulos *et al.* 2017: 2), and the flexibility of the online classroom (El Mansour and Mupinga 2007: 244), allows lecturers to transform students’ errors into opportunities for discussion and clarification (Charitopoulos *et al.* 2017: 2).

The students’ engagement and achievements can be influenced by many factors (Yick *et al.* 2018: 178). Studies on online education have shown that students who learn in an online setting perform equally as well as students who learn in traditional face-to-face environments (Allen *et al.* 2002: 95; Kuo *et al.* 2014: 35), and there has been little evidence to suggest that there is a significant difference

between the effectiveness of online learning environments and traditional face-to-face lectures. Some studies suggest that students who are positive about technology, and who engage and interact in face-to-face lectures will also be highly involved in online learning environments (Brooks *et al.* 2016: 139). However, Sun and Rueda (2012: 197) found that students who are reluctant to self-manage and engage in self-regulated learning (SRL) are unsatisfied with online learning and can become less engaged and perform poorly.

The above points suggest that the facilitator must find a learning platform which allows students to engage, participate and contribute to the learning experience, while effectively encouraging and developing a sense of community. The platform needs to extend their skills, confidence and capabilities while reducing their reservations about engaging in learning through the online classroom (Gillett-Swan 2017: 26). Online learning makes use of Learning Management Systems (LMS) to assist in the administration and management of online content (Lopes 2014: 5360), for example, Google Classroom, Blackboard, Moodle and Edmodo. Google Classroom was used for this study because it is prescribed within the institution. The application offers lecturers and students a platform to communicate, collaborate, organise and manage assignments (Online tools for teaching and learning 2019: 1). The current generation of students are familiar with and use social media such as Skype, Twitter, Facebook, Instagram, You Tube, blogs, wikis and Google, both inside and outside the classroom (Son, Sun and Lee 2018: 130). Social media provide a platform for social interaction, can be used to manage course activities, provide information and resources, as well as to promote student engagement, and motivation through interaction and collaboration. In this study, the Google Classroom platform was used to promote interaction by providing students with an opportunity to engage in: online forums, collaboration with their peers who had similar design elements, and reviews by uploading their work in progress and receiving feedback from the lecturer. Students were also able to engage with the content by navigating the resources and extracting the necessary information specific to their design problems.

2.5 Blended learning

Blended learning is considered to be an effective approach for accommodating the diverse student population while adding value to face-to-face learning environments through the incorporation of online resources (Alammary, Carbone and Sheard 2016: 1). Gutteridge (2006: 6-7) summarises the "complementary, compensatory or enhancing influences" of the blend between the "actual" and the "virtual" classrooms as follows:

- The outer limits weirdness of internet exploration balances the comfort zone of the actual classroom, and the blend effect is to encourage learners to explore from a safe base.
- The limited resources of oral or written texts available in classrooms and libraries are compensated by the unlimited, easily accessed resources of the internet.
- The personal warmth and immediacy of small group face-to-face interaction is complemented by the heightened interactivity of electronic communication.
- The narrowness of classroom rules is seasoned by the growing global social awareness resulting from netsurfing.
- While classroom assessment is more personal and directed, the Internet offers multiple chances for feedback, and self-testing gives the learner more control and independence
  (Gutteridge (2006: 6-7, adapted as points).

The face-to-face contact time allows students to communicate freely, engage in discussions and clarify any queries (Son, Sun and Lee 2018: 129; Yick *et al.* 2018: 180). Students are able to test their understanding immediately, interacting with their peers and lecturer (Dennis *et al.* 2006: 231), solving practical problems during hands-on activities (Dennis *et al.* 2006: 239). Students tend to prefer the face-to-face components of a blended learning delivery, placing greater value on the face-to-face experiences (Graham 2006: 66). As Gutteridge (2006: 6-7, above) comments, online study can leave the student with the eerie experience of being left alone "out there". Students enjoy the immediate feedback and corrective action provided by their lecturers (Dennis *et al.* 2006: 233). The online component allows students to have access to course materials, resources and communications at any time and from any location, where the student has internet access, instead of the limited access which face-to-face learning offers (Dennis *et al.* 2006: 231). This allows students to work independently,

accommodating students who have different levels of expertise, learning styles and self-regulated learning (Dennis *et al.* 2006: 231; Gillett-Swan 2017: 21) Future innovations provided by the online component (Vahed *et al.* 2017) include use of technical enhancements such as artificial intelligence (AI) and simulations, as well as feedback and monitoring mechanisms which can give immediate feedback on both course effectiveness and projected success rate (Garner, Tsui and Lukose 2009; Ma *et al.* 2014; Maderer 2016).

Selecting the appropriate design for a blended learning course can be challenging (Bozalek and Ng'ambi 2015: 3). The lack of guidelines for the pedagogical approach to blended learning has left many educators integrating technologies in their own way, focusing on the technical aspects, adding 'technology for technology's sake', which leads to non-transformative learning outcomes (Bozalek and Ng'ambi 2015: 3). The process of designing a course which creates a harmonious balance and thoughtfully integrates learning involves a great deal of time and planning (Alammary, Carbone and Sheard 2016: 3). The focus should be on creating carefully prepared online materials which meet the educational aims and objectives for both the online content and face-to-face class time (Charitopoulos *et al.* 2017: 3). A major challenge for educators is to develop a learning environment which optimises the chances of success for each student (Yick *et al.* 2018: 180).

Alammary, Carbone and Sheard (2016: 3) identified three design approaches for blended learning: a low-impact blend (adds extra activities to an existing course); a medium-impact blend (replaces activities in an existing course) and a high-impact blend (builds a blended learning course from scratch). The medium and high-impact approach were not appropriate for this study as the course outlines and content were prescribed by the institution. The low-impact blended approach, on the other hand, supplements the traditional face-to-face course with extra online activity. The benefits of this approach are the easy integration and the quick production of a blended environment, as well as the fact that it has a low risk of failure, if applied carefully. Finally, minimal experience is needed to apply this approach. The challenges of this approach are that educators can create two separate classrooms, an online classroom and a face-to-face

classroom, which are not integrated. Lecturers need to successfully integrate technology into the teaching experiences by identifying the technological tools which are needed to fulfil a pedagogical goal and identify how these tools would be used to achieve that goal. The blended learning approach should enhance the students' ability to use the tools in different phases of the learning process by exploring, analysing and producing knowledge (Alammary, Carbone and Sheard 2016: 4). If this approach is used, the extra online activities can be seen as another task by the students in addition to their already content-heavy course, which means that the online activities need to be seen as alternative, and not additional to, the face-to-face component.

Alammary, Carbone and Sheard (2016: 4) recommend the following approach to achieve a low-impact blend. The lecturer should start by adding an online activity which the students can easily manage. The added online activities must have a specific pedagogical rather than technological approach. The activity must be well integrated into the course content, and the content must not be overloaded with tasks and activities. This approach allows lecturers to start simply and implement changes incrementally by replacing (i.e. not adding) course components when required. The experience gained in this approach can assist in building lecturer's confidence with blended learning, giving lecturers the opportunity to experiment with different approaches without losing the benefits of a traditional course (Alammary, Carbone and Sheard 2016: 5). The challenges for this approach include the need for lecturers to have good technical knowledge, and the replacement of course components requires lecturers to dedicate time and effort to producing a blended learning class. There is no defined set of standards or guidelines to achieving a harmonious balance, which this requires the lecturer to continually review and evaluate the course. In this study, blended learning was being implemented for the first time by the lecturer, and the low-impact approach allowed it to be applied carefully, given the course limitations.

Many studies have shown that incorporating the Internet into face-to-face instruction improves students' academic achievements (Castaño-Muñoz, Duart and Sancho-Vinuesa 2014: 157). Despite this, there is very little evidence to

explain the cause of the improvement. Castaño-Muñoz, Duart and Sancho-Vinuesa (2014: 157) conducted a study to explore the improvements and found that, although online learning environments increased the students study time, the increase of time in itself did not lead to improving their academic achievements. The improvement occurred because of the time spent together, with the use of interactive learning, by online communication with the lecturer and fellow students (Castaño-Muñoz, Duart and Sancho-Vinuesa 2014: 151). Engagement appears to be a key factor for a successful learning environment, and blended learning can help ensure that a student engages in his or her own learning process (Scott 2015: 2), transforming the way individuals learn (Graham 2006: 48). This type of blended environment allows for different and individual learning styles, drawing on the advantages of both online learning as well as face-to-face learning (Graham 2006: 58).

Yick *et al.* (2018: 179) conducted a study investigating the effective integration of online learning and blended learning in a Fashion and textile programme, stating that current literature on the effectiveness of blended learning in Fashion design had not been fully reported on. The study assessed the effectiveness by reviewing the grades of the participants and the successful promotion of self-regulated learning (SRL). SRL is the degree to which students actively participate in their own learning process (Zimmerman 1990: 4) from a "meta-cognitive, motivational and behavioural point of view" (Yick *et al.* 2018: 181). The study reviewed a garment construction class, where one set of students took part in traditional face-to-face classes only and the other used blended learning. The findings of the study suggested that there was no significant difference between the grades of the two groups of students. However, the positive uptake of blended learning confirmed that the online learning environment was effective in promoting SRL, which enhances the students' experiences (Yick *et al.* 2018: 187). The results of this study are an important consideration in the development of this study, which investigated how students and lecturer *experienced* blended learning. The Yick *et al.* (2018) study was recently conducted, and was based on a garment construction class, which means that their findings should be directly applicable to the students in the garment construction class in this study. The findings addressing the limited impact the blended learning environment had

on the students' grades confirms that the integration of blended learning should not have a negative impact on the students' results. The positive impact on SRL suggests that blended learning might help students become more engaged in the learning process, thus assisting the students to align with the NQF level 7 descriptor (South Africa 2012: 5) and becoming degree candidates who are able to *manage their own learning* and take *responsibility* for their own work.

The blended learning design must aim to establish the blend, that is, how much content will be taught face-to-face and how much must be taught online (Van der Merwe *et al.* 2015: 11). The 'blend' of blended learning used would be unique to its learning environment, and the aim would be to find a harmonious balance of face-to-face and online learning tailored to improve students' learning (Osguthorpe and Graham 2003: 228). However, there is no prescribed formula to achieve the perfect blend of face-to-face learning and online learning (Hofmann 2006: 87). Graham (2006: 69) relates the blending process to a design problem which is context-dependent with an infinite number of solutions. Hofmann (2006: 87) advises that the learning objectives for a module should determine what is delivered face-to-face or online, which means that the blend would change from module to module as the learning needs and objectives change.

The flipped classroom, where the lecturer provides the students with online preparatory activities before class, is considered to be one of the best strategies for blended learning (Capone, De Caterina and Mazza 2017: 10478; Charitopoulos *et al.* 2017: 4). A simplified description of a flipped classroom is that the lecturer's lesson is viewed at home, and the student completes their homework in class (Slomanson 2014: 93). The blended approach allows the online learning component to be focused on acquiring background knowledge, skills and technical information, while the face-to-face time focuses on the application of their knowledge (Graham 2006: 57). The role of the lecturer then becomes that of a facilitator in class to help the students in the transition from knowledge to skills (Capone, De Caterina and Mazza 2017: 10479). The face-to-face contact time becomes an environment where students are able to apply

knowledge under the guidance of the lecturer (Graham 2006: 58). The students' role is to engage actively with the entire learning process (McCulloch 2009: 178).

Applying the flipped classroom to the combined pattern making and garment construction class meant that the students could view content before class and apply their skills during the face-to-face contact time with the support of the lecturer; previously they would have been applying their skills for homework without immediate guidance. The flipped classroom allowed students to take an active role in developing their knowledge on their own and applying it in class where they can share knowledge with their peers and lecturer.

2.6 Constructivist pedagogy

Pedagogy considers the instructional techniques and strategies, which allow learning to take place, and the interactive process between the teacher and the learner (Siraj-Blatchford *et al.* 2002: 10). Van der Merwe *et al.* (2015: 11) suggest that the pedagogical approach should focus on creating a thoughtful and appropriate pedagogy which appeals to the students. In order to appeal to today's students (the digital natives) the pedagogical approach needs to be reconsidered (Van der Merwe *et al.* 2015: 11), as the traditional role of the teacher being the master of all knowledge is no longer appropriate (Faerm 2015: 189). Moving away from the traditional teacher-centred approach, the pedagogical focus needs to consider the learner and their learning (Heinze 2008: 19). Constructivist pedagogy is a learner-centred approach to teaching, where the students' needs are at the centre of the pedagogical focus. According to Heinze (2008: 20) Piaget and Vygotsky (researching child psychology) believed that learning was done through building blocks. Certain stages had to be dealt with first in order to move on to the next stage of learning. Learners are not passive recipients of knowledge, learning takes place when students construct their own knowledge (Anderson and McCormick 2005: 10).

McCulloch (2009: 178) suggests that successful learning takes place when students are active participants in the development of knowledge. This means that, if learners do not construct their own knowledge, they do not learn

effectively, because knowledge cannot be simply given to someone (Paulins and Moeller 2017: 9), nor do students learn by merely sitting in class and listening (i.e. as in traditional teaching). Students need to make what they learn part of themselves, and to be able to talk about what they are learning, relate to it and apply it in their daily lives (Paulins and Moeller 2017: 9). The educator's role, then, is to facilitate opportunities for learners to construct knowledge, instead of merely communicating knowledge (Heinze 2008: 20; Scott 2015: 2). There are three considerations in constructivism: the role of the learner and the teacher; the acknowledgement by constructivists that learning is a socially and culturally determined activity (Shepard 2000: 6); and the focus on the facilitation of learning (Heinze 2008: 20).

In the past few decades pedagogy has moved towards being student-centred and incorporating self-directed learning. Learning is becoming more personalised (Halim, Ali and Yahaya 2010: 1), and students are more actively involved in their learning process (Wanner and Palmer 2015: 354). Personalising education means that students are placed at the centre of learning (Keamy and Nicholas 2007: 2); considering their needs, interests, backgrounds and learning styles, gives the students more choice and flexibility in their learning (Wanner and Palmer 2015: 354). The personalisation of the students' learning process is very important in this study. During a pattern making and garment production project, each student designs a garment, which can be considered as their own design problem which needs to be fulfilled within the parameters of the project brief. The students will design their own skirts and shirts, develop a pattern for their design and construct the final garments. The constructivist approach allows for the students' learning to be at the centre of the class. The lecturer's role becomes that of a facilitator helping each student construct their own knowledge based on their design problem.

The next sections will explore learning approaches which align with the constructivist pedagogy, namely, reflective learning, collaborative learning, authentic learning and considerations on how to mitigate student resistance.

2.6.1 Reflective learning

Students can broaden their knowledge base by building and expanding upon their knowledge through reflection (Boud, Keogh and Walker 1985: 17; Moon 2013: 81). Boud, Keogh and Walker (1985: 17) state that reflection is a social activity, aligning with the constructivist idea that learning is a social activity. The purpose of reflection is for students to make sense of what they are learning and to learn from their experiences for future improvements (Moon 2013: 81). Students are able to articulate their growing understanding by speaking the "vocabulary" (Herrington and Kervin 2007: 10), and sharing their knowledge with one another by discussing their issues and their processes. Herrington and Kervin (2007: 9) believe that learning opportunities are wasted because students are not given the opportunity to reflect upon their learning. Without reflection, students remember information only long enough to complete the task and forget about it before moving on to the next task (Herrington and Kervin 2007: 10).

2.6.2 Collaborative learning

The constructivist's idea that learning is done through social interaction can be enhanced by a collaborative learning approach. Collaborative learning promotes the exchange of ideas and participation by each student, working together to share knowledge (Stetsenko 2009: 9; Roselli 2016: 256). This collaboration can take place either online or in a face-to-face learning environment, as in a design studio (Pektas and Gurel 2014: 33; Venter 2019: 241). If online, it will occur in a social space where students can establish a learning network (Venter 2019: 241); if in a design studio, it will be an actual physical space where students can share their proposed solutions to a problem, develop processes and share their findings with the class and the lecturer (Pektas and Gurel 2014: 33). The blended learning approach allows students to participate and to contribute within the different learning environments, encouraging and developing a sense of community (Gillett-Swan 2017: 26). Collaboration is a key feature to the students' future success: not only does it mimic real-world interaction, but it broadens the students' knowledge. In this study, each students' unique design problem resulted in certain learning areas not being covered, as their design cannot have all the design principles and techniques associated with the construction of skirts

or shirts. However, the collaborative approach made it possible to expose the students to more techniques through their fellow classmates sharing their knowledge with one another.

2.6.3 Authentic learning

When creating a blended learning pedagogy, one must select technologies that make the learning activities more authentic (Kenney and Newcombe 2011: 47). Authentic learning, also known as situated learning, has been defined as learning knowledge and skills in contexts that reflect the way knowledge would be used in real life (real-world) contexts (Collins 1988: 3; Herrington and Kervin 2007: 4). Authentic learning addresses the delivery and practical aspects of education in vocational training, which requires students to apply knowledge gained in a formal educational setting in a workplace context (Butler and Brooker 1998: 81).

The lecturer's role is to design activities that add meaning and links between their knowledge, skills and experiences (Sze-yeng and Hussain 2010: 1914). Lecturers also need to make learning more relevant to students by creating opportunities for them to apply their knowledge in realistic ways (Herrington, Oliver and Reeves 2003: 2115). Authentic learning experiences are more than examples simply presented from real-world practise. The example needs to reflect the way the knowledge will be used (Herrington and Kervin 2007: 4). A study compiled by Cavanagh and Peté (2017: 1510) explored the use of authentic learning within a pattern making class. It was evident in the results of the study that authentic learning allowed students to master their skills better and transfer their knowledge to new contexts.

The lecturer should provide the students with content that they are unable to provide for themselves (Herrington and Kervin 2007: 11). The students should explore the content with "all the complexity and uncertainty of the real-world" (Herrington and Kervin 2007: 5; Herrington, Reeves and Olivier 2010: 42). This gives the students the opportunity to determine which tasks are relevant to them, allowing them to select the information and find a solution which suits their needs (Herrington, Reeves and Olivier 2010: 42). The lecturer supports the students as

problems arise while the students attempt to integrate their knowledge and skills. Similarly, this support can be provided by other students to encourage collaborative learning amongst the students (Herrington and Kervin 2007: 11; Van den Berg, Verster and Collett 2018: 445).

An authentic learning model assists in structuring a learning environment where the focus is on authenticity and learning for real-world situations (Van den Berg, Verster and Collett 2018: 445). The principles which inform the authentic approach are grounded in the philosophy of constructivist pedagogy (Oliver 2005: 4). Herrington, Oliver and Reeves (2003: 4) provide ten characteristics to follow when developing an authentic activity.

- Have real world relevance: the activity should mimic real-world tasks of the professionals in practise.
- Activities are ill-defined: Requiring students to define the tasks and sub-tasks needed to complete the activity. The activities are open to multiple interpretations by each student.
- Comprised of complex tasks: which need to be investigated by students over a sustained period of time. These activities are completed over days or weeks requiring students to invest their time in the activity.
- Provide an opportunity for students to examine the task from different perspectives, using a variety of resources: Students need to examine the problem from a variety of theoretical and practical sources, rather than from a single perspective, where students have to imitate the process to be successful.
- Provide the opportunity for collaboration: Students need to collaborate with one another to mimic real world scenarios.
- Provide the opportunity for reflection: The activities need to allow students to make choices and to reflect on their learning processes, both on their own and with their classmates.
- Activities that can be integrated and applied across different disciplines: The activities should encourage interdisciplinary perspectives
- Activities which are seamlessly integrated with assessment: The activities should be assessed in a way that reflects real-world assessment.
- Create polished products which are valuable in their own right rather than as preparation for something else: The activity should lead to a whole product rather than an exercise in preparation for something else.

- Allow for competing solutions and diverse outcomes: The activity should be open to multiple solutions.

In this study, these ten characteristics were used in the development of authentic learning activities which reflected the real-world activities of pattern makers and seamstresses.

2.6.4 Student resistance

Students are resistant towards new teaching methods (Tharayil *et al.* 2018: 1), because these methods can lead to more work, as well as anxiety about their ability to succeed in the new teaching environment or in terms of the lecturer's expectations which the students are not prepared to meet (Shekhar *et al.* 2015: 597).

Paulins and Moeller (2017: 9) found that students resist learning activities which support the understanding of concepts, the *why* of the subject. Mann and Enderson (2017: 15) stated that students tend to follow the rules or procedures of a task without understanding why they are doing it. Students either follow the rules to bring them to the right answer quickly (Mann and Enderson 2017: 16), or alternatively, they want the instructor to simply tell them how to solve the problem (Paulins and Moeller 2017: 9). Students can fulfil a task by knowing the *how* of a subject (Stevenson 2001: 654), performing a set of actions in a specific manner to solve the problem. However, this approach does not lead to a deep understanding, nor does it allow for critical thinking (Mann and Enderson 2017: 16). The *why* of a subject (conceptual knowledge) is an understanding of the relationships between pieces of information and applying this knowledge to different contexts. The understanding of concepts improves the students' abilities to solve problems and complete tasks (Paulins and Moeller 2017: 9). Because of student resistance, educators are challenged to meet the students' desire for efficient transfer of instructional information while providing them with core understanding of concepts (Paulins and Moeller 2017: 9).

Students tend to show their resistance in three different ways: through passive engagement, partial compliance and open resistance (Shekhar *et al.* 2015: 597).

Passive engagement is when a student nonverbally resists class activities by not engaging in the activity or with their peers. When students *partially* comply in class activities, they tend to do activities without any enthusiasm. Students who show *open resistance* complain about the teaching methods in front of their peers in the hopes to rally their classmates' support. There are many ways to reduce students' resistance (Tharayil *et al.* 2018: 2). Bacon, Stewart and Silver (1999: 481) suggests clearly explaining the outcomes and expectations to the students. Bentley, Kennedy and Semsar (2011: 61) state that the course outcomes should be aligned to the assessment criteria. Tharayil *et al.* (2018: 11) developed the following suggestions to mitigating student resistance: explaining the course expectations and the activity expectations to the student, encouraging the students to take part in asking questions, and designing activities which encouraged student participation. The approaches suggested in this section were considered and integrated into the development of the blended learning delivery used in this study.

2.7 Blended learning curriculum model

While there are no prescribed formulae, standards or guidelines to achieve the perfect balance in a blended approach, a blended learning model can assist in structuring a low-impact blend. The blend needs to be student-centred, ensuring opportunities for reflection and collaboration, while providing the students with the opportunity to engage with authentic learning activities.

Huang, Ma and Zhang (2008: 5-9) developed the blended learning curriculum (BLC) model (Figure 2.1), to assist in preparation for a blended learning programme. The model is made up of three stages: the pre-analysis phase, design of activities and resource phase, and the instructional assessment design phase (see Figure 2.1). The first section, the pre-analysis stage, allows educators to establish whether blended learning can be used in their classroom. This is done through an analysis of the learners' characteristics, by assessing the students' prior knowledge, learning styles and learning preferences. This is followed by an analysis of learning objects, which includes the objectives of what should be covered. Lastly, the analysis of the blended learning environments

must take place by identifying the institution's preferred online learning platform as well as the students' competencies for use. The analysis discussed above is then documented as a report and serves as a starting point for the design of activities phase.

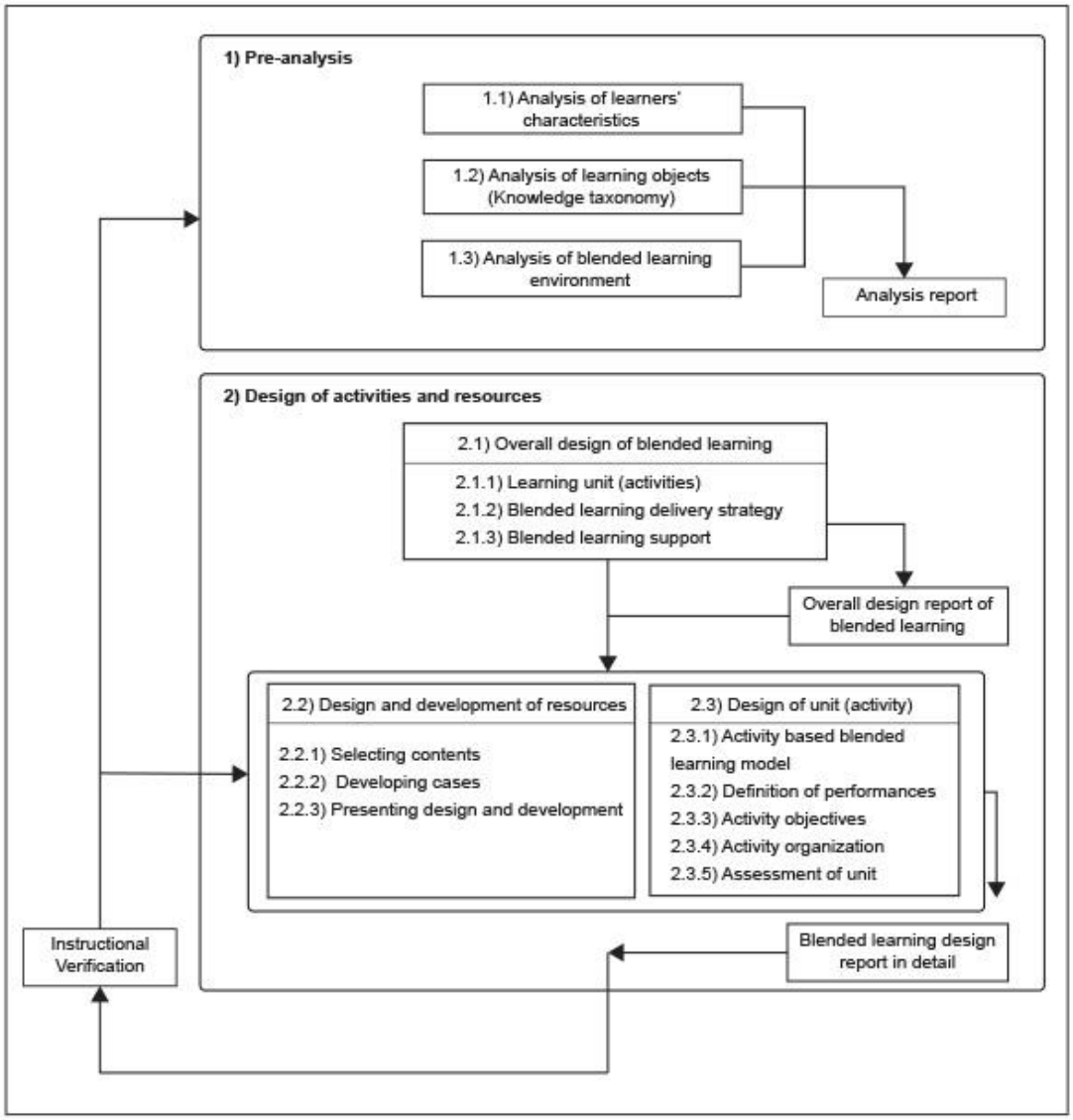


Figure 2.1 Blended learning curriculum (BLC) model (Huang, Ma and Zhang (2008: 6).

The second section of the BLC model is the design of activities and resources phase, which consists of three components that assist in the design of a blended learning approach. The first component is the overall design of blended learning,

and this pre-determines the next two components, the activity design and the resource design. In the over-all design phase, the educator establishes the general objectives and plans activities which addresses these objectives. An assessment of an appropriate blended learning delivery strategy and blended learning student support is carried out. These factors create a 'road map' for the educator to design appropriate blended learning methods for the class. The second component, the design of resources, is made up of the following: the selection of contents, the development of cases, and the presentation of design and development. The third component, the design of activity, can be broken down into four parts: a definition of performances, the activity objectives, the activity organisation, and the assessment of the unit. The assessment allows the educator to determine if the instruction was successful or not.

Although this model provides general idea of the design activity phase, Huang, Ma and Zhang (2008: 8) created the activity based blended learning model (Figure 2.2), to break down this process further. There are four main components in this model: the lead-in, planning, acting, and reviewing. The lead-in component is the starting point of the activity, in which the educator explains the task to the students. This is done by describing the objectives of the task, so that the students have an idea of what they are expected to achieve once they have completed the task. Next, the educator shows examples, allowing the students to have a better understanding of the task. The students are then provided with resources to assist them in completing the task. Lastly, the educator gives the students the instructional arrangements of how this task fits into the term. The planning component is an opportunity for the student to define the task themselves by using their knowledge. This planning stage consist of three sub-components: define the problem, define the steps to solve the problem, and identify classmates with whom to collaborate. The acting component deals with the completion of the task or problem through the completion of task-related requirements. The students are required to collect more information; complete the task; and to solve the problem. These steps are done in the online learning environments. The students are able to gain knowledge from the online classroom and support from their peers and their lecturer. The objective of the reviewing stage is to ensure that new knowledge can be transferred to future

tasks by sharing their knowledge with their peers and their lecturer. This can be done by uploading presentations onto the LMS, through self-reflection where they compare their work with their peers and the evaluation of their work by their peers and their lecturer.

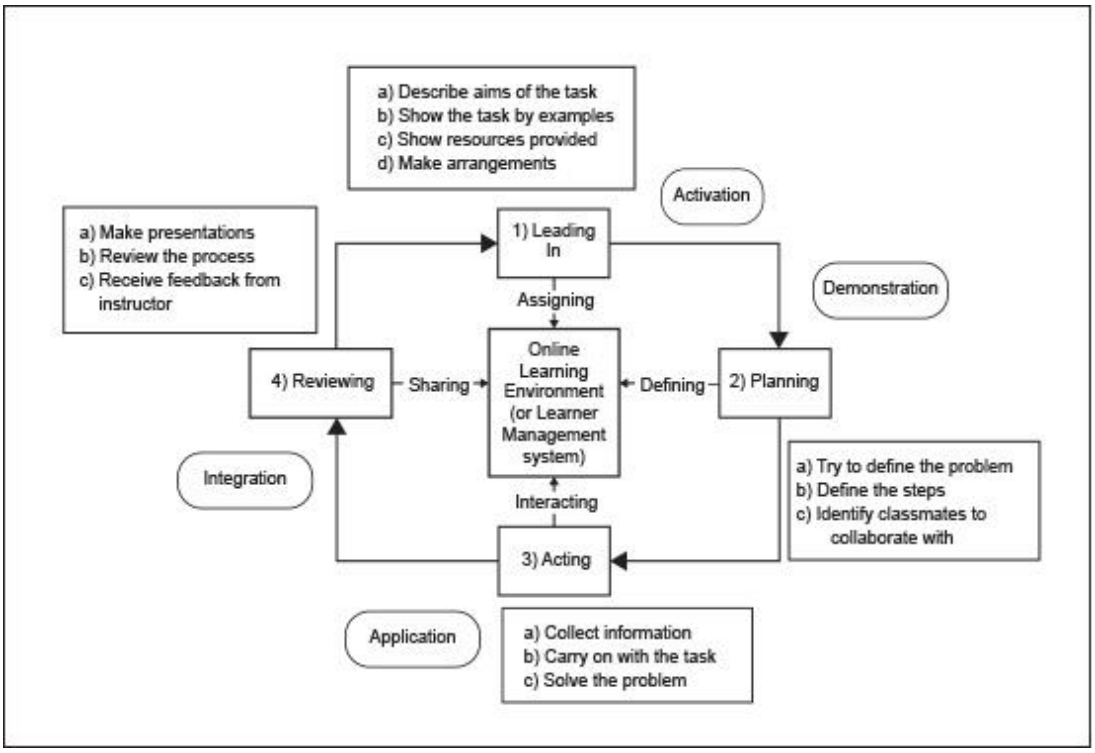


Figure 2.2 Activity based blended learning model, based on Huang, Ma and Zhang (2008: 8).

The BLC model allows for the development of a blended learning approach which considers the learning needs, content, delivery, students' engagement with the content and the analysis of the approach. It was therefore considered suitable for design of the blended learning approach used in the pattern making and garment construction module. However, The BL model developed by Huang, Ma and Zhang (2008: 5-9) will not be a perfect fit for all contexts – scholars such as Kituyi and Tusubira (2013: 29) and Newbury (2013: 141) have explored adapting this model to their context as an e-learning integration framework (Kituyi and Tusubira 2013: 29-30), and a blended learning elements identification rubric (Newbury (2013: 146).

2.8 Conclusion

A blended learning approach appeals to digital natives and as such should be integrated into today's classroom. Despite this, there is no guideline on how to create the balance of the 'blend' in blended learning, and each approach is unique to the students, lecturer and subject being taught. Factors which need to be made when designing a blended learning delivery were considered, and it was decided that the design should be centred on the students' needs and their learning process, providing opportunities for social interaction, as well as allowing students to reflect on their learning processes, learning from their experiences and their peers. Collaborative learning could be seen as fostering the idea of peer learning, with students sharing their knowledge with other students and their lecturer. The students would then start to create a sense of community and learn to work together as a team, mimicking real world activities, and authentic learning activities would give the learning process real-world relevance. The BLC model could be seen to assist in developing a blend which might facilitate the learning processes both within the face-to-face classroom and the online classroom. The following chapter addresses the research design by identifying an appropriate research orientation, methodology, and data collection methods.

CHAPTER 3: RESEARCH DESIGN

3.1 Introduction

Chapter 3 first provides an overview of the research design used in this study. It then goes on to discuss the research orientation, the constructivist paradigm, and the research methodology, a mixed methods case study using a sequential exploratory approach. After looking at the sampling method used, and ethical considerations observed, the chapter goes on to discuss the two pattern making and garment construction projects which were used to gather the data, namely, the skirt brief and the shirt brief. The data collection in stages for each brief is then discussed in some detail. The data analysis method is then described, followed by the criteria used to ensure trustworthiness. The chapter concludes by commenting on the congruency between elements in the research design, both with each other and the constructivist orientation governing the research.

3.2 Research design

This study investigated students' experiences of blended learning delivery during two projects, project one (the skirt) and project two (the shirt), with the intention of developing a balance blended learning delivery which would facilitate learning. An overview of the research design is provided in Table 3.1, which shows the research orientation as being social constructivist, and the methodology, a mixed methods case study using a sequential exploratory approach. The constructivist paradigm meant that the lecturer and students constructed their own knowledge and understanding through their experiences. The mixed methods methodology gave insight into the students' experiences of the blended learning approach used by collecting both qualitative and quantitative data, using the following research tools: questionnaire, observation, a reflective journal and exercise, and interviews. Using a case study allowed the researcher to narrow the scope of the research, focusing on a specific cohort of students who were the lecturer's group of students at the time of the study.

Table 3.1 Research design

RESEARCH DESIGN				
ORIENTATION	Constructivist research paradigm			
METHODOLOGY	Mixed methods case study using a sequential exploratory approach			
				
Sequence	Stage 1	Stage 2	Stage 3	
Methods	Quantitative	Qualitative	Qualitative	
Research tools	Questionnaire	Observation schedule	Interviews	Reflective journal and exercise
Purpose	To establish a baseline of students' prior understanding of blended learning, pattern making and garment construction processes.	To assess the results of using blended learning from the lecturer's perspective to identify any gaps in the approach.	To gain insight into the students' experience of the blended learning approach.	
Products of the research	Insight into the students' prior understanding of blended learning, pattern making and garment construction processes.	Insight into the strengths and areas for improvement of the blended learning approach, based on the lecturer's experience.	Insight into the students' experiences of blended learning, thereby identifying the strengths and areas for improvement.	

The sequential exploratory approach meant that the blended learning approach could be both studied and developed as it unfolded in sequence, allowing for continuance of effective strategies and adjustments in areas which needed improvement. The sequence consisted of three stages of data collection: 1) quantitative, 2) qualitative and 3) reflective.[1] To begin with, quantitative data were collected during stage one via an online questionnaire with closed and open-ended questions. This data provided a baseline understanding of the students' knowledge prior to beginning the study. Next, during stage two, qualitative data were collected in a reflective journal using an observation schedule with open-ended questions. The qualitative data gave insight into the lecturer's experience of using the blended learning approach. This made it possible to assess any gaps in the delivery as well as strengths and areas for improvement for the

[1] It must be noted that the "qualitative" stage did in fact have a reflective aspect, and that the "reflective" stage, as with the "qualitative" stage, involved qualitative data-gathering methods.

following project. Finally, stage three dealt with collecting further qualitative data focusing on the students' experiences of, feelings about, and opinions on the blended learning approach. Two sets of qualitative data were collected during this stage, using interviews and a reflective exercise. The interviews allowed the researcher to understand the experiences of each student while the reflective exercise resulted in a discussion of these experiences. These interactions allowed for a deeper understanding, providing the opportunity to clarify the findings, obtain a clearer understanding of students' experiences, and give insight into the strengths and areas for improvement of the blended delivery. The various elements of the research design are discussed in more detail below.

3.3 Research orientation

The research orientation used in this study was the constructivist paradigm, which describes the world view governing this inquiry into blended learning. Kuhn (1962) was the first to use the term "paradigm", in order to account for the revolutionary shifts in viewpoint which occurred during major breakthroughs in the natural sciences. Kuhn (1962: 175) defined a paradigm as: "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given [scientific] community" Following Kuhn's lead, and applying it to research in the social, as well as natural, sciences, Guba and Lincoln defined a paradigm as "the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways" (1994: 105). Creswell also refers to the term paradigm as a world view, or "general orientation about the world and the nature of the research that the researcher holds" (2009: 6), as do Creswell and Poth in more recent works (2017: 20).

Constructivists believe that people construct their own understanding and knowledge through their experiences (Schwandt 1998: 221; Adom, Yeboah and Ankrah 2016: 2). Furthermore, these meanings are formed through their interactions with other people (Creswell and Poth 2017: 20), hence the idea that reality is socially constructed (Guba and Lincoln 1994: 105; Mertens 2014: 16). In this study the aim was for the lecturer (as researcher) to understand a specific

student cohort's perspective (Kaplan and Maxwell 2005: 30), and the meanings that the participants formed through their interactions with one another and the lecturer. The participants were interactively linked, and, as such, findings were created as the investigation proceeded (Guba and Lincoln 1994: 111). Each student's perspective was unique, and it was the researcher's role to represent the participants' complex views and opinions of the situation (Creswell and Poth 2017: 20). The researcher made an interpretation of what she found, and this interpretation was in turn shaped by her own experiences and background. The intention was to make sense of the meanings others had about their world (Creswell and Poth 2017: 21).

Creswell and Poth (2017: 21) advocate that the basis for research should have an actionable agenda, one that will change the lives of the participants. The "agenda" here was for the teaching practice to align with what could be shown to facilitate the students' learning process. From the lecturer's perspective, it was first necessary to assess to what extent the blended learning approach made the best use of the face-to-face contact time and online delivery to facilitate the learning process, and, next, to assess the extent to which the approach facilitated the students' efforts to meet the brief requirements (i.e. the desired learning outcomes). From the students' perspective, it was necessary to understand their views of and opinions on the blended learning approach and in what ways (if at all) it might have assisted them to meet the brief requirements.

3.4 Research methodology

The research methodology comprised a mixed methods approach, using a case study and following a sequential exploratory sequence. Using a mixed methods approach allowed for the collection and analysis of data, integrating the findings and drawing inferences from both qualitative and quantitative methods in a single study (Yin 2006: 41; Tashakkori and Creswell 2007: 4). This provided the opportunity to assess a "greater assortment of divergent views" (Teddlie and Tashakkori 2009: 33) which aligned with the social constructivist view of understanding individual's perspectives. The inquiry was concerned with understanding an issue or situation by investigating the perspectives or behaviour

of people in the situation in their natural environment (Kaplan and Maxwell 2005: 30).

In the mixed methods approach, the numerical data establishes trends and the narrative data is used to explore further and gain insight into the possible reasons for these trends (Cupchik 2001). In this study, trends in the participants' baseline knowledge of blended learning and their subject knowledge were established though numerical data. The reasons for and further development of these trends were explored further in the exploratory phase of the study which generated data on the lecturer's and students' experiences of the blended learning approach. The need to understand one strand first (the confirmatory stage) followed by another (the exploratory stage) suggested that the exploratory sequential approach, which followed a chronological order, should be used (Teddlie and Tashakkori 2009: 26). The study could not follow a parallel mixed design approach where strands of a study happened simultaneously because of the need to collect quantitative data first, followed by qualitative data, to build on the initial data (Creswell 2009: 211; Creswell and Creswell 2017: 211), verifying and generating theory in the same study (Teddlie and Tashakkori 2009: 33). The results were triangulated to combine and compare "multiple data sources, data collection and analysis procedures, research methods" and inferences which occurred at the end of the study. The mixed methods approach allowed for a more comprehensive understanding of the phenomenon under study that use of one method only (Teddlie and Tashakkori 2009: 27).

3.4.1 The case study

While there are many definitions and interpretations of case studies, the most simplified definition offered is: "an intensive analysis of an individual unit (as a person or community) stressing developmental factors in relation to environment" (Mills *et al.* 2017: 1). This inquiry sought to *analyse* a specific cohort (community) to *develop* improved teaching and learning processes by obtaining a deeper understanding of a balanced blended learning approach within the face-to-face and online classroom *environment*.

Case studies align with the social constructivist paradigm by seeking to explore, understand and establish meaning from the experiences and perspectives of those involved (Stake 2005: 2; Austin and Sutton 2014: 436). The research sought to understand the participants' experiences in their context, and the knowledge that emerged from the research was relative to the time and context of the study (Stake 2005: 2; Mills *et al.* 2017: 6). In this study the aim was to improve a specific situation in a specific context which was relevant to the researcher (as lecturer) at the time of the study. The case study approach also narrowed the scope of the research, focusing on a cohort of students in a pattern making and garment construction class. At the time of the study, the students had not experienced blended learning in for this subject. The rationale for introducing blended learning was to make best use of the limited contact time allocated in order to enhance the students' learning experience. Thus, the focus of the research was to establish an optimum balance in the blend of online and face-to-face learning so as to facilitate the learning process for the cohort. Stake (2005: 2) suggests that the researcher's situation would affect the activity, experience and interpretation of the case in point; thus, the researcher needs to experience and interpret the activity in its context as the activity occurs. This allows the findings to be uncovered as the research happens, which is why the sequential exploratory approach was used.

3.4.2 The sequential exploratory approach

The sequential exploratory approach applied in the mixed methods case study meant that the data could be collected and analysed in sequence. The approach followed three stages: quantitative, qualitative and reflective (see Table 3.2). During the first stage (the quantitative stage), the aim was to obtain a quantified base of the students' understanding or knowledge of certain key aspects (i.e. knowledge of their academic subject and of blended learning), which provided a preliminary understanding of the situation existing at the beginning of the case study. Without this understanding, it would have been possible to operate only on assumptions about their prior knowledge. The information from the quantitative stage guided the following two stages, which involved collecting qualitative data, with reflective activities involved in each case, but more

predominantly in stage 3 (which is why it is termed “the reflective stage”). As the study was governed by the constructivist paradigm, the research had a greater emphasis on exploratory questions which developed more narrative-type data (Teddlie and Tashakkori 2009: 28), giving insight into the lecturer’s and students’ experiences. The second stage (the qualitative stage) focused on the implementation of blended learning. Narrative data were obtained by means of the observation schedule to assess possible gaps in the blended delivery design. In order to understand how the students experienced blended learning, the reflective stage focused on their opinions of, feelings about, and experiences of the blended learning approach. The sequential use of qualitative data allowed exploration of the findings of the quantitative data in an in-depth manner, leading to a richer understanding of the phenomenon (Teddlie and Tashakkori 2009: 21).

Table 3.2 Stages of the sequential exploratory approach

SEQUENTIAL EXPLORATORY APPROACH		
Stage 1	Quantitative stage	Assessment of baseline knowledge
Stage 2	Qualitative stage	Implementation of blended learning
Stage 3	Reflective stage	Reflection on blended learning experience

3.5 Sampling

The sample for this study was selected using the non-probability sampling technique, purposive sampling (Babbie 2014: 199). Non-probability sampling is used when a researcher is not concerned with drawing inferences from a sample to the population (Etikan, Musa and Alkassim 2016: 1). In contrast, probability sampling allows every unit in a population a positive probability of being selected (Schreuder, Gregoire and Weyer 2001: 281). Probability sampling was not appropriate for this study because access was not available to all pattern making and garment construction students across South Africa. Thus neither equal opportunity to this population nor random selection of participants was an option.

Rather, as mentioned above, the intention was to improve a specific situation in a specific context which aligned with purposive sampling (Teddlie and Tashakkori 2009: 174). This group of participants was deliberately chosen as a specific cohort needed to be analysed owing to its qualities (Etikan, Musa and Alkassim 2016: 1), which included accessibility to the cohort, the level of participants' knowledge and their skillset.

The sample population comprised the student group that the researcher lectured at the time of the study, namely, the 2019 group of second year pattern making, and garment construction students registered at a local private design institution. The course was a three-year Bachelor of Design Degree, pitched at level 7 of the National Qualifications Framework (NQF). The programme covered general design in the first year, followed by two years of specialisation in either Fashion, graphic or interior design. The Fashion design class started introductory Fashion design subjects at the beginning of the second year. The second-year class was chosen because its students were learning the fundamentals of pattern making and garment construction, and it was thought that attempts to facilitate learning would have the most impact on these students. It was hoped that the learning processes would equip the students with the core knowledge of pattern making and garment construction, providing them with the ability to apply that knowledge and skill later in their studies and careers.

3.6 Project one: the skirt brief

Project one of this study was the skirt brief. All seven students in the class group opted to take part in the study for this project. The data collection methods included questionnaires, observations, interviews, and a class discussion (see Table 3.1), as according to Farell (2016: 1), those methods allowed researchers to ask questions before, during and after the blended learning implementation. The data collection methods are discussed in reference to the research phases shown in Table 3.2.

3.6.1 Stage one data collection methods in project one

Stage one involved an assessment of the students' baseline knowledge by providing an understanding their previous experience of blended learning and their prior knowledge. The questionnaire had three sections: baseline knowledge, pattern making, and garment construction. This data collection instrument was administered via an online questionnaire at the start of the project.

The information gained in the baseline knowledge section gave insight into the students' prior knowledge of blended learning and their online capabilities as well as their access to an internet connection outside of the institution. Establishing students' baseline knowledge was important for implementing the blended learning approach in terms of their experiences of blended learning thus far. This allowed development of content that might address any shortcomings in their experiences and to ensure that each student started on an equal footing. It was also important to establish whether the students had access to the Internet off campus to complete the online content for homework. If they did not, they needed to be provided with alternative access to the online content provided online. The questions asked in this section were a combination of both closed and open-ended questions (for the questionnaire see Appendix E). The questions were broken down in the following way: Questions 1 and 2 asked about internet access on campus and at home. Questions 3 through 6 asked about students' experiences with Google Classroom (using the calendar, assignment and comment functions of the LMS). Questions 7 through 9 covered their experiences making videos (filming, devices used and uploading of content online). Questions 10 through 12 explored the students' experiences of blended learning (i.e. their likes and dislikes). A description of blended learning was provided at the beginning of the questionnaire to provide clarity to the students. Question 13 asked about the number of hours per week students spent completing their homework for the subject.

The final section allowed for the assessment of the students' preparedness for the brief by identifying any learning needs. The data gave insight into whether

any additional content needed to be added or changes needed to be made to the blended learning delivery. This section was broken up into two parts, pattern making and garment construction and involved open-ended questions. Question 14 and 15 asked about their garment construction experiences (processes which the struggled with and methods which they need help with or to work on). Questions 16 through 19 covered pattern making (their understanding, areas for improvement and any additional pattern making queries).

The data were collected by means of an online questionnaire on Google Forms. The questionnaires were conducted online to encourage the students to use the LMS. A link was shared on the LMS to navigate the students to the online questionnaire. The online platform allowed the students to answer anonymously, giving the students the ability to answer freely without fear of being identified. The LMS organised the completed questionnaires separately on Google Forms and were not directly assessable to the researcher from Google Classroom. Google Forms anonymised the students responses and provided aggregated data for analysis. The LMS allowed the researcher to keep track of which students had completed the questionnaire and who had not without revealing their individual answers.

3.6.2 Stage two data collection methods in project one

Stage two was the qualitative stage which involved the implementation of blended learning. This section will be discussed in two parts, starting with the development of the blended learning environment and then moving to the lecturer's experience of project one by means of the observation schedule and open-ended questions. Decisions about implementation of the blended learning approach to be made were based on the literature discussed in Chapter 2, the brief outcomes, outline document (lesson structures) and the lecturer's experience. This section explores the development of a framework for the blended learning delivery using Huang, Ma and Zhang (2008: 6) blended learning curriculum (BLC) model (Figure 2.1 found in Chapter 2) and the activity based blended learning model (Figure 2.2 found in Chapter 2). A more in-depth explanation of the application of the BLC model can be found in Appendix B.

The BLC model began with the pre-analysis, which focused on the characteristics of the learners, the knowledge taxonomy and the blended learning environment itself. The aim of the pre-analysis was to provide a starting point for the blended learning delivery. In this study, the pre-analysis involved an *analysis of learners' characteristics,* by providing an assessment of the learners' prior knowledge, learning styles and learning preferences. The students' prior knowledge was assessed in two ways, first from the lecturer's experience and then from the students' perspective. The lecturer's experience informed the assessment of what content had been covered in the first half of the year and provided her assessment of the students' learning styles and learning preferences. From the lecturer's perspective the students' learning styles and preferences were influenced by what they had been exposed to previously. To assess the students' experience, the researcher drew on the findings collected during the previous data collection stage, the quantitative stage.

Once there was an understanding what the students knew and how they learnt, the research had to assess their *knowledge taxonomy* in terms of defining what should be taught for the project. Each project consisted of three steps, the design phase, pattern making and the construction of the garment. Each step led into the other and was dependant on the success of the previous step. First, the students designed their garment, next, they broke their design down into the parts needed to construct the garment (the pattern), and finally, these parts were put together to create a final garment such as should reflect their initial design. The final stage of the pre-analysis involved the *assessment of the blended learning environment*. This meant defining the learning management system (LMS), which was Google Classroom, the LMS stipulated by the institution. Once the pre-analysis had been completed, a report was compiled which including a detailed table and written summary; this was then used to inform the second step in the BLC model, the design of the activities and resources for use in the blended environment.

The second part of the BLC model was the design of activities and resources stage. This involved the development of the content and approaches which were

needed to complete the blended learning design for the project. The stage consisted of three subcomponents: the design of the blended learning approach, the design and development of the resources, and the activity design. The subcomponents will be discussed separately in the section below.

The overall design of the blended learning approach predetermined the other two subcomponents by establishing the general objectives and activities for the blend. This was done by establishing the learning activities, the blended learning delivery strategy and the blended learning support. The *learning activities* needed to result in a change of behaviour through the students learning something they did not know before. In this study, the project brief specified the objectives and activities required to develop a skirt. The institution had provided the students with a brief document which stipulated the deliverables by providing a list of design details associated with skirts. The students needed to design a skirt (which aligned with the brief requirements) that could be translated into a pattern and finally cut and constructed into a finished garment. Once the students had completed their skirt, they needed to develop a reflection video demonstrating their newly acquired knowledge by articulating the processes. This allowed the students to make sense of what they were learning and to learn from their experiences (Moon 2013: 81). The students could also learn from each other's experiences by watching the videos which were posted on the LMS. A report, which was documented as a table and summary in Appendix E, was produced based on this section.

The constructivist pedagogy discussed in Chapter 2 was applied by developing a student-centred approach and using the flipped classroom and authentic learning theories. Video was used for content delivery to students (Charitopoulos *et al.* 2017: 2), providing them with demonstrations of the pattern making and garment construction processes associated with skirts. However, the demonstrations were presented in the same way as the past, breaking each process into smaller steps, describing and giving context to the processes which were being demonstrated.

The *blended learning support* was provided through a combination of face-to-face contact time and content presented on the LMS. The videos were uploaded onto a private playlist on the lecturer's YouTube channel, and the YouTube links were uploaded onto the LMS, where they were organised into groups to ensure that the students could easily navigate through the content. The video content allowed the students to practise the processes by sampling them at home prior to the lesson, which supported the principles of a flipped classroom. During the face-to-face contact time the students applied their newly acquired skills to their skirts under the lecturer's supervision.

The resources also needed to be designed and developed. This included selecting the content, developing the cases and the presentation of the design and development of the resources. The *content* that was needed for this project was established through the project brief requirements and the lecturer's experience. What needed to be covered was divided into six parts: skirts, technical drawings, specification sheets, pattern making, garment construction and professional finishing.

The next stage involved the *development of cases*, which considered how the content would be contextualized for the students. For the first project, all the content was centred around skirts which were purchased from local stores. These purchases had numerous design elements associated with skirts, which provided context to the content. This allowed the finished product to be shown first, before explaining the processes to achieve the finished result. The design elements were broken down into the technical aspects in the form of technical drawings (TDs), the pattern making process and the garment construction process.

The BLC model considered how the design and development of resources would be *presented*. All the processes were presented using videos covering the six parts of the content that needed to be delivered:

- skirts: showcased design elements of the purchased skirts;

- technical drawings: information presented based on the purchased skirts showcasing the technical aspects and annotations associated with those design elements;
- specification sheet development: what a specification sheet is and what it should include;
- pattern making: pattern development of the above designs, recapping skills already learnt and demonstrating new skills;
- garment construction: demonstrated the construction techniques associated with those design elements. Covering stitching, pressing and finishing;
- professional finishing: demonstrated the professional finishing and final presentation of their skirts which align with industry standards.

The third part of the design of activities and resources stage of the BLC model was the design of the activity. This involved the activity based blended learning model, a definition of the performances, the activity objectives, activity organisation, and finally, the assessment of the unit. The activity based blended learning model assisted in *designing the activities*.

The activity based blended learning model had four main components: lead-in, planning, acting, and reviewing. The lead-in stage was the starting point in the activity design. The objective of this stage was to demonstrate the task to the student. The objective of the planning stage was for the students to define the task for themselves. There are three subcomponents in this stage: define the problem, define the steps, and identify classmates with whom to collaborate. The acting stage dealt with the task itself and the fulfilment of the task-related requirements. The reviewing stage allowed the learners to share their newly constructed knowledge with their classmates and their lecturer. The model assisted in determining the order in which activities would occur, as well as how the students would engage with the content during the project. The model also gave insight into the process and flow of the project which took place over ten sessions or lessons. An in-depth explanation of how this model was applied in this study is provided in Chapters 4 and 5.

The next step in the design of activity stage involved the *definition of the performances*. The aim of this section was to organise the processes and content developed using the BLC model, by determining when the processes should be delivered. In this case, the project brief took place over four weeks, the first three weeks consisting of three sessions of contact time per week. Each session was an hour and 45 minutes, run as a single session and a double session each week. In the final fourth week, the students had a single session to submit and present their work. The first week needed to cover the design phase, fabric shopping and pattern making, followed by laying and cutting, as well as sampling of their fabric manipulation. During the second week the students needed to start constructing their skirts by sewing their fabric manipulation, zips and waistbands or facings. During the final week of construction, the students needed to complete their skirt by hemming their garments and applying professional finishing practices. In the final week, the students needed to produce their garments and reflection videos the students submitted their garments and reflection videos (for a breakdown per lesson refer to Chapter 5 p92).

The design of the activity objectives was the following step in designing the activity. The *activity objectives* gave insight into the goal of each lesson. In this study, the objectives were broken down into two categories, the learning objectives for the face-to-face contact time and the learning objectives for the self-regulated learning online. Each of these were broken down further into objectives for each session and the homework to prepare for the following session. The objectives gave insight into the type of learning that should take place during the session and the knowledge and skills the students should be able to demonstrate (for a per session breakdown refer to Chapter 5 p93).

Next, came the *activity organisation*, which focused on reviewing the objectives in the previous step. In this study, the activity organisation incorporated the second research phase, the qualitative stage. The observation schedule was used to assess each lesson from the lecturer's perspective, these observations being administered via Google Forms.

The final step in the design of activities section is an *assessment of the unit.* The aim of this was to assess the level of success of the blended learning approach. The assessment allowed for a review of the students' level of success and the success of the blended learning approach. The students' level of success was assessed through their reflection videos and the professionalism of the final garments. The success of the blended learning approach was assessed using the findings collected from the qualitative stage. The students' experiences of the blended learning approach were assessed through the third stage of the research, the reflective stage, where qualitative data were collected through interviews and a reflective exercise. This stage is expanded upon in the following sections.

The content produced by the BLC model led to a report to help guide the process and offered room for reflection on the implementation of blended learning. These reflections allowed the approach to be adjusted for the second project.

a. Observation schedule and questions in project one

Observations give insight into the activities of the people under study in their natural setting (Kawulich 2005: 2), and reflective journaling allows practitioners to improve and deepen their understanding of their teaching practice (Bassot 2016: 2). The observations allowed for the collection of qualitative data to give insight into the lecturer's experience of the blended learning approach.

Once the study began, the lecturer observed the students and documented her observations in a reflective journal. The reflective journal assisted with tracking the students' engagement, abilities, developing skillsets, and with assessing whether there were any gaps in the online content. The reflective journal was digitally completed on Google Forms at the end of each session, which allowed the journal entries to be organised chronologically and the data to be kept private and confidential. Pseudonyms were used to protect the students' privacy.

The reflective journal followed an observation schedule which consisted of 15 questions (for the observation schedule see Appendix E). Questions 1 and 2

asked about the students' engagement with the online content (their response and preparedness). Question 3 addressed the students' attendance for the face-to-face contact time. Questions 4 and 5 asked about the students' competencies based on the learning objectives (meeting them or not meeting them). Questions 6 through 8 focused on the face-to-face contact time (their engagement and ability to apply their knowledge). Questions 9 through 11 asked about their progress (from the previous lesson, in their knowledge and in their skillset during the brief and after completion). Question 12 inquired about short comings in the online content. Questions 13 and 14 covered areas of concern (problems and learning needs). Question 15 allowed for any additional comments that the lecturer may have had.

The data gathered during the qualitative stage allowed the lecturer to assess the blend of the blended learning offering an opportunity to make improvements to the blended learning delivery and the lesson plan for the following project. The improvements were based on the facilitator's experience and not the students' experience.

3.6.3 Stage three data collection methods in project one

Stage three was the reflective stage, where qualitative data were collected. This stage was divided into two parts: the interviews and a reflective exercise.

a. The interviews in project one

Open-ended questions were used in the interviews in order to gain an understanding of the students' experiences from their perspective. The interviews were one-on-one and took place during the last session of the project. They were conducted by a third party, who ensured that the students' answers were anonymised before giving the data to the researcher. This was done in an attempt to ensure that the teacher-student relationship did not affect their responses and protected the students' privacy by allowing the students to remain anonymous. The interviews followed the interview guide designed for this study (for the interview guide see Appendix E). Questions 1 through 3 explored the students' level of enjoyment (their likes and dislikes). Questions 4 through 6

asked the students about their homework experiences. Questions 7 through 12 asked questions about the online classroom (experience, level of enjoyment, problems, and clarity on the content). Questions 13 and 14 asked about their feelings on the flipped classroom. Question 15 addressed their opinion on the pace of the brief. Question 16 asked the students if they had any additional comments.

The questions helped the researcher to understand the experiences of the participants and the meanings they made from their experiences (Seidman 2006: 9). The interview sought to establish the students' engagement with the blended learning delivery, their level of enjoyment, and, lastly, the number of hours they spent on the online classroom and completing their deliverables. The qualitative answers collected during this stage became explanatory data, which was used to enhance the understanding of the initial qualitative stage. The previous stage allowed for an understanding of the lecturer's experience, and this stage provided insight into the observations by contrasting her experience with the students' experiences.

b. The reflective exercise in project one

Once the assignment had been submitted and assessed, the reflective exercise was conducted in class by means of a class discussion led by the lecturer. The reflective exercise was administered three weeks after the submission of the assignment, giving the students time reflect on their experiences. The students had received their assessments and had had time to reflect on the processes, read their written feedback and seen where they had excelled and what areas needed improving. Running the exercise straight after the students had submitted their assignments might have led to the students' stressed state skewing their answers.

The reflection process focused on the learning objectives and the blended learning process. The lecturer led a class discussion to explore the students' feelings towards what worked and what did not work, in order to gain insight into the students' opinions, so that she could align her improvements with her

observations and their opinions. The reflective exercise used the discussion guideline, which consisted of 17 questions (for the reflection guideline see Appendix E). Question 1 addressed their feelings towards blended learning. Questions 2 through 11 asked questions about the online content (their experiences, the classroom layout, the video layouts and video content). Question 12 asked the students which processes they would have preferred learning face-to-face. Question 13 asked about the appeal of blended learning. Questions 14 and 15 inquired about the sampling process and the application of their knowledge. Question 16 explored the value of the reflection videos. Question 17 asked the students whether they had collaborated with one another.

3.7 Project two: the shirt

Project two of the study was the shirt brief. As with project one, all seven students volunteered to participate in project two of the study. As discussed above, the data collection methods included questionnaires, observations, interviews and a reflective exercise, and are discussed with reference to the sequential exploratory phases shown in Table 3.2.

3.7.1 Stage one data collection methods in project two

Stage one of the research followed the same procedure as project one. During project two, the questionnaire gave insight into the baseline knowledge by focusing on their online capabilities and internet access. During this project the focus shifted away from their prior knowledge of blended learning and rather addressed their experiences with Google Classroom. In this instance, the baseline knowledge allowed for additional content to be developed, which addressed any shortcomings in their experiences, ensuring that each student had a good understanding of the LMS. It was crucial to assess if the students' access to the internet off campus had changed since the previous project. This stage consisted of a combination of closed and open-ended questions. Again, the researcher needed to identify any learning needs with regard to pattern making and garment construction by asking open-ended questions. The data gave insight into whether any additional content or changes needed to be added or

made to the blended learning delivery (for the questionnaire see Appendix E). The same platform as before was used to administer the online questionnaire.

3.7.2 Stage two data collection methods in project two

Stage two was the qualitative stage, which involved the implementation of blended learning. This section will be discussed in two parts, first, how the blended learning environment was adjusted for this project, and next, the observation schedule and questions.

The blended learning approach was reconsidered based on the findings of project one. The findings were combined with the brief outcomes, outlines and the lecturer's experience in developing this blended learning approach.

Again, the blended learning delivery was developed using Huang, Ma and Zhang (2008: 6) blended learning curriculum model (Figure 2.1) and the activity based blended learning model (Figure 2.2). This section will discuss only the areas which needed to be adapted or changed for project two; any areas which were not mentioned have did not change from as they were in the previous project. A more in-depth explanation of the application of the BLC model can be found in Appendix C.

In the second section of the BLC model, the design of activities and resources, is the design and development of resources. For project two, the *development of cases* step, which considered how the content would be contextualized for the students, was adapted. In the previous project, all the content was centred around the purchased garments. For this project, however, it was decided to present the content as puzzle pieces, allowing students to understand the relationship between the pieces and how the pieces could fit together in different contexts (Paulins and Moeller 2017: 9).

The BLC model also considered how the design and development of resources would be *presented*. All the processes were presented using videos covering the six parts of the content that needed to be delivered:

- shirts: explanations of the design elements;
- technical drawings: of design elements and technical aspects and annotations associated with those design elements;
- pattern making: a recap of the pattern making details that had been covered and demonstrations of new pattern making techniques associated with shirts;
- garment construction: covering the above design element's construction processes;
- professional finishing: recapping the practise of professional finishing, pressing, clipping threads, garment presentation, swing tags.

The design of the activity step focused on the *definition of performances,* which were adjusted to align with the project brief requirements.

The brief took place over the same amount of time as project one (10 sessions). The first week needed to cover the design phase and pattern making, followed by the laying and cutting of fabric, as well as sampling of their placket, yokes and pleats. During the second week the students needed to start constructing their shirts by sewing their plackets and patch pockets, assembling their garments, cuff plackets and sleeves, and hemming their shirts. During the final week of construction, the students needed to complete their shirt by sewing their collar and cuffs and applying professional finishes to their garment. During the three-week time period the students needed to film a reflection video demonstrating their processes and areas where they needed to solve problems and find solutions. Finally, the students needed to complete their reflection videos, articulating the processes they had followed. In the final week, the students submitted their garments and reflection videos. For a breakdown per lesson refer to Chapter 5.

Some of the BLC steps have not been mentioned here as the basis of the step did not change for this project but the content may have changed. More sections will be expanded on in Appendix C.

b. Observation schedule and questions in project two

The same observation schedule was used as in project one, to guide the lecturer in documenting her observations (for the observation schedule see Appendix E). The observations gave insight into the advantages and gaps in the blended learning approach, which formed part of the recommendations for future blended learning deliveries.

3.7.2 Stage three data collection methods in project two

Stage three was the reflective stage and was the second qualitative data collection method. This stage was divided into two parts: the interviews and a reflective exercise.

a. The interviews in project two

The interviews were again conducted by a third party and followed an interview guide which was adapted for project two (for the interview guide see Appendix E).

The questions allowed the researcher to gain a deeper understanding of the participants' experiences. The interview was aimed at understanding the students' engagement with this blended learning delivery approach, their level of enjoyment, and the number of hours they spent both on the online classroom and in completing their deliverable during this project. An additional question was added to ask the students which delivery approach they preferred, the approach from project one or project two, and why they preferred it.

b. The reflective exercise in project two

After the assignment had been completed, the researcher again conducted a reflective exercise during a class discussion, focusing on the learning objectives and the blended learning process. The discussion was used to explore the students' feelings towards this approach, and what worked and what did not work. The reflective exercise was adapted for project two (for the reflection guideline see Appendix E).

3.8 Data Analysis

The data gathered from each project were analysed separately to reduce the amount of data and to make sense of it (The Open University n.d: 13). In order for the data to be analysed, they were scanned and cleaned, allowing the researcher to assess if there were any "incomplete, inaccurate, inconsistent or irrelevant data" (Vithal and Jansen 2012: 27). From there, preliminary trends were identified to assist in organising the data, in order to make sense of the information by describing, comparing and categorising the findings. The findings were represented in tables and graphs to organise the multiple data collection methods (see Chapters 4 and 5).

During the study, four strands of data were collected and analysed. The quantitative data collected from the online questionnaires were organised into a table on Google Forms. The researcher represented the data in the form of graphs and tables to gain numerical and narrative data on the students' online experiences, pattern making and garment construction baseline knowledge. These data were analysed and informed the implementation and adaptation of the blended learning approach. The data gave insight into what parts of the blended learning approach needed to be adjusted to suit the students' needs and what needed to be added to the approach.

During the implementation of the blended learning approach for both projects, observations were conducted and documented, giving insight into the lecturer's experience. The observations were organised on Google Forms during the data collection process. The data were analysed and represented in tables. The data gave descriptive explanations of her observations. The experiences gave insight into her opinion of how the blended approach worked and gave insight into the gaps in the delivery method and content.

Once the brief was completed, the students participated in the reflective stage where interviews and a reflective exercise were conducted to assess their experience of the blended learning approach. The findings from the interviews

and reflections were represented in tables to organise the data. The researcher described, compared and categorised the findings.

The data collected and analysed from project one (the skirt) were used to inform the approach in project two (the shirt). The final findings of this study served as recommendations and improvements for future blended learning approaches for the pattern making and garment construction subject.

3.9 Trustworthiness

Mixed methods research merges the complementary strengths of quantitative and qualitative approaches and mitigates their weaknesses (Onwuegbuzie and Johnson 2006: 51). This allowed use of quantitative data to gain an understanding of the phenomenon before collecting narrative data which explored the experiences of the phenomenon from the participants and researcher. The study sought to gather high quality data by collecting data that were valid and credible (Teddlie and Tashakkori 2009: 209). As this study was carried out within the constructivist paradigm (naturalistic) rather than a positivist (scientific) approach, the different aspects of trustworthiness will be discussed. Guba's approach (1981: 80) depicts the four aspects of trustworthiness in a naturalist approach in relation to the criteria set by positivist research. These four aspects seek to establish trustworthiness in the following ways:

- credibility (in preference to internal validity),
- transferability (in preference to external validity/generalizability),
- dependability (in preference to reliability),
- confirmability (in preference to objectivity).

3.9.1 Credibility

The truth value is established through assessing credibility (Guba 1981: 80). This is done by verifying the credibility of the findings and interpretations with various sources to establish how congruent the findings are with reality (Shenton 2004: 64). In this study, credibility was ensured by drawing on both quantitative and qualitative data, which mitigated the weaknesses and bias of a single method (Johnson and Onwuegbuzie 2004: 24) by corroborating the data with other

methods to gain a clearer and more credible data set. Multiple data collection techniques (questionnaires, observations, interviews, and class discussions) were triangulated, which allowed for a comprehensive understanding of the phenomenon. Triangulation made it possible to compare the findings in order to see commonalities and inconsistencies. The varied data collection methods also ensured that the students had multiple opportunities and ways to voice their opinions, views or feelings.

3.9.2 Transferability

The applicability of the study is established through transferability (Guba 1981: 80). The findings cannot be generalised; rather, the research strives to form working hypotheses that can be transferred from one context to another (Guba 1981: 80). While the data in this study is not generalizable to other Fashion institutions, it has relevance because aspects such as the students' attitude towards blended learning and the approach to teaching practical disciplines can be transferred to other situations such as tuition in private colleges in South Africa, other Fashion institutions, or practical courses where the addition of blended learning may be being considered.

3.9.3 Dependability

The consistency is assessed by the dependability of the research (Guba 1981: 80). The research should be well documented to allow future researchers to repeat the work of the study even if it does not achieve the same results. The study should be set out to work as a prototype for future studies (Shenton 2004: 71). The processes for this study were documented to express the development of the blended learning delivery mode as accurately and clearly as possible, and also included the questionnaires, observation schedules and interview documents. The same process was followed for both projects, and this has been clearly outlined for use in further research.

3.9.4 Confirmability

Neutrality is achieved by assessing the confirmability of the research (Guba 1981: 80). To achieve confirmability, the researcher strived to ensure that the findings

were the opinions and perspectives of the participants in the study rather than the perceptions of the researcher (Shenton 2004: 71). It is acknowledged that one cannot be completely neutral or unbiased. However, an attempt was made to mitigate the biases as much as possible. An attempt was also made to present information that was gathered and analysed during the study in a non-biased manner, whether the results were positive or negative. Confirmability was achieved as far as possible by having the interviews transcribed to ensure that what the students said was captured verbatim, and the interviews were conducted and transcribed by a third party to ensure that the researcher's biases did not influence the data. The data were collected by different sources, the lecturer's observations and the students' opinions, which allowed a more balanced and less biased view to be presented.

3.10 Reporting of research results

As discussed in Chapter 2 (pp 33 and 35), the BLC model was the basis for the design, implementation and assessment of the blended learning delivery method used in this study, and was also used as the framework for the data collection and analysis (see Appendix B and Appendix C). However, in reporting the findings of this study, the BLC was broken down into three phases, namely, pre-analysis, design and instructional assessment (see Figure 3.1).

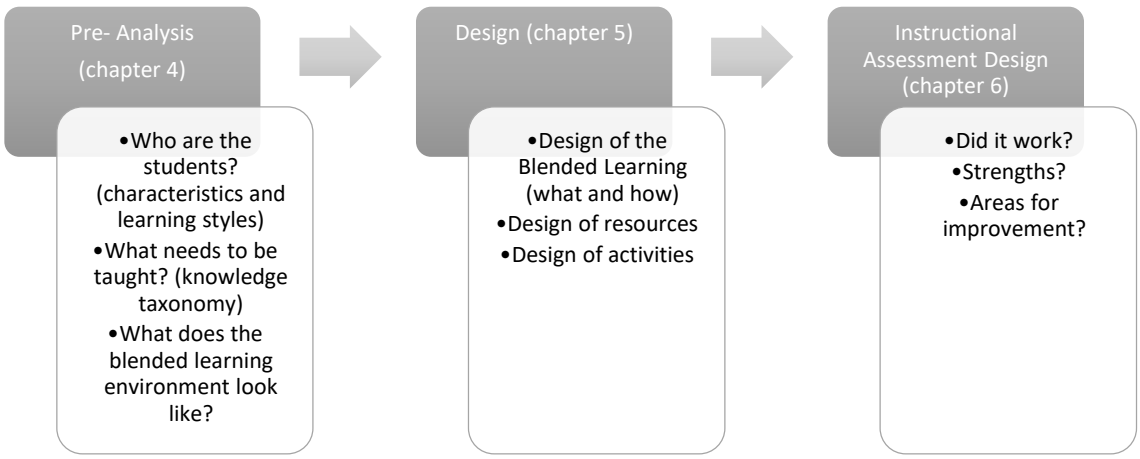


Figure 3.1 The three stages of the BLC model (adapted from Huang, Ma and Zhang's (2008: 6) BLC Model)

This was done so as to present the phases of instructional design carried out in the project more clearly. The data gathered is thus presented in the next three chapters. Chapter 4: Pre-analysis of blended learning design, Chapter 5: Blended learning design, and Chapter 6: Instructional assessment of blended learning design. It must be noted, however, that the data for project one was used to modify/correct the blended learning delivery design used in project two if/as necessary. For this reason, the design of project two is discussed after the feedback given on project one. Overall feedback on the effectiveness of the blended learning delivery used in this study is then provided in Chapter 6 (i.e. Instructional assessment of blended learning design).

3.11 Conclusion

The elements of the research design described in this chapter can all be seen to be congruent with the research paradigm chosen, constructivism. Constructivism itself was chosen as the orientation because of its focus on how knowledge is co-constructed by participants, for this reason it has been associated with online and blended leaning from the outset. The mixed methods methodology offered the advantage of swiftly revealing prior knowledge before the blended learning approach was implemented, as well as more in-depth qualitative methods to probe the participants' experiences. The case study can be seen to be an appropriate approach for a close study of how blended learning was experienced in a specific vocational learning context within a limited time frame, and the sequential exploratory strategy made it possible to explore how learning developed chronologically in this context. The specific methods used, interviews, discussions, observation and reflective exercises, were all interactive, and engaged participants in the co-creation of an account showing how they experienced the implementation of blended learning.

CHAPTER 4: PRE-ANALYSIS OF BLENDED LEARNING DESIGN

4.1 Introduction

This chapter describes the pre-analysis phase for project one in which the nature and needs of the target student audience were identified and the type of the intended blended learning delivery which would meet these needs was clarified. The pre-analysis involved an analysis of learners' characteristics, by assessing the students' learning styles and preferences, and their prior knowledge. The students' prior knowledge was assessed in two ways, first from the lecturer's experience and then from the students' perspective. The lecturer's 'knowledge practice' informed the assessment of what content had been covered in the first half of the year and provided her with an assessment of the students' learning styles and learning preferences. The data collected from the questionnaires provided insight into the students' experiences with pattern making, garment construction, and blended learning (see Appendix B). The data also suggested what form the blended learning environment would take in terms of the type of content and interactions needed for this particular project.

4.2 The target student audience

The cohort had completed the first five months of their second year of the fashion design degree, and the students' learning styles and preferences were limited to their experiences thus far. Prior to initiating this project, the students had been exposed only to a teacher-centred approach to learning in the pattern making and garment construction class. Hands on demonstrations were conducted during the face-to-face contact time, to provide the students with the knowledge required to fulfil the project, and their homework requirement was to complete their work. Blended learning had not been implemented in the pattern making and garment construction class before, therefore the students had been exposed to this approach only in other subjects. Moreover, at the institution involved, lecturers were encouraged to use blended learning in their classrooms in any way they wished, and as a result the students' experiences may well have varied. Project

one was the students' first experience of blended learning for pattern making and garment construction, and therefore the project served as an introduction for the students. This allowed the students to experience, not only the approach, but also the new roles, responsibilities, and requirements of themselves and the lecturer which the approach required. The findings of project one would be used to adjust the blended learning approach to align with the students' needs and the lecturers' observations. Project two would test those adjustments and offer a better understanding of the students' needs, because they had experienced blended learning before, in project one.

4.3 The knowledge taxonomy required

The knowledge taxonomy, in terms of defining what should have been taught for the project was assessed based on the lecturer's 'knowledge practice' of pattern making and garment construction, and the additional knowledge taxonomy as shown by learner feedback from the questionnaire (see Appendix B p141).

4.3.1 The lecturer's 'knowledge practice' of pattern making and garment construction

A key part of the knowledge taxonomy required was the lecturer/researcher's actual experience, that is, 'knowledge practice' (Melrose 2003: 14), of pattern making and garment construction, including her expertise in assigning class projects. In this study, each project consisted of three steps: design, pattern making and the construction of the garment. Each step led into one another and was dependent on the success of the previous step. First, the students designed their garment; next, they broke their design down into the parts needed to construct the garment, which was their pattern; and finally those parts were constructed together to create a final garment which (one hoped) should reflect their starting design.

The design process involved the development of a specification sheet, which was a technical document that provided the students with a roadmap to their design (see Figure 4.1). The students had to design a skirt which was their own creative interpretation of their previous knowledge while trying new design elements that

they had not been exposed to. The specification sheet included a technical drawing, annotations, fabric samples, trim samples and technical information. The students had to include a technical drawing of the front and back of their skirt design, which was annotated, allowing them to consider the design details and elements of their garment. A sample of the fabric and trims as well as a description of these elements was included as a reference. The construction process document was included on the back of the specification sheet, which allowed the students to consider the construction of the garment, prior to making it (see Figure 4.2). As the students were constructing their own unique design, they each had their own sequence of operations, which they needed to categorically explain. This forced the students to think about the construction process prior to making their garment. This information directed the pattern making process, where they had to draw on their knowledge, reinterpret it and apply it to their design.

Figure 4.1 Example of a specification sheet

SPEC SHEET
DESIGN: H&M Plaid Skirt
CONSTRUCTION PROCESS:
Sew darts
Face the asymmetric panel
Hem the asymmetric panel
Sew side seams together and sandwich the asymmetric panel in between
Sew up the CB panel to the zip notch
Prepare and attach the facing
Insert the zip
Hand slip stitch the facing
Tack the facing in place
Blind hem the hem

Figure 4.2 Example of the construction process document (on rear of specification sheet)

The cohort's prior pattern making knowledge included a basic understanding of pattern manipulation techniques, including added fullness and dart manipulation with regard to skirts. There were some pattern making techniques which had not been covered and resources needed to be provided to ensure they had the knowledge needed to fulfil the requirements of the project brief. In the case of the skirt, the students needed to understand several new processes, and previously covered processes needed to be clarified and recapped. These new processes included the following: belt loops, laying, cutting, and fabric marking, while the areas that needed to be recapped included patch pockets, waistbands, and notches.

The students had worked with patch pockets in the past, which had given them some experience in making a pattern for, and sewing, a patch pocket. However, they had had no experience in marking a pattern with drill holes as an indicator of where the pocket should go. These markings are transferred onto the garment with chalk to allow for the correct and intended alignment of the pocket. The previous term's content had covered straight and shaped waistbands. However, during a pattern test the students had completed previously, it was evident that there was a lack of understanding of how to make a waistband pattern. Content needed to be included to provide clarity on the different types of waistbands and

processes involved in developing a waistband pattern. Although the students had some experience in pattern notches, the researcher wanted to reinforce the importance of using these. Pattern notches, also known as pattern landmarks, are markings on a pattern which assist in the alignment of pieces during the construction process. Without these markings the construction of a garment can become inaccurate and more difficult. As the skirt was the first garment the students were constructing, the content needed to cover the process of laying pattern pieces on fabric, and cutting and marking the fabric. The process of laying pattern pieces is a technical process, which required students to work accurately by considering the grain of the fabric, the resulting pattern piece direction and achieving minimal waste. The students needed to understand how to cut fabric accurately, ensuring that the pattern pieces did not move, and that they were cut as close to the pattern piece as possible. Lastly, the students needed to experience pattern marking, which was the process of transferring pattern landmarks to the cut fabric. These markings are done with tailor's chalk or with tailor's tacks, to transfer the necessary information to assist in the construction of the garment.

The students had already had experience in basic sewing construction skills or processes, including seams, pleats, tucks, gathers, hems, patch pockets, and overlocking. However, as the students had not constructed a garment before, their construction knowledge was limited to general sewing knowledge obtained through making items such as bags. The garment construction lesson content needed to cover garment construction processes that the students had not experienced previously, as the brief exposed the students to making a garment to fit the female figure for the first time. The students therefore had to consider how the skirt functioned in actual use and the design elements they needed to include to make a functional garment that someone could wear. First, the students needed to consider the process of making the garment fit by means of fabric suppression, either by including darts or panel lines (see Figure 4.3).

Figure 4.3 An example of darts and panel lines (adapted from Wilsonshar 2019; Hugo Boss 2019)

The students also needed to think about how they would neaten the waistline of the skirt by either adding a waistband or facing (see Figure 4.4).

Figure 4.4 An example of a waistband and facing (adapted from Pretty Little Thing 2019; Asos 2019)

Considerations had to be made as to how the wearer would get into the skirt. For this project, the closure had to be a zip. The students could choose between four different types of zips: a lapped zip, invisible zip, exposed zip, or an open-ended zip (see Figure 4.5).

Figure 4.5 An example of different zips (adapted from Colette Patterns 2019; Our Second Nature 2019; Topshop 2019; Liilgal 2019)

Depending on the length of the skirt, the students had to consider how the wearer would actually walk in the skirt. If the skirt was fitted and extended to or below the knee, a vent or a slit needed to be added to the skirt (see Figure 4.6). This removed the restriction of the fitted silhouette by opening the hemline, allowing the wearer to take a full stride while walking.

The hem of the skirt could not be left as a raw edge, and for this reason, consideration had to be made for hem finishes, which were determined by the type of fabric the students had chosen to use. The four different types of hem finishes which they could use were as follows: a double turned up hem, a pin hem, a blind hem, and a rolled hem (see Figure 4.7).

Figure 4.6 An example of a vent and slit (adapted from Styleholic 2019; Shop Bop 2019)

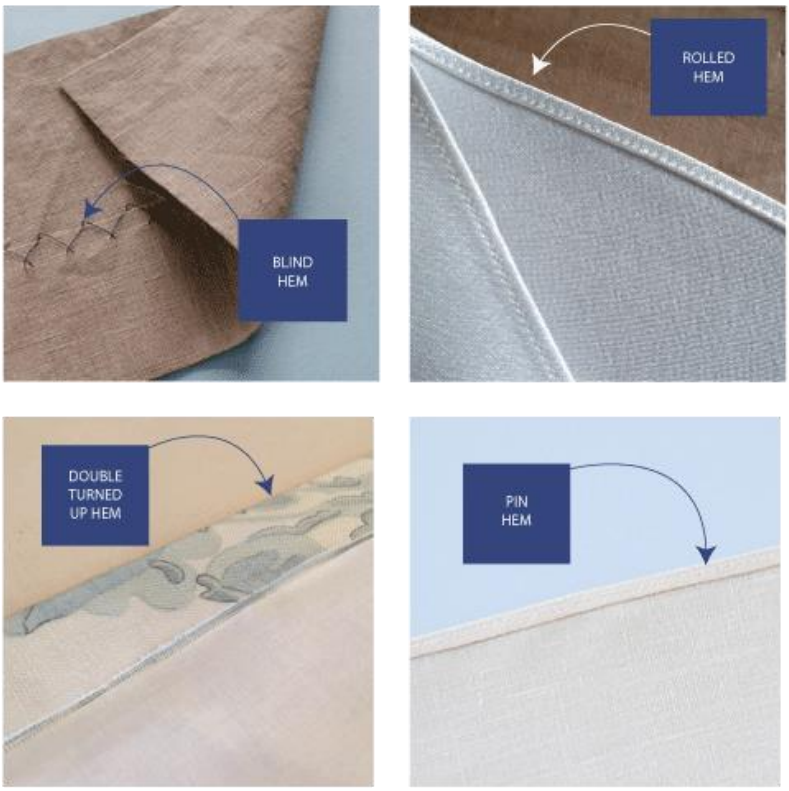


Figure 4.7 Examples of hem finishes (adapted from The Thread 2019; Makery 2019; Alice and Ann 2019; The Thread 2019)

Lastly, if the students chose to, they could add a belt to their design (see Figure 4.8).

Figure 4.8 Examples of belts (adapted from Elisabetta Franchi 2019; Popsugar 2019)

The content developed for project one would need to focus on showing the processes involved in constructing the design elements described above. Demonstrations would need to be provided to the students not only to show them how to construct a skirt, but also to explain the standard of work required of them, in terms of the professional practices they need to master in order to become fashion designers. These practices include the ability to visualise, accuracy, professional finishing, and garment fit. The students needed to develop the ability to visualise the final garment and to break the garment down mentally in order to understand the sequence in which they would assemble their garments, knowing which parts to sew first or before another part could be sewn. The students needed to develop an understanding of the importance of accuracy in constructing a garment, and how using pattern landmarks could assist in achieving an accurate garment. The process of professionally finishing a garment was also an important aspect for the students to master. This involved the final presentation of the garment, ensuring that the garment was of a professional standard by clipping lose threads, sewing on hooks and eyes and pressing (i.e. ironing) their garments. Lastly, the most important practice was fit,

because the garment needed to fit the female figure in order for a woman to be able to wear the garment.

4.3.2 Additions to knowledge taxonomy as shown by learner feedback

As well as the lecturer's 'knowledge practice' of pattern making and garment construction, the students' feedback as given in questionnaires showed that there were additions required in the knowledge taxonomy. These included resources needed to compensate for gaps in their skills and knowledge where they had either not learned techniques or had learned them imperfectly, or needed opportunities to refresh or recap knowledge previously learned**.** The open-ended questions in the questionnaire gave insight into the gaps in the students' pattern making and garment construction knowledge, in particular, if there were any pattern making principles or construction processes the students did not understand or needed revised (see Appendix B p148).

a. Pattern making processes

The data revealed that there were various pattern making processes which the students needed assistance with. For three students the process involved in translating a technical drawing into a pattern was something with which they wanted help; it is a skillset which takes students time and practise to develop. A possible solution to address the students' needs would be to include content which showed the students how a technical drawing guides the pattern making process. The students would also have the opportunity to practise this skillset during this project, as they would use their technical drawings on their specification sheets to guide them through the pattern making process. There were also a variety of pattern making processes with which five students mentioned they needed assistance, including the following:

- pattern accuracy, in terms of pattern information, grainlines, and seam allowance accuracy and neatness;
- the recapping of the pattern making process associated with added fullness; and
- waistline finishes, in terms of straight and shaped waistbands, and facings.

These processes would be added to the list of areas which needed to be recapped, which was drawn up by lecturer.

b. Garment construction processes

Prior to this project, the students had completed two sewing projects using the institution's industrial sewing equipment. The questionnaires revealed that all seven students had struggled with the construction processes. For three students, working with the industrial sewing machines was challenging. My lecturing experience had suggested that many students had found working with industrial sewing machines daunting, finding them fast and complicated to work with. However, with practise, their confidence improved. Video content could be used to recap how to use the industrial sewing machines. A few of the construction processes that the students mentioned included the following:

- stitch size;
- back stitching; and
- top stitching.

These processes were basic construction methods that the students needed to master as they are used in almost all construction processes. In order to assist the students in understanding these processes, video demonstrations with detailed explanations could be used. Sampling these processes before applying them to their garments would allow the students to work on developing this skillset further.

The more complex construction processes which the students needed help with included the following:

- hand embroidery; and
- pleats and gathers.

In the previous project the students had had to apply hand embroidery to their designs, and, although they were not required to do hand embroidery as such again, they needed to be confident with their hand sewing abilities. There were many construction processes which required some form of hand sewing, be it slip stitching seams closed or blind hemming garments. These hand stitched processes could be demonstrated using video content, with explanations of when

and how these processes would be used. Lastly, two students mentioned processes associated with added fullness: gathers and pleats. These two processes would not be recapped, because video content had been previously supplied to the students addressing these construction processes.

4.4 The blended learning environment

The final stage of the pre-analysis involved the assessment of the blended learning environment proposed for this study in terms of the approach used in the blended learning delivery, and the learning management system (LMS). In order to make the best use of the limited contact time the blended learning delivery would incorporate the flipped classroom approach whereby the independent-study time would be used to gain knowledge by means of the online classroom and the face-to-face contact time would be used to apply this knowledge with the lecturer's facilitation. This meant that the theory could be accessed and acquired in the students' own time, and that application of theory in actual pattern making and garment construction would have the benefit of personalised face-to-face instruction where students' actual problems could be identified and dealt with directly if/as needed. The online classroom would use the LMS used by the institution, Google Classroom. This LMS had a variety of features which could assist with the organisation of the online classroom, while allowing the students to engage with content, the lecturer and peers. In this study the blended learning environment would make use of a variety of these features. Assignments or questions would be added allowing students to engage with the online learning environment by submitting their assignments or answering the questions online and receiving immediate feedback. The LMS allows the upload of material containing links to content and videos which would be arranged into topics to organise the classroom. The Google Calendar link on the LMS would allow the students access to a workflow schedule which could guide them on a by-lesson basis.

4.4.1 Areas of blended learning which needed to be addressed based on the lecturer's 'knowledge practice'

The lecturer's judgement and experience, as well as the literature, were used to assess aspects which needed to be included in the blended learning delivery. The students needed the opportunity to collaborate with one another, building an environment where they learned to work together as they work towards becoming professionals. The LMS would offer the students the opportunity to connect outside of the classroom with one another, working together within the online platform to create a sense of belonging to a team in the hopes of overcoming the feelings of isolation which Yick *et al.* (2018: 179) note could occur within an online classroom. The students also needed to be assisted with their time management, because the delivery approach was new to them. The students had no previous experience with the flipped classroom approach, and had therefore never used their independent study time for anything other than completing a project. This approach required the students to use this time to prepare for a lesson, which essentially meant that their homework had to be done prior to a lesson. In order for the students to know what work they had to do to prepare for a lesson, a workflow schedule was required. The schedule would be loaded onto Google Calendar giving the students access to a per lesson breakdown of the lesson and homework objectives for the duration of the project.

4.4.2 Areas of blended learning which needed to be addressed based on the learners' feedback

The data collected from the questionnaires provided insight into the students' prior experience with blended learning and their learning preferences. This data provided considerations which needed to be taken into account while developing the blended learning delivery approach. To address the students' needs the blended learning environment needed to:

- include varied information; and
- include video content.

The findings showed that all the students had some level of familiarity with the LMS, but that there were some features with which they had little to no experience. It was important to ensure that students were comfortable using the

features, as it was thought that this would be a key factor in whether blended learning would be accepted by the students. The following content needed to be developed to guide students in completing the blended learning tasks:

- a demonstration video showing the students how to navigate Google Calendar and how it would be used as the workflow schedule for the brief;
- a demonstration on how to upload assignments on the LMS; and
- a demonstration video on how to upload a video to YouTube and how to share the link to Google Classroom.

4.5 Conclusion

The aim of the pre-analysis was to provide insight into the students being taught and their learning styles and needs. Firstly, the nature of the subject itself, its theory, content, procedures and practices need to be known, as well as the sequence instruction will follow, which must be considered in some detail. Next, the context and purpose (including not only degree requirements but also institutional resources and time frames) to some extent dictate how the subject will be taught and learned. The context includes not only available resources for teaching and learning but also the technical infrastructure, including Internet access and provision of a suitable LMS. Finally, the abilities and needs of the target audience need to be considered, including previous experience and knowledge of not only the intended delivery method but also prior subject knowledge and experience. In requiring the stages pre-analysis, design and instructional assessment blended learning delivery is not that different from any other pedagogical approach, with the proviso that experienced educators using face-to-face delivery often follow these stages intuitively rather than consciously, and can switch, reinforce, repair or even omit aspects during delivery. Blended learning delivery, however, needs to be much more detailed and thorough in the planning and any necessary adjustment stages, as the BLC and Activity based blended learning model described in Chapter 2 illustrate. What Chapter 4 has shown is the extent to which the content and nature of the blended learning delivery approach must be thought through in advance. The insights gained in the Pre-Analysis stage were used as a starting point for the design of the blended learning delivery programme, which is discussed in Chapter 5.

CHAPTER 5: BLENDED LEARNING DESIGN

5.1 Introduction

The design of the blended learning delivery had to be considered in great detail in advance, because it could not be adjusted during the project, except in minor adjustments. This meant that, prior to the start of the project, the delivery and content design had to be planned and adjusted, pre-empting the students' needs. The LMS had to be preloaded and organised before commencing the project, because of two factors: the content development took a large amount of time and could not be done in between lessons, and the students needed access to all the content at the beginning of the project, in order to see the project in full, giving them access to the workflow schedule.

5.2 Design of blended learning for project one

When designing the blended learning approach, two aspects had to be considered: the delivery design in terms of the teaching approach, and the delivery support which considered how the students would interact with the blended learning approach.

5.2.1 Blended learning delivery design

During the development of the blended learning delivery design the literature was considered, focusing on the constructivist pedagogy, and using the flipped classroom and authentic learning theories. Previous to introducing blended learning delivery, a teacher-centred approach had been used. However, during this study the teaching approach aligned with the constructivist belief that teaching should be learner-centred, that is, learners acquire knowledge by constructing their own knowledge. The lecturer also considered how she would deliver the content to the students. To accommodate both the research aims and the students' needs, the content was presented as videos on the LMS (Charitopoulos *et al.* 2017: 2). The lecturer used her 'knowledge practice' to develop the video content, providing the students with demonstrations of the pattern making and garment construction knowledge necessary to complete their

garments. The demonstrations were done in the same way as the past, breaking each process into smaller steps, describing and giving context to the processes she was demonstrating (see Appendix B p155 for examples). The students used the video content to construct their own knowledge in a flipped classroom approach, where they were required to gain knowledge before class, using the demonstrations and practising the new processes by sampling the techniques. The face-to-face contact time then became focused on applying their newly acquired knowledge. This allowed the lecturer to facilitate the learning process by helping the students navigate their new knowledge.

5.2.2 Blended learning delivery support

Considerations had to be made in terms of how the students would be supported through the blended learning delivery for both the online classroom and the face-to-face classroom.

a. Online classroom

The online classroom used the features of the LMS and was divided into topics with subcategories which provided the students with content covering all aspects related to skirt design, pattern making and garment construction. The demonstration videos were uploaded on to a private playlist on a YouTube channel, and these links were then added on to the LMS. This content was organised into various topics, which were arranged to reflect the order of the project, by first focusing on the design aspects, then pattern making and lastly garment construction. This allowed the students to navigate easily through the content. Figure 5.1 shows an example of the LMS interface containing a list of all the topics.

Each topic contained the content which was specific to that topic. It was then further broken down into subcategories which focused on a process. For example, the topic zips had seven subcategories of processes (see Figure 5.2). Each subcategory was then broken down into steps for the students to follow. The lecturer broke each video down further providing the time stamps for the

different processes within a step. Figure 5.3 shows an example of the exposed zip subcategory and four videos demonstrating each step.

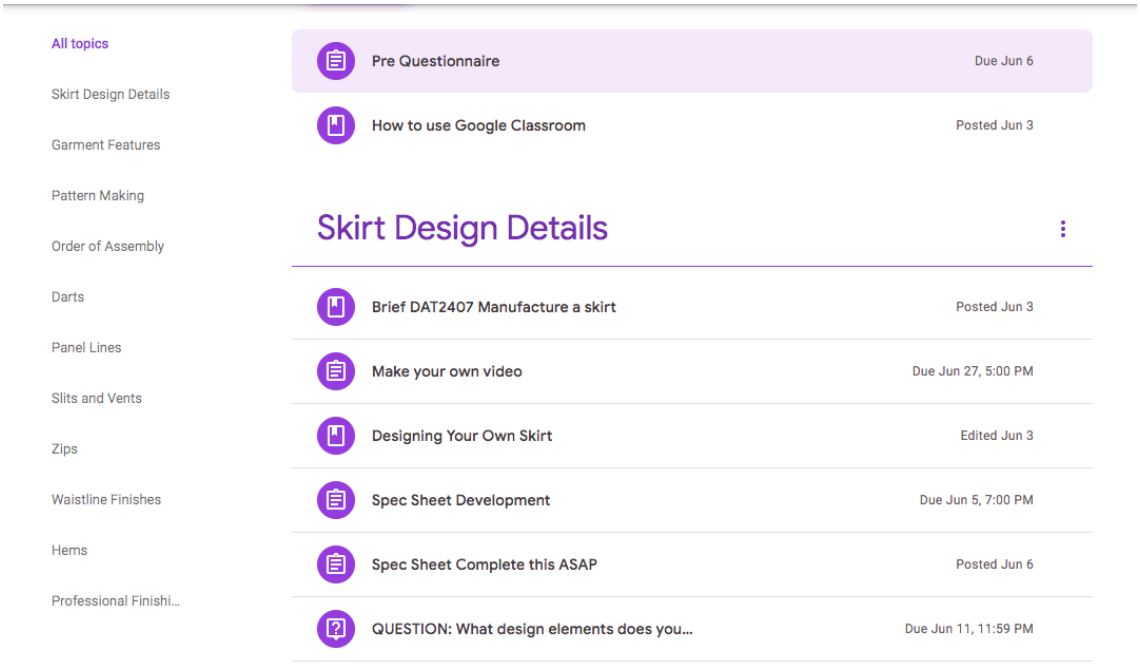


Figure 5.1 Google Classroom topics

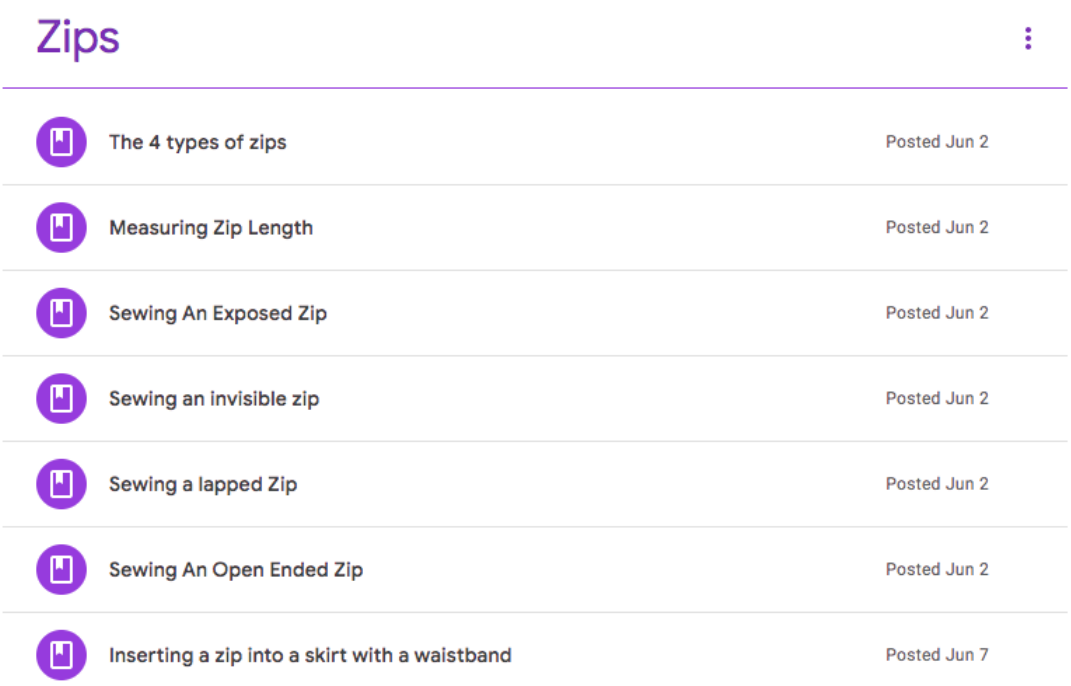


Figure 5.2 Google Classroom zip topic

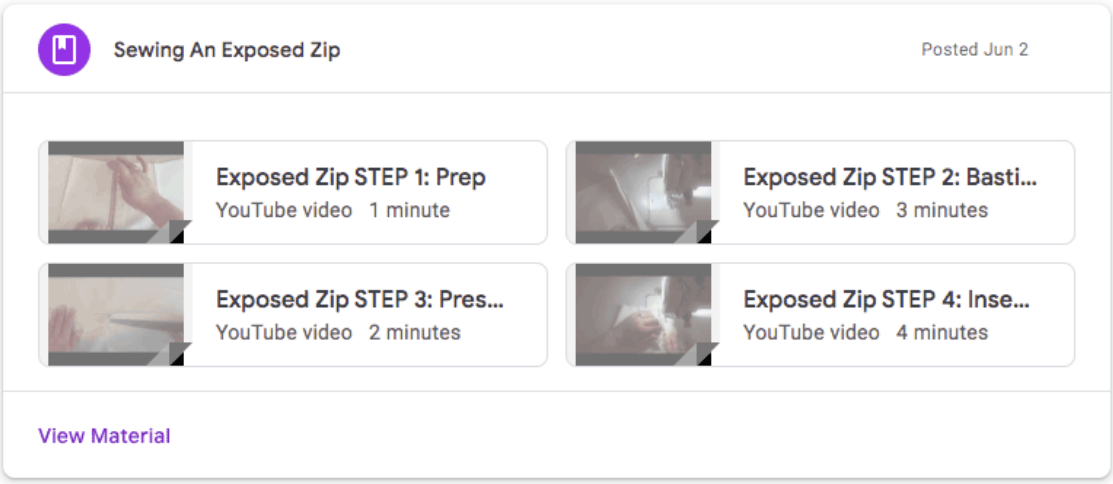


Figure 5.3 Google Classroom subcategory

The online classroom also needed to assist the students with their time management by providing them with guidelines in the form of a workflow schedule on the Google Calendar which was linked to the LMS. The workflow schedule explained what was expected from them during the face-to-face contact time and what they were required to do for homework, in preparation for the following lesson. Figure 5.4 shows an example of the workflow schedule for lesson one.

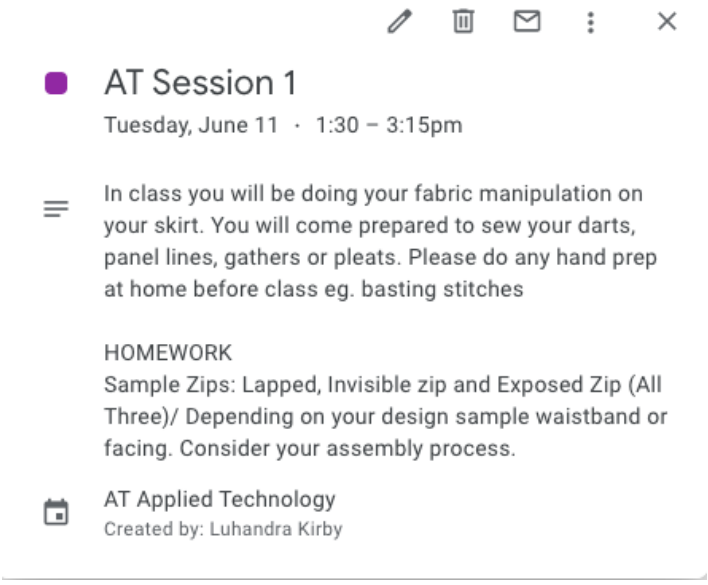


Figure 5.4 Google Calendar workflow schedule

b. Face-to-face classroom

In order to align with the principles of a flipped classroom, the face-to-face contact time was used to support the students' application of knowledge by facilitating their learning and assisting them in the navigation of their new knowledge. In order to gain the necessary knowledge, homework time was used to watch the video content and to practise the processes by sampling the steps prior to applying them in class.

5.3 Design of resources for project one

The resources for project one had to be developed around the institutional project specifications. Therefore before addressing the types of resources needed for the project, the project details are discussed.

5.3.1 Details of the project

In this study, project one was guided by the institutional brief document which expressed the objectives and deliverables for the skirt project. The deliverables provided the students with a list of design details which needed to be part of their skirts, which included the following: a waistband or facing, fabric manipulation, a zip, a hem, and any other features they desired. The project followed four phases: design, pattern making, garment construction (which was stipulated by the institution) and a reflection video (which was an additional requirement included by the lecturer). The students needed to design a skirt (i.e. which aligned with the brief requirements) that could be translated into a pattern and cut and constructed into a finished garment. Once the students had completed their garment and had experienced all the processes involved, they had to film a reflection video to document their process.

The students started the brief by developing a specification sheet for their design. This informed the pattern making process, where the students interpreted their unique design into a pattern, developing pattern pieces with pattern landmarks and technical information. The pattern pieces were cut into fabric pieces that could be constructed together to form a garment which reflected their original

design. Once the students had completed their skirt, they developed a reflection video sharing their unique design and construction experience with their peers. The video allowed the students to demonstrate their newly acquired knowledge by articulating the processes. This helped the students to make sense of what they were learning and to learn from their experiences (Moon 2013: 81), developing a deeper understanding by recalling the information and articulating their processes, while using the new terminology they had learn. The students could learn from each other's experiences by watching the videos, which were shared on the LMS.

5.3.2 Resource development

The development of the resources also had to consider the literature on authentic learning activities while adapting it to suit this project. The authentic activities and project details were used to develop content while considering the presentation of the resources for the blended learning approach.

a. Authentic activities

Before the content was developed, the various learning activities involved needed to be considered. The students were striving to become professionals in their field of practice, and therefore the activities in which they were engaging needed to be authentic in creating an environment which reflected the fashion industry. To assist in developing this authentic environment Herrington, the ten characteristics of an authentic activity framework were used (Oliver and Reeves 2003: 4). Table 5.1 describes the ten characteristics of an authentic activity and how these activities were applied to this project.

Table 5.1 Ten characteristics of an authentic activity for project one

	Ten characteristics of an authentic activity	How these characteristics are applied in this study
1	Have real-world relevance.	Several skirts were purchased from local stores. The skirts showed the professional finish required of the students. These completed garments were used to present the information or learning material to the students.

2	Activities are ill-defined. Requiring students to define the tasks and sub-tasks needed to complete the activity.	Each student had their own unique design which resulted in each student having a unique learning process. The students were required to complete a design, produce a pattern, and cut and construct a garment. The students needed to draw on their previous knowledge to create a technical drawing and to construct a pattern. The blended learning classroom content provided the students with the core knowledge necessary, rather than tailored information for their individual needs. They needed to sift through the content and establish what was relevant to them.
3	Comprised of complex tasks to be investigated by students over a sustained period of time.	This was the first brief that required the students to make a garment. The students had to complete a skirt which they had not done before which was a complex task. The project took place over a sustained period as they had three weeks to complete the deliverables.
4	Provide an opportunity for students to examine the task from different perspectives, using a variety of resources.	The students needed to approach the task from a variety of different perspectives or roles. The students had to approach the task from a designer's point of view, then as a pattern maker, and then as a seamstress. The students also required different resources: design, pattern making and garment construction. The students had to reflect on the task and share what they had learnt with their peers and the lecturer, exposing them to each other's perspectives and experiences.
5	Provide the opportunity for collaboration.	Collaboration was encouraged through a design elements buddy up system. The students had to find a partner who had the same design element and they became each other's sounding board for that process.
6	Provide the opportunity for reflection.	The students made reflection videos expressing the knowledge and skills they had obtained. The students had to articulate the processes they had followed.
7	Activities that can be integrated and applied across different disciplines.	Through the development of specification sheets, the students learnt the importance of accuracy in their technical drawings and annotations. This knowledge could be applied in other subjects, such as their design subject.
8	Activities which are seamlessly integrated	The assessment criteria were prescribed, and the activities were developed to align to the

	with assessment.	assessment criteria.
9	Create polished products which are valuable in their own right rather than as preparation for something else.	The students needed to create a professionally finished skirt which was complete and wearable.
10	Allow for competing solutions and diverse outcomes.	Students were encouraged to look at their own garments to see how things are constructed and to make their own decisions on which method to use.

b. Content development

As the project had three steps, design, pattern making, and garment construction, the content needed to address the learning requirements of each. However, as the three steps led into one another, the content needed to work together as a whole, rather than as isolated steps. In order to link the content and to contextualize it for the students, the lecturer drew on the previous section's authentic activity and used the purchased skirts, which gave real-world relevance by showing the professional finish and numerous design details. This allowed the lecturer to show the finished product first and then explain the processes involved in each step to achieve the finished result.

(i) Selecting contents

The content was determined by the project brief requirements and the lecturer's 'knowledge practice'. The three project steps were divided into six parts which needed to be addressed, these included: design details, technical drawings, specification sheets, pattern making, garment construction, and professional finishing. These six parts of content were presented as videos on the LMS.

- The purchased skirts were used as examples demonstrating the following design details: straight waistbands, shaped waistbands, facings, exposed zips, lapped zips, invisible zips, open-ended zips, beltloops, belts, patch pockets, gathers, sewing darts, pleats, blind hems, rolled hems, pin hems, and double turned up hems.
- Technical drawings (TD) of the purchased skirts were presented to the

students showing the above design details visually on a technical flat with annotations.

- The specification sheets presented the TDs, annotations, fabric samples, trim samples and technical details of the purchased skirts.
- The pattern making processes which had been covered in the previous term were recapped and new processes were demonstrated.
- The garment construction processes associated with the skirt design elements were demonstrated.
- The professional finishing process covered the practice of finishing a garment to a professional standard by pressing, clipping threads, and the final presentation of the garment with a swing tag.

(ii) Content presentation

In order to illustrate how the purchased skirts interlinked the six parts, an example of a skirt is presented below. The purchased skirts were analysed, and the design details were broken down into the technical aspects, in the form of a TD. For example, Figure 5.5 shows the design detail document which had a photograph of the tweed skirt, with its technical drawing and detailed annotations.

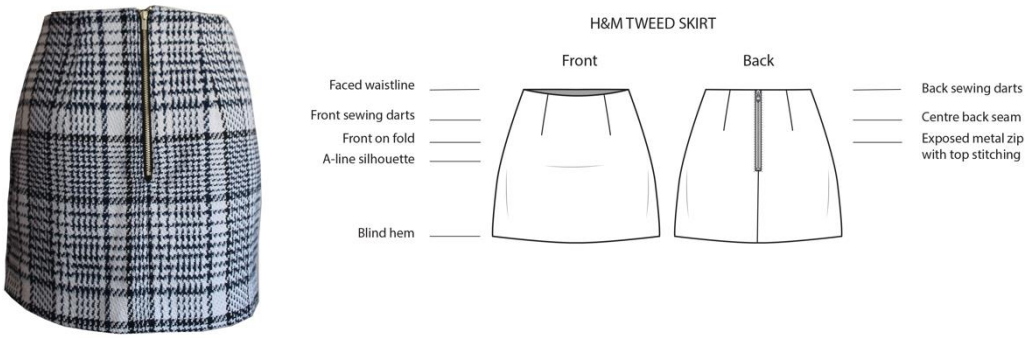
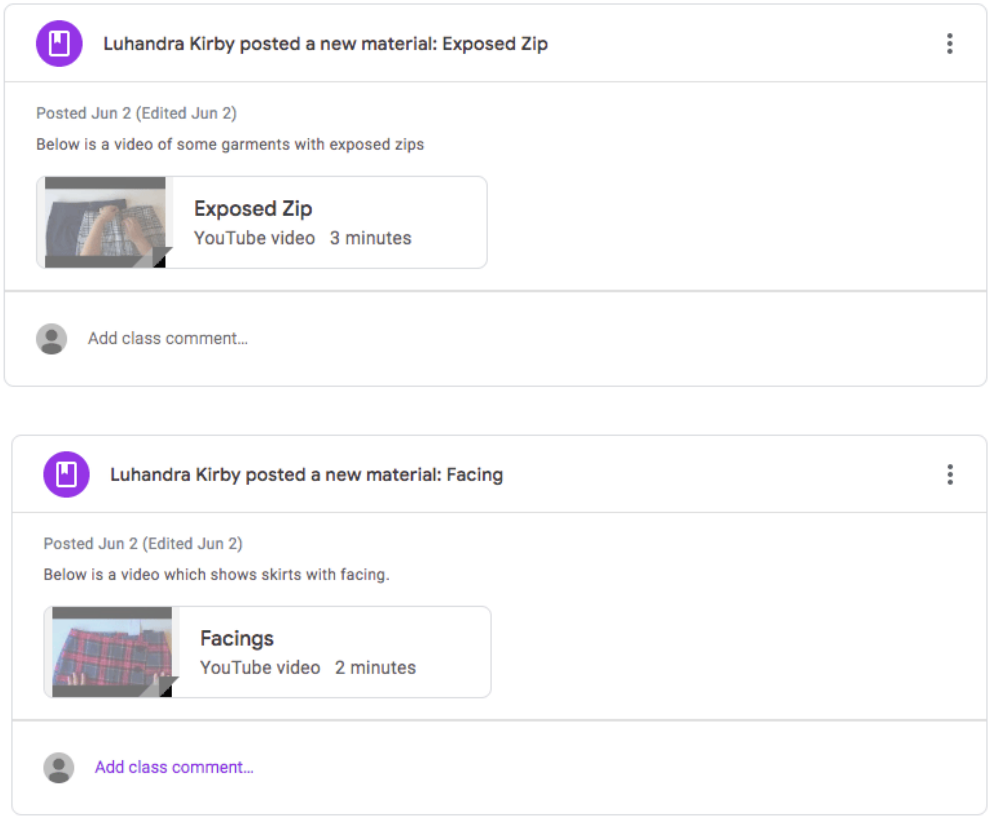


Figure 5.5 Tweed skirt design detail document

This type of document was used to describe the design details of the different skirts. The tweed skirt was an A-line skirt with sewing darts for suppression. The

waistline was finished with facing and the hemline was finished with a blind hem. This skirt had a metal exposed zip as its closure.

The tweed skirt was also used to demonstrate a variety of garment features. The videos which were recorded to demonstrate garment features used garments with similar features to explain the technical terminology, the functionality, and professional finish of the feature. The various garments were compared and provided an opportunity to discuss the differences or similarities of the features. For example, the tweed skirt was used in the exposed zip video, where it was compared to another exposed zip. The tweed skirt's zip was fully lined with a zip guard whereas the other skirt had a simple exposed zip without lining. In the facing video the skirt was compared to another skirt which did not have lining attached to the facing. This skirt was also used in the blind hem video, where it was compared to a skirt with a blind hem and a vent. Figure 5.6 demonstrates the three videos which the tweed skirt was used in to showcase different design elements.



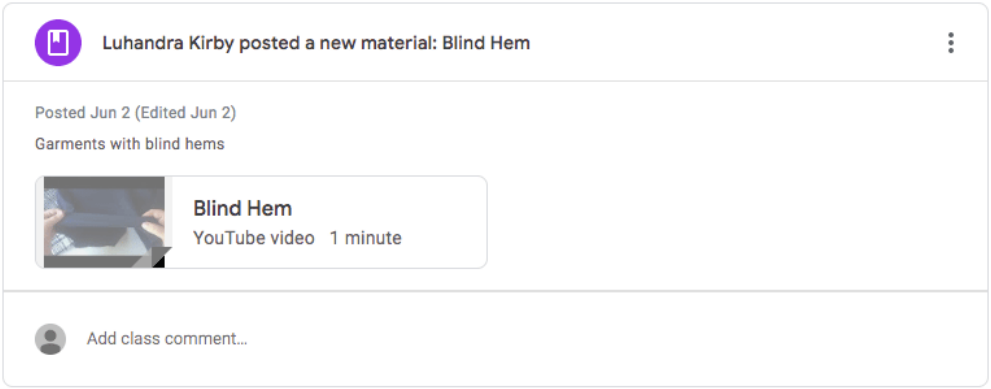


Figure 5.6 An example of the garment feature videos

Using the tweed skirt, a pattern was made to demonstrate the process of translating a TD into a working pattern and a master pattern. Figure 5.7 shows an example of the pattern making video for the tweed skirt.

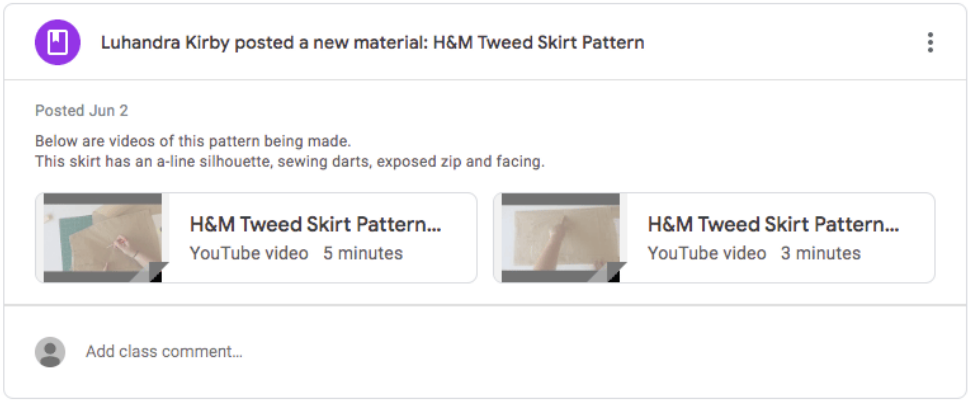


Figure 5.7 An example of the pattern making videos

From the pattern, fabric pieces were cut and used to demonstrate the step-by-step construction processes of sewing a: dart, facing, exposed zip, and blind hem. Figure 5.8 shows examples of these construction processes which were associated with the tweed skirt.

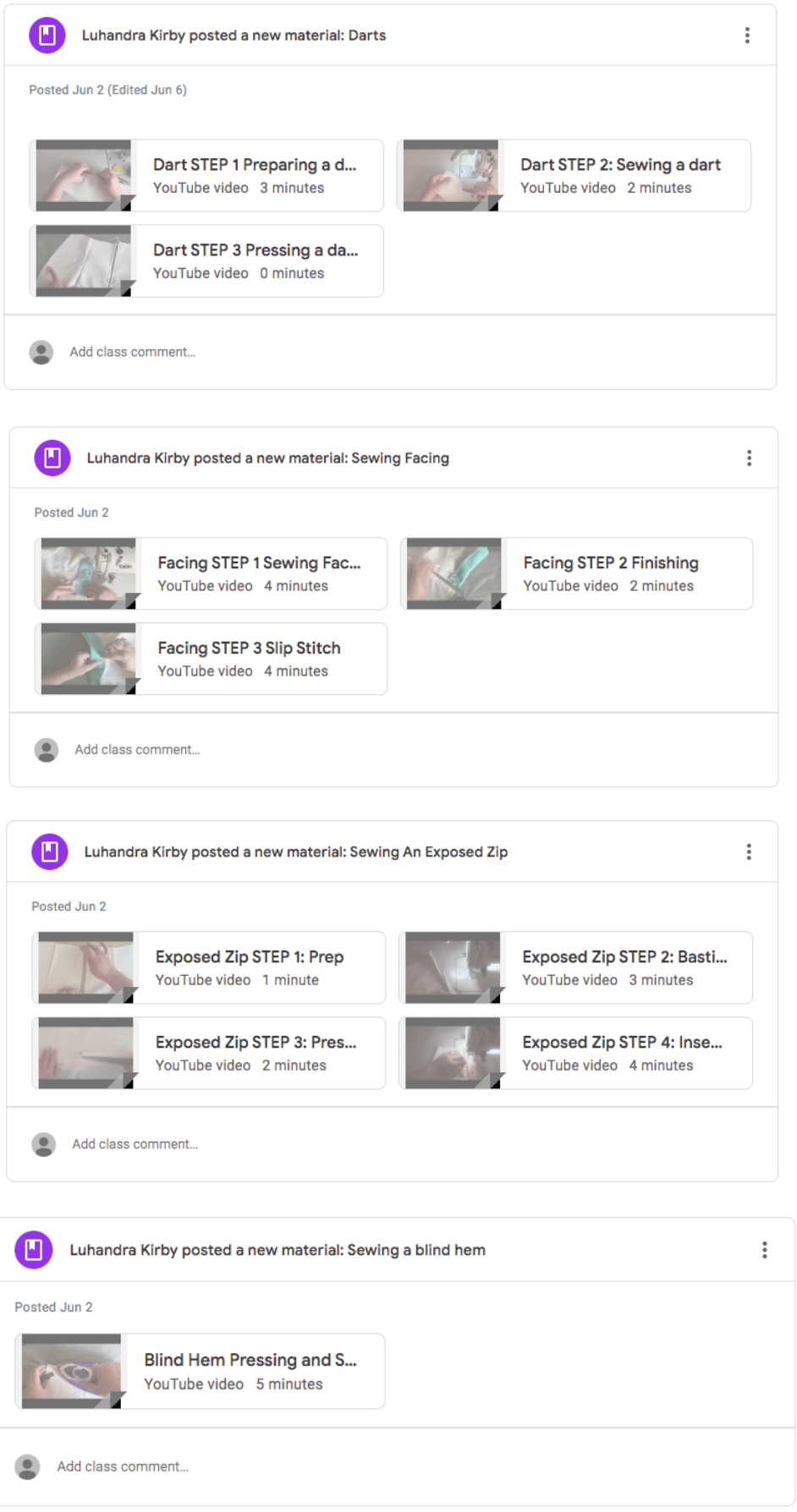


Figure 5.8 An example of the garment construction videos

5.4 Design of activities for project one

The design of the activities needed to consider how to organise the processes and content that had been developed, to align with the projects requirements and duration. In this study, the project brief took place over four weeks, where the first three weeks consisted of three sessions of contact time per week. Each session was an hour and 45 minutes, run as a single session and a double session each week. In the fourth and final week the students had a single session to submit and present their work.

5.4.1 Lesson activities

The first week covered the design phase, fabric shopping and pattern making. Followed by laying and cutting, as well as sampling of their fabric manipulation. During the second week the students started constructing their skirts by sewing their fabric manipulation, zips and waistbands or facings. During the final week of construction, the students completed their skirt by hemming their garments and applying professional finishes. Finally, the students produced their reflection videos and submitted it along with their garments. Table 5.2 offers a breakdown of the activities for the face-to-face contact time and the homework time.

Table 5.2 Lesson activities for project one

Session	Contact time (face-to-face)	Homework (online)
Week 1: Session 1 *(Lesson 1)*	• Brief introduction • Design your own skirt	• Complete questionnaire • Complete style analysis • Complete technical drawing with annotations
Week 1: Session 2 *(Lesson 2)*	• Fabric shopping	
Week 1: Session 3 *(Lesson 3)*	• Master pattern	• Lay and cut patterns • Sample fabric manipulation

Week 2: Session 1 *(Lesson 4)*	• Sew the fabric manipulation on their skirt	• Sample zips: lapped, invisible and exposed • OR sample waistband (whichever comes first in their assembly process
Week 2: Session 2 & 3 *(Lesson 5 & 6)*	• Insert their zip into their skirt • OR sew their waistband on their skirt	• Sample facings and waistbands • OR sample zips: lapped, invisible and exposed
Week 3: Session 1 *(Lesson 7)*	• Sewing the waistband or facing onto the skirt • OR inserting the zip	• Sample hems: blind, rolled and double turned up hem
Week 3: Session 2 *(Lesson 8)*	• Sew the hem on their garment	
Week 3: Session 3 *(Lesson 9)*	• Professional finishing	• Complete reflection video
Week 4: Session 1 *(Lesson 10)*	• Submit garment • Submit reflection video • Take part in interviews	

5.4.2 Activity objectives

After establishing the lesson activities, the activity objectives/goal of each lesson had to be considered. In this study, the objectives were broken down into two categories, the learning objectives for the face-to-face contact time and the learning objectives for the independent learning online. Each of these were broken down further into objectives for each session and their homework which followed that session. The objectives gave insight into the type of learning that took place during the session and the knowledge and skills the students should

have demonstrated. Table 5.3 offers a breakdown of each lesson's objectives for the face-to-face contact time and the homework time.

Table 5.3 Lesson objectives for project one

Session	Contact time learning objectives	Homework time learning objectives
Week 1: Session 1 (Lesson 1)	• Demonstrate knowledge to design a skirt that meets the brief requirements. • Demonstrate the ability to design a skirt which they could construct. • Demonstrate the ability to design a skirt which pushes their creative bounds.	• Demonstrate the ability to create an accurate technical drawing with annotations. • Demonstrate the ability to apply their knowledge and to create a style analysis. • Create a style analysis which fulfils their design, containing all the design elements from their skirt.
Week 1: Session 2 (Lesson 2)	• Given that the students have not completed a textile module yet, the students demonstrate the ability to use their general knowledge gained from their own clothes and choose a fabric appropriate for their skirt design. • Demonstrate aesthetic consideration in trim selection.	
Week 1: Session 3 (Lesson 3)	• Demonstrate the ability to create an accurate master pattern which represents their design. • Demonstrate the ability to add all pattern landmarks. • Demonstrate the ability to apply the correct seam allowances based on their design elements i.e. zips, hems.	• Demonstrate the ability to follow a video and to accurately lay pattern pieces which lie on a straight grainline and cut fabric neatly and accurately. • Demonstrate the ability sample their respective fabric manipulation technique.

Week 2: Session 1 (Lesson 4)	• Demonstrate their new fabric manipulation knowledge and apply it during the session to their garment.	• Demonstrate the ability to sample three different types of zip closures. Understanding the different seam allowance requirements and accuracy. • OR to demonstrate the ability to prepare and sew an accurate waistband or facing sample.
Week 2: Session 2 & 3 (Lesson 5 & 6)	• Demonstrate the ability to apply their new zip knowledge and to sew a neat and professional zip and or waistband and facing.	• Demonstrate the ability to prepare and sew and accurate waistband or facing sample. • OR demonstrate the ability to sample three different types of zip closures. Understanding the different seam allowance requirements and accuracy.
Week 3: Session 1 (Lesson 7)	• Demonstrate the ability to apply their new waistband or facing knowledge or to sew a neat and professional zip.	• Demonstrate the ability to sample three different types of hems neatly and professionally. • Demonstrate the ability to prepare the necessary elements needed to complete their garment.
Week 3: Session 2 (Lesson 8)	• Demonstrate the ability to apply their knowledge to their skirt and to create a neat and professional hem.	
Week 3: Session 3 (Lesson 9)	• Demonstrate the ability to prepare the necessary elements needed to complete their garment.	• Demonstrate the ability to record a video using the medium of their choice • Create a polished professional video • Upload a video to YouTube
Week 4: Session 1 (Lesson 10)	• Demonstrate the ability to articulate their new knowledge in terms of: • pattern making process, landmarks and fabric manipulation.	

	• Garment construction assembly process. • One interesting construction process learnt while making their skirt.	

5.5 Plan of delivery for project one

The previous sections established what content needed to be developed, how the content would be presented and the requirements for each lesson. The plan of delivery serves to address the roles of the lecturer as facilitator and the students' roles as active participants in their learning process. This is done by using the BLC's activity based blended learning model, which had four stages: lead-in, planning, acting and reviewing. The model gave insight into the process and flow of the project which took place over ten sessions or lessons. A discussion on how these four stages were implemented in the study is offered.

5.5.1 Leading in

The lead-in stage was the starting point in the activity design. The objective of this stage was to demonstrate the task to the student. There were four sub-components to this stage:

- *Describe the aims of the task to the students.* During the first lesson of the project, the lecturer went through the brief document with the students. The written brief document was in the semester notes and described the outcomes, assessment criteria and brief requirements. This document was copied and uploaded onto the Google Classroom for the students to refer to. By the end of the lesson all the students understood what was required of them to fulfil this brief.
- *Show the task by examples.* The purchased skirts were filmed and used to present and explain the design elements associated with skirts. The videos also showed the expected level of professional finish required of the students at the end of the project. The content allowed the students to have a better understanding of the task and provided them with the terminology, functionality and finish of the garment they had to construct.

- *Show resources provided.* The content the students needed to fulfil the task were provided in the form of videos and uploaded onto the LMS and organised in categories. This content covered explanations of the terminology and functionality of skirts as well as the pattern making and garment construction techniques necessary to construct a skirt.
- *Make arrangements.* The project was broken down lesson by lesson on the Google Calendar. Each lesson was broken down with the activity for the face-to-face contact time and what they were expected to do for homework in preparation for the following lesson.

5.5.2 Planning

The objective of the planning stage required the students to define the task for themselves. There are three subcomponents in this stage: define the problem, define the steps, and to identify classmates to collaborate with. During this study the three subcomponents were carried out in the following manner:

- The students were required to define their own *design problem* by completing a specification sheet which included a technical drawing of their unique design, annotations, design details, and fabric and trim swatches. During this process the students broke down their design by identifying their individual design elements.
- The students were expected to *define their steps*. This was done on the specification sheet as well, where they were required to specify their construction or assembly process. The students were provided with several videos which broke down the assembly process for the purchased skirts. The students needed to analyse the information provided to them and extract the relevant information to determine their own unique assembly process.
- The students had to *identify* classmates to collaborate with. Using their design elements, the students found classmates with the same design element. Together in pairs or as a group they were each other's support system while sampling the design element. This collaboration process was included to help the students feel connected during the

online homework process.

5.5.3 Acting

The acting stage dealt with the task itself and the fulfilment of the task related requirements.

During this study the three subcomponents were carried out in the following manner:

- The students had to collect information which was applicable to their specific design task. The video content provided the students with general information, and the students extracted the information that was relevant to their design.
- The students carried on with the task by making samples of the design element's construction processes for homework. They had to master the new skills before applying them to their garment in class.
- The students solved their design problem by constructing a garment using the knowledge they had gained during the project.

5.5.4 Reviewing

The reviewing stage allowed the learners to share their newly constructed knowledge with their classmates and their lecturer.

During this study the three subcomponents were carried out in the following manner:

- The students were required to make presentations. This stage was two-fold, firstly, the students presented their skirts in a professional manner by pressing their garment, clipping lose threads and hanging it on a hanger with a swing tag. Secondly, they recorded a reflection video and uploaded it to the LMS. The videos allowed the students to share their newly acquired knowledge with their peers. In their videos, they explained the pattern making processes and principles that they had applied, and the construction and assembly processes they followed. Lastly, they explained an interesting construction process which they followed.
- The students reviewed the project by taking part in one-on-one interviews with a third-party answering questions about the processes and their

experiences thereof.

- Additionally, the lecturer reviewed the students work, providing each student with an assessment sheet which had an indicator of their marks as well as written feedback discussing areas where they had done well as well as areas which needed improving.

5.6 Analysis of project one

In order to analyse the successes and shortcomings of the blended learning approach for this project, the experiences of both the lecturer and the students are crucial in gaining a holistic understanding.

5.6.1 Analysis from the lecturer's experience

For project one, the students were observed during each lesson (see Appendix E). The data showed that the students were resistant towards the new teaching and learning approach, which aligned with the literature that suggested the additional responsibilities, added workload, and new delivery could cause students to resist (Charitopoulos *et al.* 2017: 6; Gedik, Kiraz and Ozden 2012: 103) (see Appendix B p162-175). Shekhar *et al.* (2015: 597) states that students show their resistance in three different ways. During this project the all the students showed their resistance by either: passively engaging, being partially compliant, or showing open resistance. At the start of the project all the students showed their resistance through passive engagement by not engaging with the homework or lesson requirements, nor the collaborative exercises. Once the students got further into the project, they started to show partial compliance by somewhat engaging with the blended learning and flipped classroom approach, however, they did so with little enthusiasm, and were stressed during the lesson. The passive engagement impacted the students' preparedness for the remainder of the project and even though they had started to engage with blended learning and the flipped classroom, they were not applying these approaches correctly. The students were using the lesson time to gain knowledge instead of applying knowledge. For two students, however, they showed open resistance by complaining about the blended learning approach and the flipped classroom, in front of their peers. These two students wanted to be taught in the same manner

as the past, because they wanted to be told what to do rather than seeking knowledge for themselves.

In order to mitigate this resistance, project two was implemented and analysed. This project was the students' second experience of blended learning and as such was no longer something new to them. To address the areas which the students were resistant towards Tharayil et al.'s (2018: 11) suggestions were reconsidered. Two of the areas which needed to be addressed was a way to encourage the students to take part in asking questions, and designing activities which encouraged student participation. For project two, the activities were redesigned to force the students to collaborate with one another by participating in group exercises within the face-to-face contact time, where the students would teach each other and asks each other questions. As the students had resisted completing their reflection videos, because they felt it took too much time, they were instead required to film a 1-minute video at the end of each lesson to capture the processes they were following.

The observation revealed areas of the content that needed to be addressed in order to assist the students in being professionals. For the design phase, the students needed to be encouraged, and needed to learn the importance of a specification sheet which guides all three phases. In terms of the pattern making phase, the importance of the pattern information had to be addressed. During project one many students did not add this information to each pattern piece, which resulted in confusion during the construction process because they could not identify which piece was which. For the garment construction phase several areas needed to be considered. The value of the sampling process needed to be reinforced, because sampling allowed students to practise new processes, in order to gain confidence before applying them to their designs. Another area is the importance of accuracy and fit as these garments should fit a standard size in order for someone to wear the garments. Lastly, pressing (ironing) was an area which many students skipped over, which resulted in unprofessionally finished garments.

5.6.2 Analysis from the learners' experience

The data from the interviews and reflective exercise gave insight into the students' experiences (Appendix B pp 176-194). An area which affected the students' ability to engage with blended learning was their Wi-Fi connectivity, because the videos were only available online. One of the students suggested sharing the YouTube playlists with the class. This would allow them to download the content when on campus and let them to view the content offline. The lecturer was unaware of this feature, as the literature stated in the previous chapters, the lecturer was a digital immigrant (Prensky 2001: 4). A digital native had to share her knowledge with the lecturer, improving the way she learns and in turn this study. Another area which the students did not enjoy was the way in which the content was contextualised. The students struggled to extract the content which was relevant to their designs and as a result were seeking contextual content which was more in line with their designs instead of global knowledge. This needed to be considered carefully in order to ensure that the students' needs for tailored content was met, while still providing them with all the information they needed on the field of study. In terms of the blended learning approach the students were seeking a combination of face-to-face demonstrations and online video demonstrations. The students were seeking an opportunity to see the demonstrations in real life, in order to see the process, look and feel the samples and to ask any questions before they had to do it on their own for homework. Due to the nature of the project and the time constraints, it was not possible to demonstrate every process, therefore it was important to consider which processes needed to be demonstrated during the face-to-face contact time. There were two areas of the blended learning approach that the students did not enjoy. This included the flipped classroom approach and the collaboration process. Although the students did not enjoy the flipped classroom approach, the lecturer wanted to apply it again in the next project because she had noted the students' knowledge and standard of work improved because of the approach. In terms of the collaboration process, the lecturer felt that the process mimicked the real-world, and needed to be included in their learning process. However, the collaborative approach needed to be revised in order to encourage students to collaborate in different ways that would be more enjoyable to them.

5.7 Design of blended learning for project two

The assessment of project one was used to adjust and improve the approach for project two. The design of the blended learning approach for project two followed the same process as project one (see Appendix C p195 for a full report).

5.7.1 Blended learning delivery design for project two

The blended learning delivery design did not have major changes from project one to project two. Rather, slight adjustments were made to better suit the students' needs, which meant that some features needed to be added to the online and face-to-face classrooms.

5.7.2 Blended learning delivery support for project two

The delivery support considered both the online classroom and the face-to-face classroom.

a. Online classroom

The online classroom used the same layout as project one. However, it included an additional topic, which gave the students direct access to the YouTube playlists on pattern making and garment construction (Figure 5.9 shows an example of the garment construction YouTube playlist). The playlists were structured in the same order as the content on the LMS, allowing the students to work directly off YouTube if they chose to do so. The playlists also allowed the students to download the content and view it offline.

In project one the students did not engage with the workflow schedule, and, as a result struggled with their time management. In order to make it easier for the students in project two, they were encouraged to download the Google Calendar Application on their cell phones. By syncing the application to their phones, the students would be notified of the lesson and homework objectives (Figure 5.10 shows an example of the Google Calendar Application and the workflow schedule).

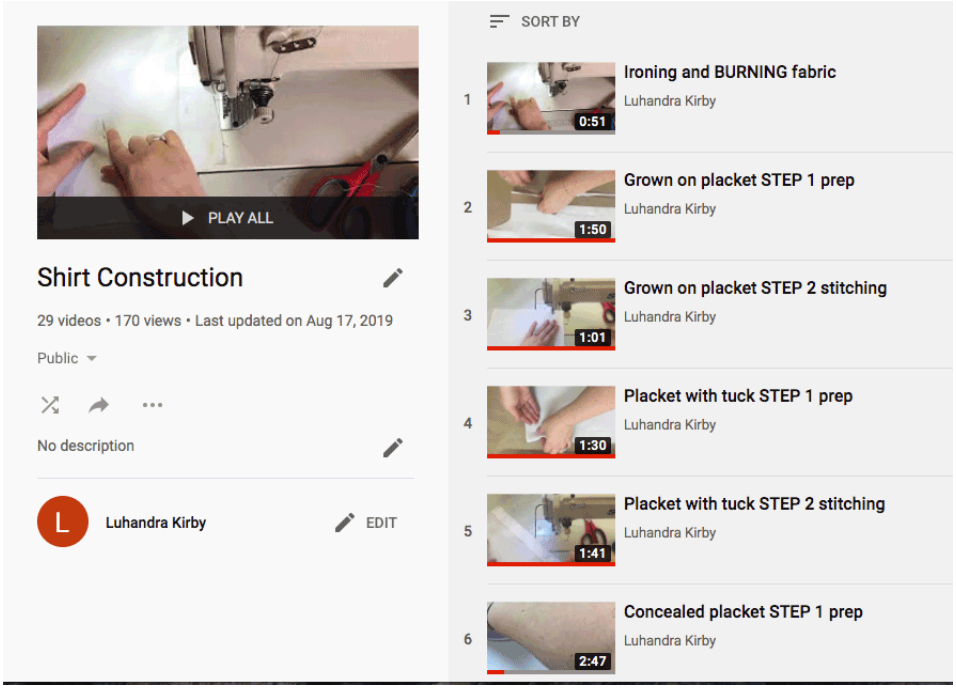


Figure 5.9 An example of the YouTube playlist

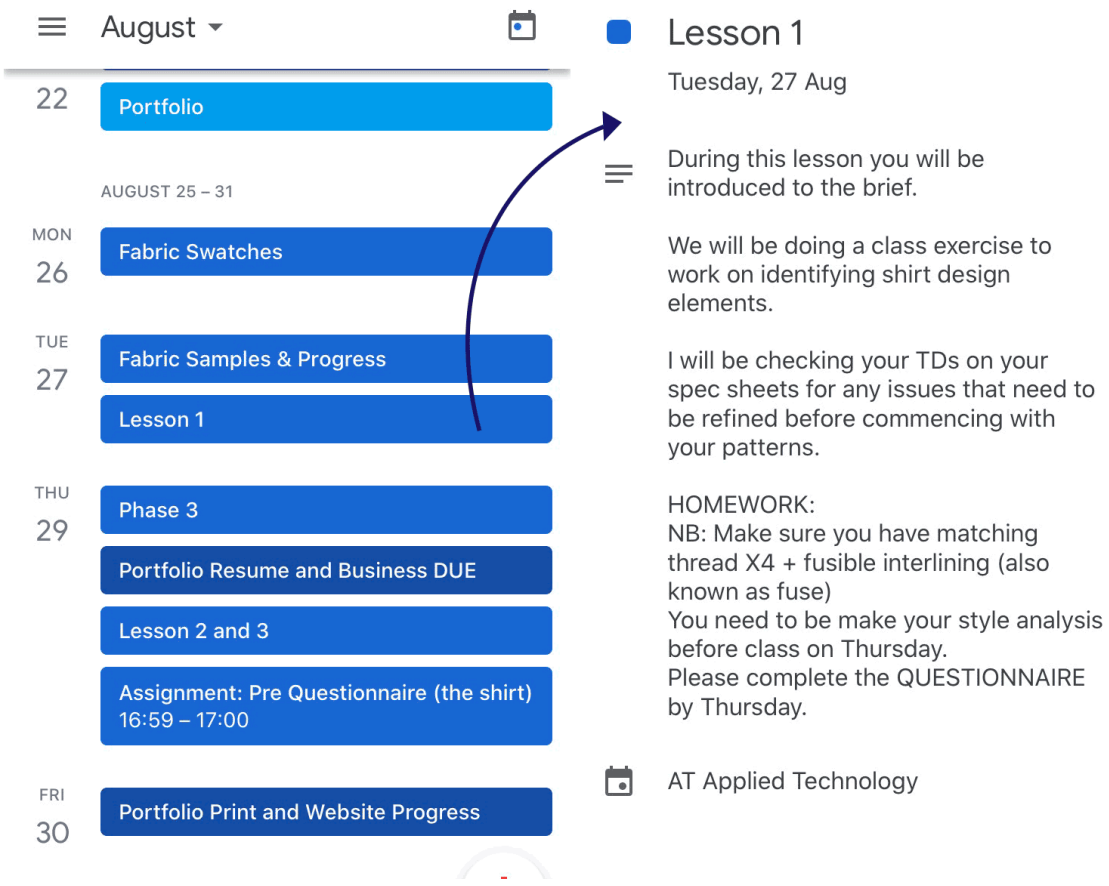


Figure 5.10 Google Calendar application workflow schedule

b. Face-to-face classroom

In order to align with the students' needs, the face-to-face contact time was used not only to support the students' application of knowledge, but also to include opportunities for collaboration and face-to-face demonstrations. The collaborative exercises were moved from the online classroom to the face-to-face contact time in order to allow the students to engage with one another and to expand their knowledge in real time. The students took part in a speed dating exercise where they were paired with a student who had a design element they did not have. This meant that the students were required to teach each other how they had completed that process. The contact time was also used for face-to-face demonstrations which were used as an introduction to a process before it was set for homework.

5.8 Design of resources for project two

Project two had its own unique project requirements which needed to be addressed. The brief details as well as the findings on project one was used to develop the content.

5.8.1 Details of project two

In project two the institutional brief document provided the students with a list of design details which needed to be part of their shirt design, and which included the following: a collar, cuff, placket, pocket, a panel line, and any other features they desired. The project followed the same four phases as project one, which included the design, pattern making, garment construction and a reflection video. During the design phase the students had to consider how they would interpret the project specifications stipulated by the brief document provided by the institution. The shirt design had to include a collar which could be a traditional shirt collar or a mandarin collar (Figure 5.11 shows examples of each). Each student's design had to have one of the following: button stand closures: a separate placket, concealed placket, shirt placket with a tuck, or a grown-on placket (Figure 5.12 and Figure 5.13 show examples of each of these design elements). The design also needed to include additional design details such as a patch pocket and a yoke (see Figure 5.14).

Figure 5.11 An example of collars (adapted from Massimo Dutti 2019; Shop Bop 2019)

Figure 5.12 An example of separate and concealed plackets (adapted from In Journal 2019; All Time List 2019)

Figure 5.13 An example of shirt and grown on plackets (adapted from Uni Market 2019; D H Gate 2019)

Figure 5.14 An example of patch pockets and a back yoke (adapted from Massimo Dutti 2019; John Lewis 2019)

The sleeve length was not specified. However, the students had to include a cuff in their design (Figure 5.15 shows a cuff with a placket and a short sleeve cuff).

Figure 5.15 An example of cuffs (adapted from French Connection 2019; Lulus 2019)

The students were required to create a unique design which included all the specified elements. The design phase followed the same processes as project one, requiring students to develop a specification sheet for their design. During project one, however, the design phase was not fully embraced by the students. Although they had created TDs for their designs, they did not develop specification sheets, and therefore did not use such aids to guide themselves through the pattern making and garment construction processes. For this project the lecturer asked the students to design their shirts prior to the start of the

project. During the briefing lesson the students developed their specification sheets and received feedback on areas which needed to be corrected. The students had to apply the corrections prior to commencing with their project and their patterns. This meant that the students had to engage with the design phase as it was a class exercise rather than a homework exercise, as in project one.

The previous briefs had not covered all the pattern making processes necessary to make a shirt. The researcher had to consider what additional pattern making and garment construction content was needed. The pattern making content needed to explore plackets, cuffs, cuff pleats, cuff plackets, and collars. The construction processes needed to demonstrate the construction of yokes, pleats, collars, plackets, cuffs, cuff plackets, and inserting a sleeve.

5.8.2 Resource development

The resources were adjusted to address the students' learning needs and the brief requirements.

a. Authentic activities

The authentic learning activities aligned with Herrington, Oliver and Reeves's (2003: 4) ten characteristics of an authentic activity. The real-world relevance of project one did not meet the students' learning styles. For this project, the real-world relevance was adjusted and presented as a class exercise during the introductory lesson. An authentic activity needs to be ill-defined. However, previously, in project one the content seemed too ill-defined for the students, as they were seeking more tailored content. The researcher came to the conclusion that, in the previous project, the problem may have been that the content was presented to them in direct relation to the purchased skirts. The students had therefore struggled to extract the information relevant to their own designs from the different skirts. In particular, it would be difficult if a student had multiple design elements in his/her proposed skirt which were found separately, or combined differently, in the purchased skirts. To avoid students having to struggle to identify separate elements, for this project, the design elements were presented rather as individual pieces. Table 5.4 describes the authentic activities

which had been adapted for this project. The sections which are greyed out did not change from project one.

Table 5.4 Ten characteristics of an authentic activity for project two

	Ten characteristics of an authentic activity	How these characteristics are applied in this study
1	Have real-world relevance.	The students were required to find a designer or runway image of a shirt that met the criteria. As a class exercise, the students looked at each other's images and identified what features it had. The students had to then analyse the garments and express how one would get in and out of the shirt and cuffs. The students also had to consider what the design details would be on the areas they could not see. This mimicked real world activities where pattern makers and seamstress would be given a TD, which they needed to decipher to make the pattern and to construct the garment.
2	Activities are ill-defined. Requiring students to define the tasks and sub-tasks needed to complete the activity.	During this project the researcher instead presented the design elements as individual details like puzzle pieces. Each student needed to identify which pieces they needed to build their own unique puzzle by identifying design elements and processes which were relevant to their design and using that information to fulfil their garment.
3	Comprise of complex tasks to be investigated by students over a sustained period of time.	The students needed to design a well-considered shirt which could be translated into a pattern and finally constructed into a garment. Each section depended on the other hence considered a complex task.
4	Provide an opportunity for students to examine the task from different perspectives, using a variety of resources.	The students needed to approach the task from a variety of different perspectives or 'roles. The student had to approach the task from a designer's point of view, then as a pattern maker, then as a seamstress. The students also required different resources: design, pattern making, and garment construction. The students needed to reflect on the task and shared what they had learnt with their peers and the lecturer, exposing them to each other's perspectives and experiences.

5	Provide the opportunity for collaboration.	During each lesson the researcher establish a ten minute “speed dating” exercise. The researcher paired students up with different design elements and gave them five minutes each to explain their design elements and processes to each other. For example, during the collar construction lesson the students showed each other their different collars, identified the names of the collars, the features and the construction methods. This allowed the students to learn from each other but also exposed them to a variety of design elements.
6	Provide the opportunity for reflection.	The students made reflection videos during the construction process explaining and demonstrating their processes and how they problem solved any issues. The students shared the knowledge and skills they had obtained. The students had to articulate the processes they had followed.
7	Activities that can be integrated and applied across different disciplines.	Through the development of specification sheets, the students learnt the importance of accuracy in their technical drawings and annotations. This knowledge could be applied in other subjects, such as their design subject.
8	Activities which are seamlessly integrated with assessment.	The assessment criteria were prescribed, and the activities were developed to align to the assessment criteria.
9	Create polished products which are valuable in their own right rather than as preparation for something else.	The students needed to create a professionally finished shirt which was complete and wearable.
10	Allow for competing solutions and diverse outcomes.	Students were encouraged to look at their own garments to see how things are constructed and to make their own decisions on which method to use.

b. Content development

The presentation of the content needed to be adapted from project one where the content had been presented based on the purchased skirts. Rather, for

project two the content was presented as individual pieces of knowledge which the students gathered in order to complete their individual designs.

(i) Selecting contents

For this project, the content was divided into five parts: shirts, technical drawings, pattern making, garment construction, and professional finishing.

- Shirts which showed the following design elements: shirt collar, mandarin collar, grown on placket, separated placket, concealed placket, shirt placket with tuck, yoke, centre back pleat, cuff, cuff one-piece placket, cuff two-piece placket, patch pocket, panel lines, and darts.
- Technical drawings (TD): which showcased the above design elements visually as individual pieces on a variety of technical flats with annotations and technical information.
- Pattern making: recapped the pattern making details that had been covered previously and demonstrations of new pattern making techniques associated with shirts.
- Garment construction: covered the above design elements' construction processes.
- Professional finishing: recapped the practice of professional finishing, pressing, clipping threads, garment presentation, and swing tags.

(ii) Content presentation

The content was presented as puzzle pieces of individual design elements. This allowed the students to see the elements as pieces that could be put together in any way to create a variety of unique designs. The individual design elements were broken down into the technical aspects and presented as downloadable documents on the LMS (see Figure 5.16). The pattern making process of this design element was presented as a video demonstration. Figure 5.17 is an example of the shirt collar pattern making video.

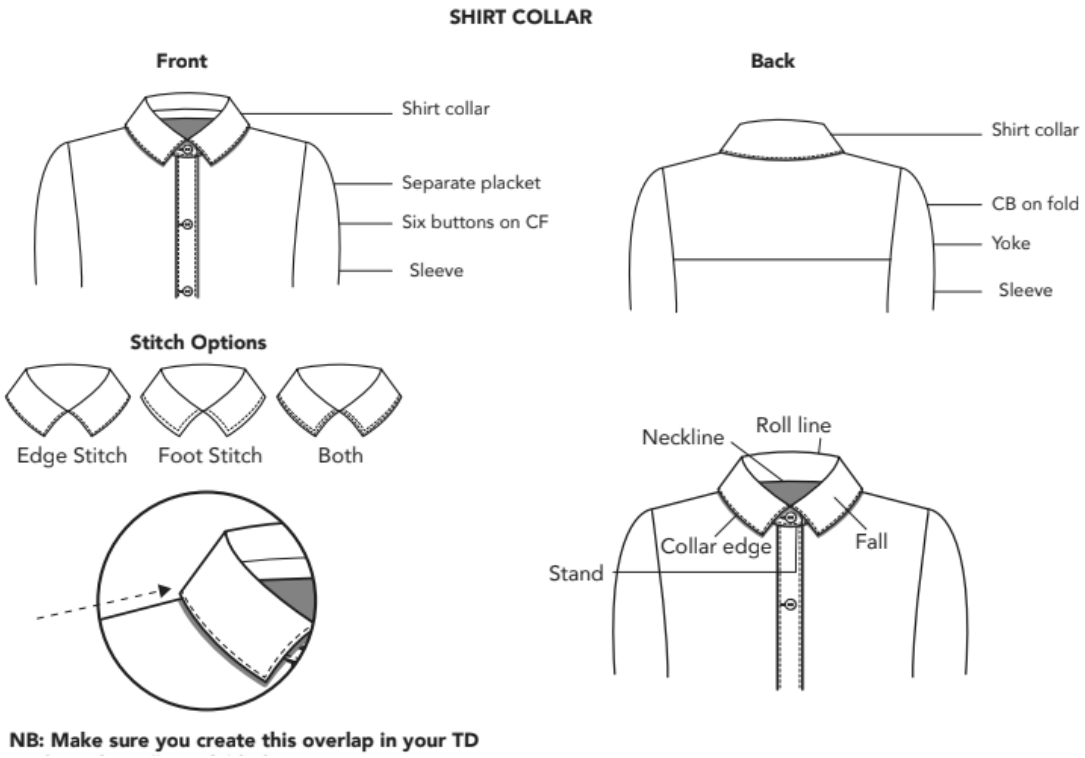


Figure 5.16 Example of the shirt collar technical details document

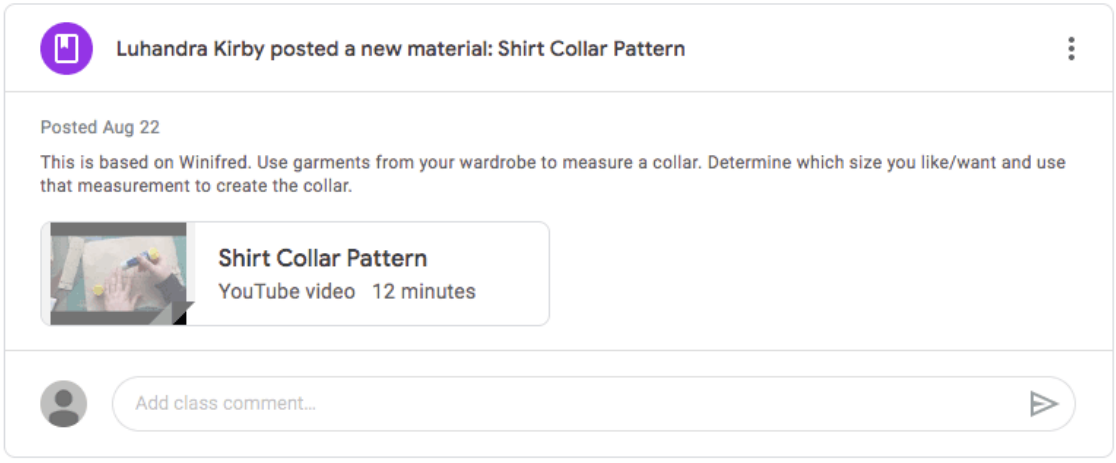


Figure 5.17 Example of the shirt collar pattern making content

The construction process associated with a shirt collar was also presented as video demonstrations. Figure 5.18 shows an example of the shirt collar construction videos.

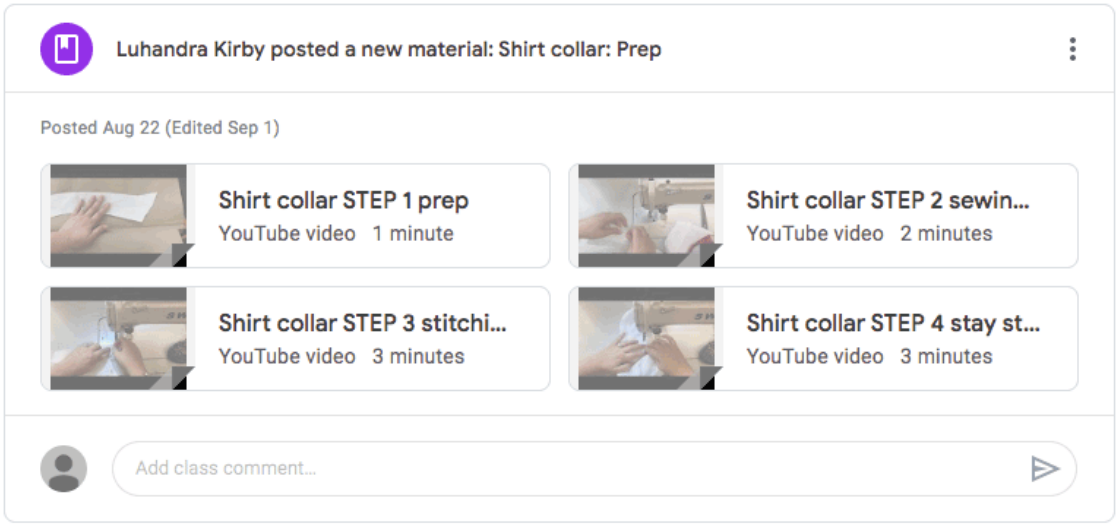


Figure 5.18 Example of the shirt collar construction processes content

5.9 Design of activities for project two

As with project one, considerations had to be made about how to organise the processes and content in order to align with the projects requirements and duration. Project two took place over the same amount of time as project one and followed the same structure.

5.9.1 Lesson activities

As with project one, this project took place over four weeks. The first week covered the design phase and pattern making, followed by laying and cutting, as well as sampling of their placket, yoke, and pleats. During the second week the students started constructing their shirts by sewing their placket, patch pocket, pleats, yoke, side seam and sleeve placket, inserting their sleeves, and hemming their garments. During the final week of construction, the students completed their shirts by attaching their collar and cuffs as well as applying professional finishes. Finally, the students needed to consolidate their reflection videos which they had recorded at the end of each lesson and produce a video which demonstrated the processes they followed and any issues that might have occurred during the process. In the final week the students submitted their garments and reflection videos. Table 5.5 shows the breakdown of the activities for the face-to-face contact time and the homework time.

Table 5.5 Lesson activities for project two

Session	Contact time (face-to-face)	Homework (online)
Week 1: Session 1 *(Lesson 1)*	• Brief introduction • In class exercise discussing designer or runway images • Refinement of design	• Complete questionnaire • Complete style analysis • Complete spec sheet
Week 1: Session 2 *(Lesson 2)*	• Style analysis class review • Spec sheet review • Begin master pattern	
Week 1: Session 3 *(Lesson 3)*	• Master pattern completion • Speed dating exercise: pattern making principles • Live placket demonstration	• Lay and cut fabric • Sample placket • Sample yoke and pleats • Film a one-minute reflection video
Week 2: Session 1 *(Lesson 4)*	• Sew placket • Sew patch pocket • Live sleeve insertion demonstration	• Sample cuff placket • Sample inserting a sleeve • Sample Hem • Film a one-minute reflection video
Week 2: Session 2 *(Lesson 5)*	• Speed dating exercise on placket pattern and construction • Assemble garment (panel lines, yoke, pleats, side seams and shoulder seams)	
Week 2: Session 3 *(Lesson 6)*	• Sew cuff placket • Sew and insert sleeves • Hem the garment	• Sample collar • Film a one-minute reflection video
Week 3: Session 1 *(Lesson 7)*	• Sew collar • Live cuff demonstration	• Sample cuff • Film a one-minute reflection video

Week 3: Session 2 *(Lesson 8)*	• Speed dating exercise on collar pattern and construction • Sew cuff • Live demonstration sewing on a button	
Week 3: Session 3 *(Lesson 9)*	• Professional finishing	• Complete reflection video
Week 4: Session 1 *(Lesson 10)*	• Submit garment • Submit reflection video • Take part in interviews	

5.9.2 Activity objectives

The objectives gave insight into the type of learning that took place during the session and the knowledge and skills the students should have been able to demonstrate. Table 5.6 offers a breakdown of each lesson's objectives for the face-to-face contact time and the homework time.

Table 5.6 Lesson objectives for project two

Session	Contact time learning objectives	Homework learning objectives
Week 1: Session 1 (Lesson 1)	• Demonstrate the ability to analyse designs and identify design elements of a shirt. • Demonstrate the understanding of how shirts function. • Demonstrate knowledge to design a shirt that meets the brief requirements.	• Demonstrate the ability to create an accurate technical drawing with annotations. • Demonstrate the ability to apply their knowledge and to create a style analysis. • Create a style analysis which fulfils their design, containing all the design elements from their shirt.

	• Demonstrate the ability to design a shirt which they could construct. • Demonstrate the ability to design a shirt which pushes their creative bounds.	
Week 1: Session 2 (Lesson 2)	• Demonstrate the ability to handle critique maturely and apply the critique to their style analysis. • Demonstrate the ability to create a master pattern from their style analysis.	
Week 1: Session 3 (Lesson 3)	• Demonstrate the ability to create an accurate master pattern which represents their design. • Demonstrate the ability to add all pattern landmarks. • Demonstrate the ability to apply the correct seam allowances based on their design.	• Demonstrate the ability to lay pattern pieces and cut their fabric accurately. • Demonstrate the ability sample a placket. • Demonstrate the ability to sample a yoke and pleats. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.
Week 2: Session 1 (Lesson 4)	• Demonstrate their ability to apply their knowledge of the placket to their garment. • Demonstrate the ability to draw on their previous knowledge to sew a patch pocket.	• Demonstrate the ability to sample a cuff placket. • Demonstrate the ability to insert a sleeve into an armhole • Demonstrate the ability to sample an internally bound hem. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.

Week 2: Session 2 (Lesson 5)	• Demonstrate the ability to apply their knowledge by assembling a garment with panel lines, yokes, pleats, side seams and shoulder seams.	
Week 2: Session 3 (Lesson 6)	• Demonstrate the ability to apply their new knowledge on cuff plackets to their garment. • Demonstrate the ability to apply their new knowledge and to insert their sleeves into their garment. • Demonstrate the ability to apply their new knowledge on hems to their garment.	• Demonstrate the ability to sample a collar. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.
Week 3: Session 1 (Lesson 7)	• Demonstrate the ability to apply their new knowledge of collars to their garment.	• Demonstrate the ability to sample a cuff. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.
Week 3: Session 2 (Lesson 8)	• Demonstrate the ability to apply their new cuff knowledge to their garment.	
Week 3: Session 3 (Lesson 9)	• Demonstrate the ability to prepare the necessary elements needed to complete their garment.	• Demonstrate the ability to record a video using the medium of their choice • Create a polished professional video • Upload a video to YouTube
Week 4: Session 1 (Lesson 10)	• Demonstrate the ability to articulate their new knowledge in terms of:	

	• Pattern making process, landmarks and fabric manipulation. • Garment construction assembly process. • Explain one interesting construction process learnt while making their shirt.	

5.10 Plan of delivery for project two

The plan of delivery reconsidered the roles of the lecturer and the students for this project. This again used the BLC's activity based blended learning model, and the four stages: lead-in, planning, acting and reviewing.

5.10.1 Leading in

The objective of the lead-in stage was to demonstrate the task to the student. There are four sub-components to this stage:

- *Describe the aims of the task to the students.* As with project one, the students were given a written brief document which described the outcomes, assessment criteria and brief requirements. During the first lesson of the project, the lecturer went through the brief with the students, ensuring that all students understood what was required of them. The brief document was uploaded onto the Google Classroom for the students to refer to.
- *Show the task by examples.* The researcher brought in shirts for the introductory lesson and discussed the design elements with the students. This allowed the students to see the design elements in real life and provided a reference to the professional finish expected of them.
- *Show resources provided.* The video resources were uploaded onto the LMS and organised in categories. The video content was presented as individual elements covering the design elements, pattern making, and garment construction techniques necessary to construct a shirt.

- *Make arrangements*. The project was broken down lesson-by-lesson on the Google Calendar. Each lesson was broken down with the activity for the face-to-face contact time and what they were expected to do for homework in preparation for the following lesson.

5.10.2 Planning

The planning stage had three subcomponents: define the problem; define the steps; and identify classmates with whom to collaborate. During this study the three subcomponents were carried out in the following manner:

- The students were required to define their own *design problem* by completing a specification sheet as with project one.
- The students were expected to *define their steps* by specifying their construction or assembly processes on their specification sheets.
- The students had to *identify* classmates with whom to collaborate. During the face-face contact time, the students had to collaborate with each other on a by lesson-by-lesson basis. The students had five-minutes to teach a classmate about their design element, expressing the technical details and construction process involved.

5.10.3 Acting

The acting stage dealt with the task itself and the fulfilment of the task related requirements. During this study the three subcomponents were carried out in the following manner:

- The students were required to collect information which was applicable to their task. The video content was presented as individual design elements, and as such, the students had to identify what was applicable to them for their unique design.
- The students had to carry on with the task by making samples of the construction processes to master the new skills before applying them to their garments.
- The students needed to solve the design problem by constructing a professional garment using the knowledge they had gained.

5.10.4 Reviewing

The reviewing stage allowed the learners to share their newly constructed knowledge with their classmates and their lecturer. During this study the three subcomponents were carried out in the following manner:

- The students were required to make presentations. As with project one, the students had to present a professionally finished garment and reflection videos.
- The students reviewed the project by taking part in one-on-one interviews with a third-party interviewer. The students answered questions about the delivery approach and their experiences thereof.
- Additionally, the researcher reviewed the students work, and provided the students with feedback.

5.11 Conclusion

The blended learning delivery designs for both project one and two focused on the students' needs. This was done to develop an approach which would make the best use of the limited contact time, while creating an environment which appealed to this specific cohort's learning styles and preferences. The basis of the approach was to offer the students with opportunities to build on their professional practice in their pursuit of becoming fashion designers. Project one offered a baseline for the students to experience blended learning for the first time and allowed the findings to be used, in order to create an approach in project two which would better appeal to this cohort's needs and wants. Chapter 6 offers insights into the final findings and conclusions of this study.

CHAPTER 6: INSTRUCTIONAL ASSESSMENT OF BLENDED LEARNING DESIGN

6.1 Introduction

This study set out to determine the 'blend' in blended learning for a specific pattern making and garment construction class. It was important to understand what a balanced approach for teaching and learning, in the context of the pattern making and garment construction class, should consist of. The literature explored blended learning and teaching approaches which could be used to enhance the blended delivery. The BLC model developed by Huang, Ma and Zhang (2008: 6) informed the blended learning pre-analysis, and design which were discussed in Chapters 4 and 5, showing how it was initiated for the two projects. Project one explored the first blended learning approach and produced data which was used to make improvements to the second project, in pursuit of achieving the right balance or 'blend' in blended learning. Chapter 3 described the research approach and methodology for this study. Chapter 4 discussed the pre-analysis of the blended learning design offering a starting point for the design of project one. Chapter 5 explored the development of the blended learning deliveries of project one and provided discussions on the findings from the data collection of this project, revealing the opinions and experiences of the lecturer and the participants. These data were used to adapt and improve the approach of the blended learning design for project two. As blended learning is not a 'one size fits all' approach to teaching, the research needed to be conducted in order to assess how these students would respond to blended learning. It is only possible to do so by trailing it in real life and determining if it would work for the context of this classroom and subject. The researcher needed to understand from her context if blended learning would work for teaching a practical subject, where the goal was to prepare students to become professionals. As it was the students' first experience of blended learning for this subject, it was important to test their initial responses to it in project one, offering the students the opportunity to familiarise themselves with the new approach, and to express their opinions based on this new experience. This data were then used to adapt the approach

for project two, in the hopes of creating a better 'blend' of blended learning. This chapter offers an assessment of the blended learning design, drawing conclusions and providing insight for future studies.

6.2 Key Conclusions

The research focused on answering three critical questions, to ascertain how a blended learning approach might be designed to optimise the teaching and learning processes for the pattern making and garment construction class. The below discussion is on the key findings from both research and data collection.

6.2.1 How can blended learning be defined?

Chapter 2 provided a detailed account of the various aspects of blended learning delivery. For this study, blended learning was defined as a combination of online learning and face-to-face learning, where the online learning component was used to supplement the face-to-face contact time. The balance of the blend was crucial in determining what should be taught face-to-face and what should be taught online. This had to be worked out in the educational context in which instruction was taking place, in particular, to fit the educational outcomes required at the NQF level 7, as follows. Students at this level are required to acquire the following knowledge and skills:

- *detailed knowledge* on the main areas of the field of study;
- an *understanding* of different types of knowledge;
- the ability to evaluate, select and *apply* appropriate methods, procedures or techniques; and to identify, analyse and *problem solve* in unfamiliar contexts (South Africa 2012: 9).

The NQF level 7 descriptor also states that degree candidates should be able to *manage their own learning* and take *responsibility* for his or her own work.

6.2.2 What can a balanced approach for teaching and learning in the context of the pattern making and garment construction class consist of?

The research showed that there was no prescribed formula, standards or guidelines to achieve the perfect balance in a blended approach. However, a

blended learning model could assist in structuring the delivery. The BLC model developed by Huang, Ma and Zhang (2008: 5-9) assisted in the preparation for the blended learning delivery by allowing the incorporation of the flipped classroom, reflective learning, collaborative learning, and authentic learning approaches. The blended approach developed, using the BLC model, was initially found not to be the best fit for the context of this study. Given that each class is unique, the blend needed first to be tested in the context of the class to assess what worked and what did not work. The findings of the initial blend and the students' input were used to adjust the approach in order to achieve a better balance. The application of these approaches was adapted in the following ways:

a. Flipped classroom:

A flipped classroom, where students were required to do all preparatory work prior to class and apply their knowledge during the lesson, did not work for the students participating in this study. The students did not have enough confidence to gain knowledge solely outside of the classroom. To assist the students in feeling more confident to gain knowledge on their own, live demonstrations were added to the face-to-face contact time. These demonstrations were used as an introduction to the processes prior to their homework. The demonstrations not only allowed the students to see the process, but to feel and touch the samples as well as ask questions prior to approaching their homework on their own. However, the flipped classroom approach was administered in order to align with the NQF by encouraging students to *manage their own learning.* Although the initial approach obliged the students manage their own learning, it was too daunting for them in the way it was administered, whereas the method used in the second approach gave the students more confidence to manage their own learning.

b. Reflective learning

This allows students to make sense of what they are learning and to learn from their experiences for future improvements (Moon 2013: 81). Students are able to link their existing knowledge by understanding the relationship between their current experience and future actions (Moon 2013: 81). They are also able to articulate their growing understanding by speaking the "vocabulary" (Herrington

and Kervin 2007: 10), and sharing their knowledge with one another by discussing their issues and their processes.

In this study the students were required to film reflective videos, articulating the processes they followed to make sense of what they had learnt. For the first project the students had to film their video after the completion of the project. As a result, the students were recalling the processes they followed, and, although they could articulate these processes themselves, they were not reflecting on the processes, thus making sense of what they had learnt. In order to allow the students to make better sense of what they were learning they were asked to film their reflection videos during the project. This allowed the students to present any issues they faced and discuss how they solved any problems. However, as the reflective video was not assessed formally (i.e. allocated marks), some of the students did not take it seriously and either put little effort into it or did not complete a video at all, meaning that this NQF descriptor was not seen to be achieved. The intention of the reflective video was also to allow the students to learn from one another as there were design elements which they did not have in their design which their classmates may have had. As not everyone completed a video, they were not exposed to all the design elements they could have been. As a result this reflective element was merged with the collaborative learning exercise for project two.

c. Collaborative learning

Collaborative learning promotes the exchange of ideas and participation by each student, working together to share knowledge (Stetsenko 2009: 9; Roselli 2016: 256). Initially the collaborative learning aspect was applied only to the online classroom, encouraging students to engage with one another online, finding a buddy who had similar design elements and supporting each other through the processes. This was not successful, as the students did not see the value in collaborating with each other if they found the process easy to follow. They would ask for support only if they found the particular construction process difficult, which meant that collaboration became very limited. The collaborative aspect was therefore adapted to incorporate an additional collaborative exercise during the face-to-face contact time, which was facilitated by the lecturer to ensure that students were gaining more knowledge by learning from one another. The

collaborative exercise incorporated a reflective element by allowing students to make sense of their new knowledge by teaching a classmate. This exposure to each other's design elements made the students interested in learning more from one another. The students then started asking each other, in their own time, for their classmates to explain to them what processes they had followed, which meant that they became interested in learning more than their own designs would expose them to. This prepared them more thoroughly for professional practice by exposing them to more design and construction processes than they would have learned through individual projects alone.

d. Authentic learning

This is defined as learning knowledge and skills in contexts that reflect the way knowledge would be used in real life (real-world) (Collins 1988: 3; Herrington and Kervin 2007: 4). Authentic learning addresses the delivery and practical aspects of education in vocational training, which requires students to apply knowledge gained in a formal educational setting in a workplace context (Butler and Brooker 1998: 81).

Authentic learning thus assists students to become professionals in their chosen field, and to develop problem solving abilities to arrive at solutions that are professional solutions. Mere classroom exercises allow students to see that a solution to a problem is necessary, but the solutions are not necessarily to professional standard. The issue of real-world relevance was adapted slightly from the first project to the second. Initially several skirts were purchased and used to give context to the content and show the level of professional finish required. With the content being presented in accordance with the purchased skirts, the students struggled to extract the processes necessary for their project skirts as such. The adaptation in the second project was that the content was presented as individual processes, as puzzle pieces allowing the students to choose the content related to their design and build their own puzzle/knowledge base. The professional finish was presented to the students at the start of the project to show them the required design elements and level of professionalism. Showing them a finished product at the start of the project, with the finish and design elements, and allowing students to touch and see how elements function,

gave them an understanding of the garment before they began. Thus, the adaptation retained the real-world elements afforded by authentic learning but allowed students to grasp elements of design gradually and separately, as they had not yet achieved the 'gestalt' thinking of how various aspects might be combined in the whole garment.

6.2.3 What are the results of applying the proposed blended learning delivery in the pattern making and garment construction class?

The researcher, overall, found that the blended approaches for project one and two assisted the students in producing a better standard of work during the design, pattern making and garment construction stages.

a. In terms of achieving the requirements of the project brief(s)

In terms of the design phase, the standard of work varied between the projects. During project one, the students had shown an understanding of how to develop a specification sheet, however, the standard of their technical drawings was low. The students had not used the specification sheets as a guide during the process and as a result did not treat it as a working document to correct and improve upon during the process. The students were not showing attributes of a degree candidate as they were merely completing work to achieve an outcome rather than showing the ability to identify, analyse and solve any problems that arose. However, during project two, the students started engaging with the project in a more professional manner by identifying and solving problems themselves. The students used their specification sheets to guide them throughout the process and, as a result, they adjusted and corrected the annotations and technical drawings as they produced their garments yielding a higher standard of work.

The pattern making component of both briefs was executed well by the students. Prior to project one and two, the students struggled with what information was required on each pattern piece and where to position the information and pattern landmarks. During project one and two, the students showed improvements in their ability, applying the correct technical information required to their pattern pieces. This showed that the students were improving their professional practice

and were working towards the NQF descriptor, showing detailed knowledge of their discipline.

The students were therefore able to produce professionally finished garments after both projects, which were of a high standard, with only a few technical issues. However, as a result of the students falling behind with their time management in both briefs, the researcher's ability to assist the students with any issues that occurred became limited. With both projects, after the final face-to-face lesson, the students had to complete their garments on their own for homework. While working on their own, some of the students faced construction issues in which they needed to solve problems. This required the students to work in line with the NQF descriptors whereby they had to manage their own learning and draw on their understanding, while evaluating, selecting and applying appropriate solutions. However, due to the students' lack of knowledge and professional practice, and given that the lecturer was unable to assist the students in resolving the issues in the most professional way, some of their solutions were of a low standard and affected their assessment results.

The general standard of work was good, showing that the students were improving and building upon their professional practice by working in line with the NQF descriptors. The quality of the students' work could be attributed to their access to the video content because the students were able to refer back to the content and re-watch it until they had understood and mastered the skill or process. This allowed the students to develop the ability to evaluate, analyse and select appropriate solutions for their unique designs.

b. In terms of how this is experienced by the facilitator and students (in project one)

This section discusses the findings in terms of the facilitator and students' experiences of project one.

During project one, the facilitator found that the students were initially resistant towards the blended learning approach, and that the flipped classroom approach

was the biggest obstacle for the students to adjust to. The students were resistant towards the change in the roles of the face-to-face contact time and the homework time. The facilitator found that the students continued to use the face-to-face contact time to gain knowledge and the homework time to apply their knowledge. As a result, the students wanted the lecturer to teach them step-by-step what to do, as she had done in previous projects. As mentioned previously, the facilitator was tempted to revert back to this teacher-centric approach and to show the students what to do. However, she realised there was no value in doing so as the online content had provided the students with the step-by-step processes. Rather, she referred the students back to the online content, and, as a result some of the students started to engage with the content. Several students continued to resist the change and wanted to be told what to do to complete the task. In the final week of the project, however, there was a shift in their engagement with the flipped classroom approach, and the students started to apply their knowledge during the lesson allowing the researcher to facilitate their learning process. Although the students' response to the approach shifted towards the end of the project, it was apparent that the students did not enjoy the blended learning approach. From the facilitator's perspective, the constructivist orientation and a flipped classroom approach were too much for the students to handle when under the time pressure and while experiencing blended learning for the first time. Introducing the students to blended learning for the first time should have started off by simply including some online content. Only once the students were comfortable with a blended approach, should other learning modes have been incorporated. An important insight for the facilitator was that, no matter how enthusiastically innovative teaching /learning approaches are recommended in the literature, the target audience's previous experience of such methods is a key factor in introducing innovations, which may have to be scaffolded so that learning – and acceptance – occurs in stages.

The data collected from the interviews and reflective exercise gave insight into the students' experience of the blended approach. The facilitator was pleasantly surprised when the data collected from the students' interviews showed that five out of seven students said that they did enjoy the blended learning delivery. The

reflective discussion revealed that the two students who initially did not enjoy the new approach had changed their opinions once they were able to reflect on the process. All students stated that they had enjoyed the video content, and, in particular, the ability to refer back to the content when needed. Aspects of the blended learning approach which the students did not enjoy were the lack of in class hands on demonstrations, difficulties with time management, inconsistent internet connections, and the flipped classroom approach.

c. In terms of how this is experienced by the facilitator and students (in project two)

As with project one, the students showed initial resistance to the blended learning approach. However, once the project had progressed, the students started to engage in the learning process, and were able to gain knowledge prior to class and apply it during the lesson under the facilitator's guidance. During this project the facilitator found the students' confidence in their abilities had improved. The students stopped asking what to do; rather, they were asking for clarity on what they thought they should do. The reasons for this progress, in the facilitator's opinion, were two-fold. Firstly, it was because the students were gaining more pattern making and garment construction knowledge as they were progressing in their studies. These processes were starting to make more sense to the students, as they were gaining more knowledge and realising the link between their knowledge and its application. Again this showed that the students were starting to show detailed knowledge of their discipline. Secondly, the facilitator believed the progress could be attributed to the flipped classroom, as the students were gaining knowledge prior to the lessons, and coming to class equipped with new skillsets. This new knowledge in turn helped the students to articulate their understanding, allowing them to ask for clarity rather than asking what to do. The facilitator believed that the students' participation and engagement during the project showed that they now enjoyed all the aspects of the blended learning approach.

The interview and reflective discussions confirmed these findings. All the students stated that they enjoyed the blended learning environment, finding that

the online video content was a good way to learn. The students preferred the blended learning delivery of this project because of their previous experience of blended learning; in particular, the delivery of the content; the live demonstrations; and the in-class collaboration exercises. As the students had previously experienced the blended learning approach in project one, they were familiar with the process which made this method more enjoyable for them. The findings of project one helped the facilitator adjust the context of the content, presenting the processes as individual pieces. As a result, the students found the content easier to understand and to apply to their garments. The live demonstrations also assisted the students in their understanding of the processes before they attempted the processes on their own for homework, making the processes easier to understand and more enjoyable. The in-class speed dating collaboration exercise exposed the students to different design elements and the processes involved in constructing them. The students enjoyed learning new processes and learning from each other, and, as such, continued collaborating with one other outside of the classroom. The students also noted that the blended learning approach allowed them to work at their own pace and easily catch up on work on which they had fallen behind.

6.3 Additional discoveries of significance

A general conclusion is that the 'blend' in blended learning is not a one-size-fits-all solution; rather, it is an ever-changing approach which needs to be adaptive to the context, content, people and participants, and the time. Each 'blend' needs to be contextually sensitive in order to create a unique solution for each unique context. Educators should reflect on their 'blend', seeking to make improvements and adjustments as they and their students experience their blended learning delivery.

Although the data collection did not include data on the students results, the impact the blend had on their results will be discussed here. It was mentioned in Chapter 2 that a study conducted by Yick *et al.* (2018: 179) found that there was no significant difference in the results between students who participated in a traditional face-to-face classroom and those who participated in a blended

learning classroom. Data on the students' results were not included in this study as the institution provided the assessment criteria for each project. The assessment criteria differed for each project and did not yield comparable data. However, the researcher reflected on the results and quality of work produced in the previous year, where she taught the same content, purely in a face-to-face classroom, guiding the students step-by step. There was no discernible difference in the capabilities of the previous year's students and those who engaged in the blended approach. The main difference in this study's students was their ability to construct their own knowledge and make a garments on their own which were of a good standard with very little lecturer assistance. Whereas the previous year's students had produced good work, they were told what to do at each step of the way. To sum up, in considering whether the blended learning approached helped or hindered the students' results, it did not apparently have any impact on their results. Rather, it impacted their knowledge base and allowed them to take ownership of their knowledge. The students were able articulate themselves better than past students and they no longer asked what to do, rather they asked for clarity on what they thought they should do. They had thus become more professional in their approach to pattern making and garment construction.

6.4 Recommendations

In this section recommendations are made for achieving an effective 'blend' in blended learning. The recommendations focus on future research and offer suggestions for improvements for the institution.

6.4.1 Recommendations for future research

The following recommendations are made for future research into blended learning:

a. Access to the online content

When introducing a blended learning approach to students, ensure that they have access to the online content by confirming their access to Wi-Fi and offering them alternative solutions to view this content. This can be done through a YouTube

playlist which allows students to view the content offline by downloading the content in a Wi-Fi zone and adding it to their watch later list on the YouTube App. Alternatively, the institution can provide the students with a hard drive with the video content on it, or have an institutional server where students could download the videos on campus.

b. Effectiveness of online demonstrations

A combination between online and live demonstrations offers the students multiple opportunities to understand the content. Providing live demonstrations in class gives context to the homework objectives, and this assists students in their understanding and their level of confidence. The benefits of live demonstrations allow students to see and touch the samples, while offering them the opportunity to ask questions. As the online demonstrations are not interactive like the live demonstration, it is important to offer as much detail of the process being demonstrated as possible. This could be done by showing the processes from different angles and in slow motion to ensure that the students could clearly see how to replicate the process themselves. Content could also be included to show students how to change the playback speed of the videos on YouTube in order to view the process at a slower speed. Additionally, diagrams could also be added to show the students which parts of the garment were being connected.

c. The importance of collaboration

Collaboration was a key factor in encouraging students to share their knowledge with one another. In-class collaboration exercises were more successful than online collaboration because the active learning exercise forced the students to engage with one another. The speed-dating exercise only took up a few minutes of the lesson time and allowed the students to reflect on their learning processes by drawing on their new knowledge and articulating the processes to their peers. The exercise exposed them to each other's work and made the students more willing to ask each other questions.

d. Student motivation

More research needs to be done on finding ways to address student motivation and student 'buy in' into the learning process and engaging in the process. Student resistance is well documented in literature (as shown in section 2.6.4 on pp. 32-33), and more research needs to be conducted on how to overcome this and foster engagement in students.

e. Longitudinal studies

Further research should be done as a longitudinal study on whether blended learning helps students meet graduate attributes by the end of the degree or helps them in more advanced subjects or later projects. As this study only focused on two isolated projects within one subject, it would be advantageous to explore the impact of blended learning over the three years of their studies. In order to determine the cross disciplinary: impact of blended learning, knowledge integration and their professional practice.

6.4.2 Recommendations for improvements for the institution

As per the findings of the study, the following recommendations for improvements have been included for the institutions consideration. This may also be applicable to other institutions, especially those teaching practical subjects.

a. Increase instructional time

The students had asked for more lesson time to be able practise their skills. As the subject covers two instructional methods the students felt under pressure for project one and two. An additional instructional session allocated to the subject per week would assist the students in their ability to achieve the brief requirements.

b. Distribute subject content in advance

A student mentioned that they would have liked access to the content at the beginning of the year, giving them more time to work through the content prior to the project. The theoretical content could be provided to the students at the start

of the year, giving them the opportunity to work through the content prior to the start of a project which would allow them to start the project with knowledge. The video content could be made available to the students on the institutional server allowing them to download the content at the start of the year.

c. Allocate marks for reflective exercises

The inclusion of the reflection video into the assessment criteria for each project. The reflection videos allowed the students to record and reflect on their learning processes, giving them the ability to articulate the processes they followed, and to learn from one another. By including the reflective exercise for marks the students would take it more seriously, as without marks the students are less likely to do it.

d. Provide guidance as to institutional approach

An institutional blended learning development model to assist lecturers in developing a blended learning approach which aligns with the institution's outcomes would be beneficial in ensuring consistency across disciplines and nationally. As there are many ways to approach blended learning, it would assist the staff and students if there was a guide providing an institutional approach. This could be incorporated into the staff training modules.

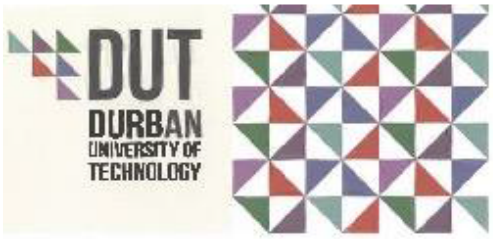
6.5 Concluding thoughts

In retrospect, my rationale for engaging in this study was to investigate a new – for me – method of teaching and learning in order to master it more effectively in my given field. I was extremely fortunate at the outset to have access to models of blended learning (Huang, Ma and Zhang 2008: 5-9) to guide this inquiry. However, it soon became apparent that application of the model required a process of adjustment and modification in my approach, which was an invaluable learning process for me as well as my students. In terms of the personal insights I gained, I have learnt that, although there was initially resistance to the new way of teaching, and the classroom environment became strained, there was value in the blended learning approach. My students also have the option of reflecting on what they have learned and applying it in this and other disciplines. I mentioned

that, initially, there was learner resistance. Perhaps if students had been ‘trained’ in blended learning from day one across all subjects and all projects, it would have been easier for them to accept, but this would have required buy-in from the entire institution by all lecturing staff, which is not at present the case. Then, too, if I had been able to have free rein to design my own curriculum, assessment criteria and timelines, I would have been able to adjust the approach by correcting and realigning the content to suit the students’ response and capabilities, lesson-by-lesson. However, with the outlines, briefs, outcomes and requirements provided by the institution, I had to work only with what I was able to control. As this is the case with most educators, it was not an unreasonable constraint. In conclusion, it is hoped that this research has provided valuable insight into the development of a blended learning approach for pattern making and garment construction. Furthermore, the research has provided insight into establishing the ‘blend’ in blended learning in general, establishing that the ‘blend’ is an adaptive process and not a once-off solution.

APPENDIX A: ETHICAL CLEARANCE DOCUMENTS

IREC CLEARANCE LETTER



Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
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Durban University of Technology

P O Box 1334, Durban, South Africa, 4000

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2 May 2019

Mrs L Kirby
12A Aberfeldy Road
Westville
3630

Dear Mrs Kirby

The 'blend' in blended learning: establishing a balance between face-to-face and online learning in a pattern-making and garment construction class

I am pleased to inform you that Full Approval has been granted to your proposal.

The Proposal has been allocated the following Ethical Clearance number **IREC 050/19**. Please use this number in all communication with this office.

Approval has been granted for a period of **ONE YEAR**, before the expiry of which you are required to apply for safety monitoring and annual recertification. Please use the Safety Monitoring and Annual Recertification Report form which can be found in the Standard Operating Procedures [SOP's] of the IREC. This form must be submitted to the IREC at least 3 months before the ethics approval for the study expires.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC SOP's.

Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Yours Sincerely

Professor J K Adam
Chairperson: IREC

LETTER OF INFORMATION

LETTER OF INFORMATION

Title of the Research Study:

'The blend' in blended learning: establishing a balance between face-to-face and online learning in a pattern making and garment construction class

Principal Investigator/researcher:

Luhandra Kirby (B-Tech)

Co-Investigator/supervisor/s:

Supervisor: Michaella Cavanagh (M-Tech)

Co-supervisor: Prof Deirdre Pratt (D-Tech)

Brief Introduction and Purpose of the Study:

The research project attempts to address blended learning in the pattern making and garment construction class. The purpose of the study is to assess the proportion of face-to-face learning (class time) and online learning (homework). The study will take place during the skirt brief in Term 2 and the button through shirt in Term 3. The first blended learning delivery will be attempted during the skirt brief. The delivery method will be assessed through your experience of blended learning, the achievement of the learning outcomes and my observations of the blended learning classroom. These findings will help in adjusting the blended learning delivery for the button through shirt in Term 3. Your participation in this study will be voluntary and your name will be kept anonymous.

Outline the Procedures:

Study Duration:

- Brief 1: The Skirt - 3 Weeks (10 Sessions) during Term 2
- Brief 2: The Button Through Shirt - 3 Weeks (10 Sessions) during Term 3

You will be asked to take part in the following:

- Answer the baseline knowledge questionnaire at the start of the brief. (The questionnaire will be filled in digitally and results will be submitted anonymously.)

- Be willing to be observed by the researcher (your lecturer) during class for the duration of the brief.
- Answer the interview questions at the end of the brief. (The interview will be conducted by the Student Liaison, who will transcribe your answers. This will allow you to stay anonymous.)

Benefits:

Your participation in this study will assist in the development of the right proportion of blended learning for you and your classmates. The researcher would like to create a blended learning delivery which best suits the class. The delivery will be applied to future briefs.

Reason/s why the Participant May Be Withdrawn from the Study:

As a participant you have the right to withdraw from the study for any reason. You may withdraw from the study at any point without prejudice.

Remuneration:

There will be no remuneration for your participation in the study.

Costs of the Study:

There will be no costs associated to the study.

Confidentiality:

Your information is confidential and will not be shared with anyone. The data will be collected digitally and will be password protected. Pseudonyms will be used to describe your opinions in the final thesis.

Persons to Contact in the Event of Any Problems or Queries:

Please contact the researcher (Luhandra, on 073 135 5657, or at luhandra.kirby@gmail.com), my supervisor (Michaella Cavanagh, on 031 373 3724, or at michaellag@dut.ac.za) or the Institutional Research Ethics Administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031 373 2577 or moyos@dut.ac.za

LETTER OF CONSENT

LETTER OF CONSENT

Statement of Agreement to Participate in the Research Study:

☐ I, hereby confirm that I have been informed by the researcher, _____ (name of researcher), about the nature, conduct, benefits and risks of the study- Research Clearance Number: _____ ,

☐ I have also received, read and understood the above written information (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.

☐ In view of the requirements of research, I agree that the data collected during this study can 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**

I, _____ (name of researcher) 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**

Full Name of Witness (if applicable)	**Date**	**Signature**

GATEKEEPER'S PERMISSION

(Some information has been redacted to protect the privacy of the Institution.)

Luhandra Kirby

16 October 2018

Dear Luhandra

Application for ethical clearance: The blend in blended learning: establishing a balance between face-to-face and online learning

Approval to conduct research Ethical Clearance number: IEG16102018LK

Thank you for the application for ethical clearance dated 3 October 2018. Your application has been reviewed by the Research Committee and discussed in a round-robin email. The Research Committee has considered your submission and granted you permission to conduct research on the Inscape Durban campus as outlined in the submission. Please ensure the following:

- due consideration be given to ensuring that students who may not wish to participate in the study are not disadvantaged in any way;
- all material that is copyrighted by Inscape is acknowledged appropriately;
- please correct the references to the second year Fashion subject as a foundation phase subject, this is not accurate. The subject is at a second-year level of a Bachelor of Design degree;
- a digital copy of the final research dissertation must be provided to the Inscape Research Committee.

The Research Committee wishes you success with your project going forward.

APPENDIX B: DATA ANALYSIS FOR PROJECT ONE

B.1 Introduction

Project one was the first attempt of the blended learning delivery, and took place over ten sessions. The project brief required each student to design a *skirt*, make the pattern and construct their garment. Appendix B gives a narrative account of the set-up for the project, exploring the students' baseline knowledge and previous experiences with blended learning and the design of the blended learning approach using the BLC model. The lecturer assessed the blended learning environment by observing the students and documenting her findings in the observation schedule: this gave her insights into her own experiences. To assess the students' experiences, their interviews and the reflective exercise were reviewed to understand their perspective on the 'blend" of the blended learning delivery.

B.2 Stage 1 data analysis and results

During the first stage (quantitative stage) of data collection, the online questionnaire was administered via Google Classroom using Google Forms. All seven students in the second year Fashion Design class volunteered to take part in the first project. In order to categorise the data collected, a statistical breakdown involving charts was used, allowing for a comparison and discussion of the findings (for the questionnaire answers see Appendix F). The online questionnaire was designed to give insight into the students' baseline knowledge and their level of preparedness before entering the skirt brief. The questionnaire had three sections with questions pertaining to their baseline knowledge, pattern making and garment construction knowledge.

Questionnaire question breakdown

The questionnaire comprised eighteen questions consisting of both closed and open-ended questions. There were three sections: baseline knowledge, garment construction and pattern making. These were designed to establish:

a) Students' prior knowledge of blended learning and their online capabilities, as well as their access to an internet connection outside of the institution;
b) gaps in the students' prior knowledge and skillsets gained during their previous garment construction briefs; and
c) gaps in the students' pattern making knowledge and skillsets based on the knowledge they had gained in their previous briefs.

The online link to Google Forms was uploaded onto Google Classroom as an assignment (See Figure B.1).

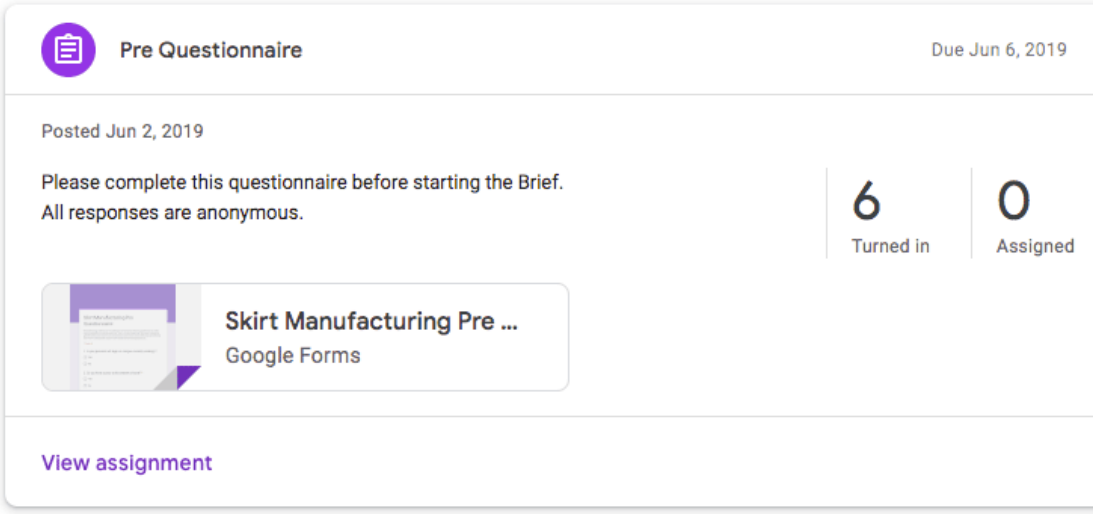


Figure B.1 Google Classroom questionnaire form

The assignment feature allowed the lecturer to keep track of the questionnaire submissions. Once students had completed the questionnaire, they were marked as 'turned in', which allowed a follow up with students who did not submit their questionnaires by the desired deadline. Although it was possible to see which students had submitted, the lecturer did not have access to their individual submissions. Once answered, the questionnaires were linked directly to Google Forms and were organised anonymously by the online platform. This meant that only anonymised, aggregated data were able to be accessed once all students had completed the questionnaire.

Baseline knowledge

On completion of this section, an understanding of the students' online capabilities was gained by looking at their access to Wi-Fi and their prior experiences with the LMS, YouTube and blended learning.

Online access (question 1 and question 2)

All 7 students stated that they had access to Wi-Fi on and off campus. The students' access was integral to the success of the blended learning delivery, because without an internet connection, on campus or at home, the students would have struggled to view the content. The lack of access would have hindered their ability to engage with the online classroom.

Online platforms (question 3 to question 9)

The lecturer needed to understand the students' prior experience with the LMS used, namely Google Classroom (see Figure B.2). When students were asked if they had used Google Classroom before, six out of seven noted that they had, which was not surprising as the institution encouraged the use of the LMS.

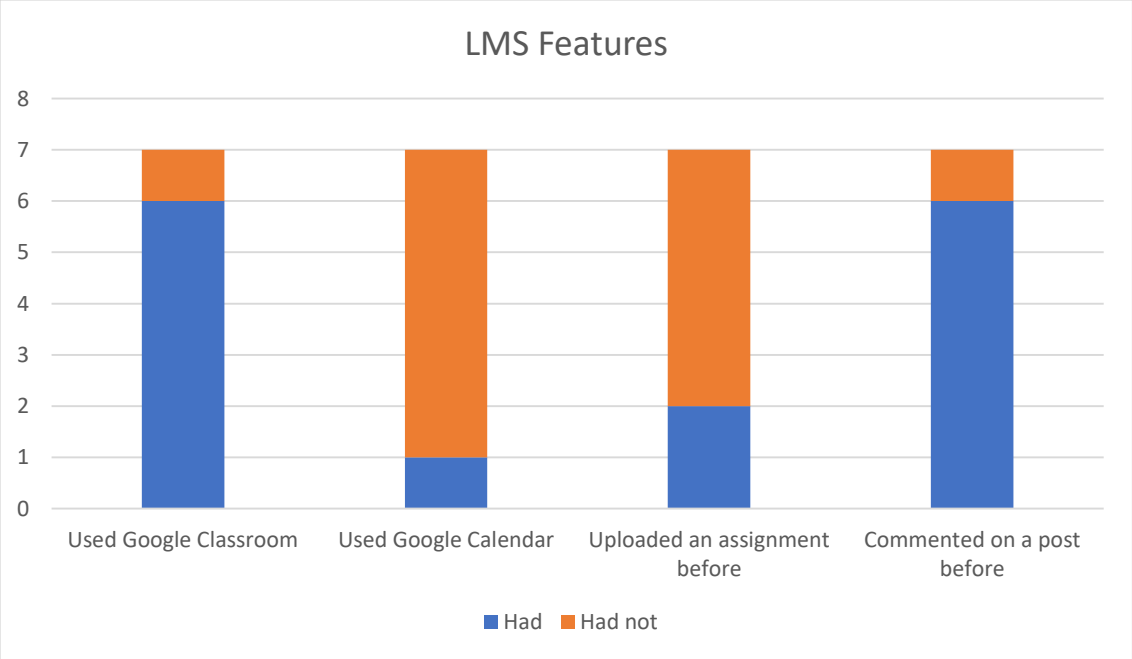


Figure B.2 LMS features

The students were also asked questions regarding their experiences with the features of the LMS. The data gathered also showed that:

- only one student had used Google Calendar before;
  two students had uploaded an assignment before; and
  six students had commented on a post before.

In order to assess the students' preparedness for the study, it was also necessary to find out if they would be able to film their reflection videos. As each student had his/her own laptop, provided by the institution, access to a recording device was not an issue: it was rather whether they had ever filmed or uploaded a video before and what their experience of this had been. As shown in Figure B.3:

  three students had filmed a video before;
- one student had filmed a video on a camera;
- two students had used a cell phone to film a video; and
  one student had uploaded a video to YouTube before.

The results showed that four out of seven students had not filmed a video before, however, content was not developed to show the students how to film a video. This content was not included as there were numerous ways to film a video and the intention was not to limit the students' creativity by providing them with only one way to film it. The students had a list of processes they had to reflect upon in their videos, but the filming and editing was left to their own creative interpretation. It was important for all the students to know how to upload a video onto YouTube as the YouTube link would be shared on the LMS for their peers to view. A video demonstration could provide the students with instructions on how to upload a video to YouTube and how to use the YouTube link to share it to the Google Classroom.

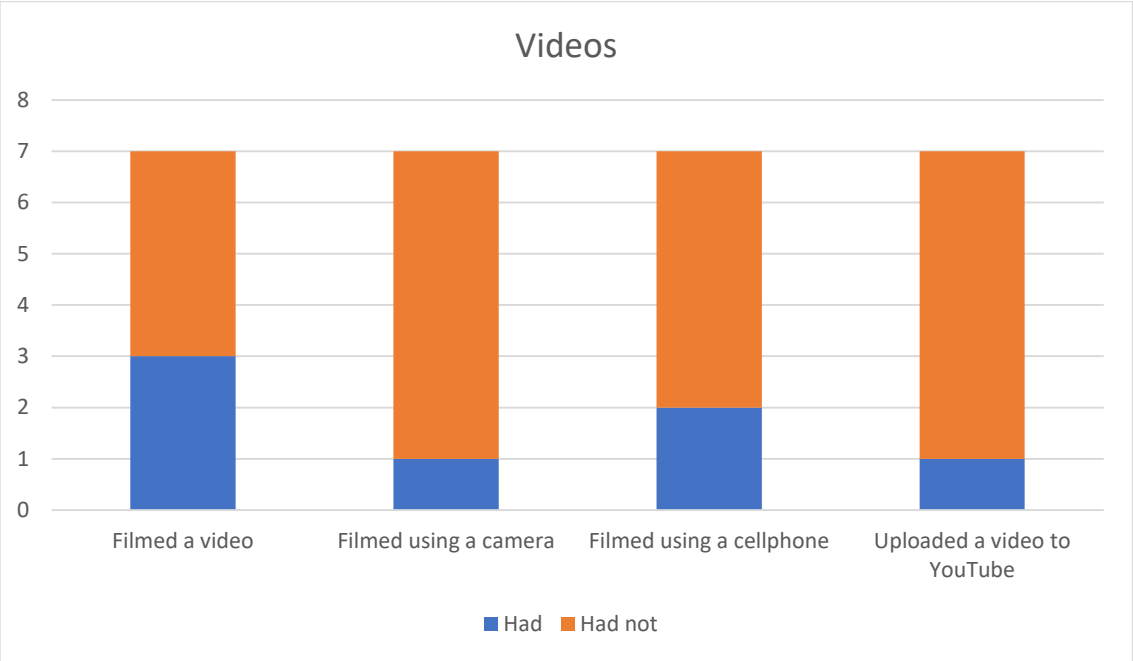


Figure B.3 Videos

Blended Learning Experience (question 10 to question 12)

Information was needed about the students' previous experiences and opinions of blended learning. When asked if they had experienced blended learning before at the institution, four of the students stated they had. Those students who had experienced blended learning identified areas that they had either enjoyed or disliked about the approach (see Figure B.4).

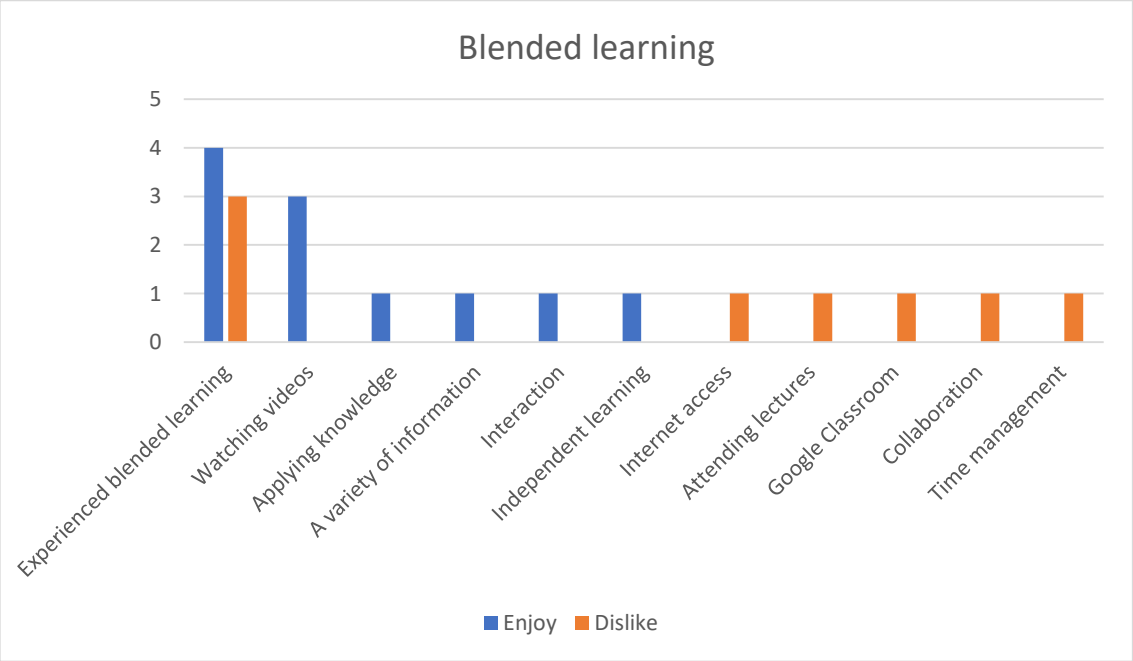


Figure B.4 Blended learning experiences

Video content was an aspect that three students noted that they enjoyed about blended learning, while one student stated that he/she disliked the online content, as limited internet connections made it difficult to complete assignments. The students' internet connectivity was a concern, and therefore data were gathered on their internet access. It had been determined that all the students had access on and off campus, which meant that the lack of access to the internet should not have hindered them in completing their assignments. A student who stated he/she enjoyed video content mentioned that videos allowed him/her to feel more prepared and confident in applying knowledge. It was noted by one student that blended learning allowed him/her to gain a variety of different information, also making mention that: "certain methods of teaching do not go into my head but the information that we are learning is." Another student stated that: "I feel like I am learning more." This aligned with the idea that not all students learn in the same manner. However, for these students blended learning appealed to their learning styles and therefore the approach used in this project should have appealed to them. Interaction was another feature which a student mentioned, stating that he/she enjoyed the face-to-face aspect of blended learning as it was more interactive, and he/she learnt better by interacting with peers and lecturer. On the other hand, one student seemed to dislike the face-to-face learning aspect, favouring online learning rather. It might be assumed that this student did not enjoy interacting with his/her peers, preferring working on his/her own. Another student also preferred working alone, noting that he/she disliked collaborating with peers. It was found by one student that blended learning helped him/her concentrate when working on his/her own, whereas, another student noted that he/she disliked blended learning because he/she had to manage his/her own time and do multitasking. Although there were areas of blended learning that the students disliked, the aspects that they mentioned were attributes which aligned with being a degree candidate and the traits which they needed to master to become a professional. An NQF level 7 descriptor states that students need to be accountable, taking responsibility for their own work (South Africa 2012: 9), which includes managing their own time. Students would also need to learn to work together with their peers, because once students entered the fashion

industry, they would work with a team of designers and would not be able to work solely on their own.

Self-study time (question 13)

The lecturer asked the students how many hours they spend a week on homework for the subject (see Figure B.5).

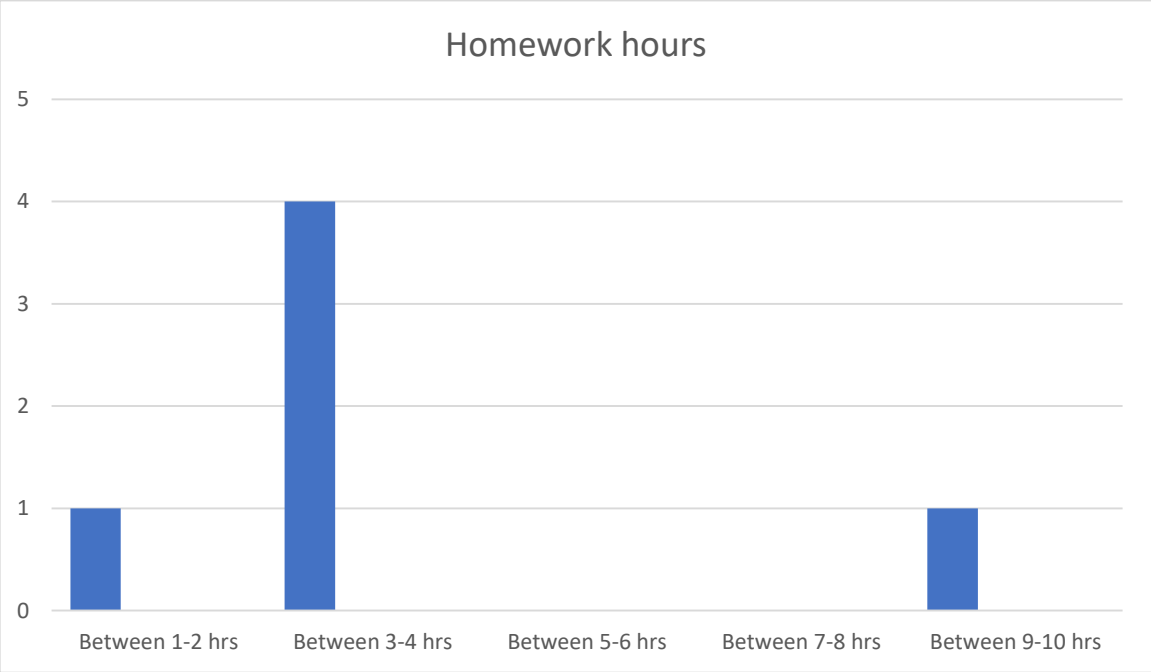


Figure B.5 Average homework hours

This question was answered by only six students. The majority of the students stated that they spent on average three to four hours a week. One student stated that they spent ten hours a week on homework for the subject which was much higher than any other student. The institution recommended that students spend the same amount of time completing self-study as they did attending lectures. For every 1 hour 45-minute lecture, the students should spend 1 hour 45-minutes doing homework for that subject. Given that the pattern making, and garment construction subject ran for 5 hours and 25-minutes a week, the students should have done an average of 5 hours of self-study a week, whereas they were only doing two-thirds of the required amount by doing 3-4 hours a week.

Assessing the amount of time that the students were spending on homework prior to this brief would provide comparative data to the data collected during their

interviews at the end of the brief. This data would also offer insight into the impact that the blended learning approach had on their time spent outside of the face-to-face contact time.

Garment Construction (question 14 and question 15)

The open-ended questions made it possible to understand the gaps in the students' prior knowledge and skillsets gained during their previous garment construction briefs.

Data were also gathered on any construction methods the students might have struggled with in their previous brief to reveal construction methods they needed help with or to work on (see Figure B.6). These data gave insight into areas that they needed clarified or recapped.

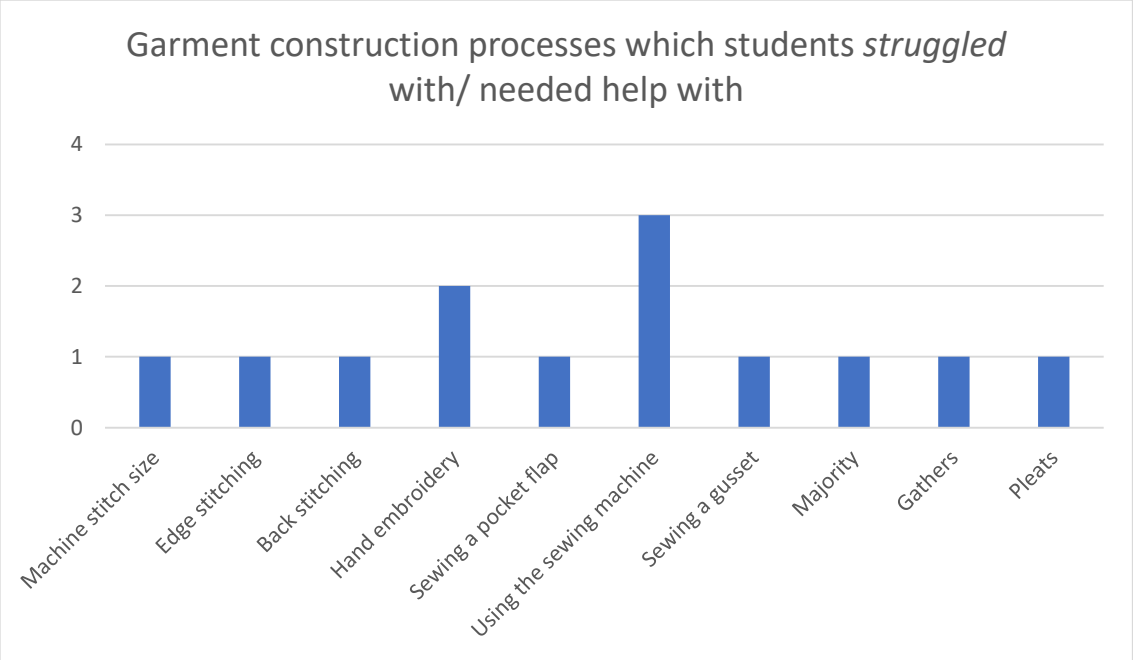


Figure B.6 Garment construction processes

There was a construction process which all seven students found challenging in their previous sewing project. Working with industrial sewing machines was noted by three students. A student stated: "the machine I worked with was hard" and another said: "I struggled with forgetting to change the stitch size". During project one the students would continue using the industrial sewing machines, gaining more practise and confidence. Another area which a student needed

help with was “majority” of the construction processes they had been exposed to in their previous two projects and another student mentioned backstitching. These processes were basic construction methods that the students would repeat and build upon in this project. One student stated that he/she found edge stitching difficult while another mentioned sewing on a pocket flap, which is a process that also involves edge stitching. These processes were also aspects that would improve with practise as there are numerous sewing processes which require edge stitching as a finishing stitch or securing stitch. Sampling the processes before would allow them to work on developing this skillset prior to completing them on their projects. A sewing process which was mentioned by one student was sewing a gusset which involved the process of turning a corner while sewing. This was a tricky process to grasp for many students but again it is a process which they will have to apply often in their sewing careers. In this project, some students may have revisited this process when sewing a waistband. The students were encouraged to sample all processes associated with constructing a skirt and as such they would have explored this process again. Lastly, two students mentioned that they had struggled with the hand embroidery. It was essential for the students to develop their hand sewing skillset as many construction processes required hand stitching. During this project the students would be introduced to two new hand sewing methods for them practise and master. Another area which two students mentioned was gathers and pleats. These processes had been covered in their previous sewing project. Video content had been supplied to the students addressing these processes.

This section gave clarity on various construction processes which needed to be recapped in the video demonstrations:

- general sewing etiquette needed to be addressed in each construction video;
- clearly stated stitch sizes needed to be added before sewing the seam or top stitching;
- clarity of the foot placement needed to be added before demonstrating top stitching;
- back stitching needed to be demonstrated in each construction video;

- hand stitching such as slip stitches and blind hems needed to be added;
- opportunities for sampling needed to be added to practise processes; and
- references of skirts with pleats and gathers needed to be added.

Pattern making (question 16 to question 18)

The open-ended questions gave insight into the gaps in the students' pattern making knowledge, in particular the areas which the students did not understand or needed revised (see Figure B.7).

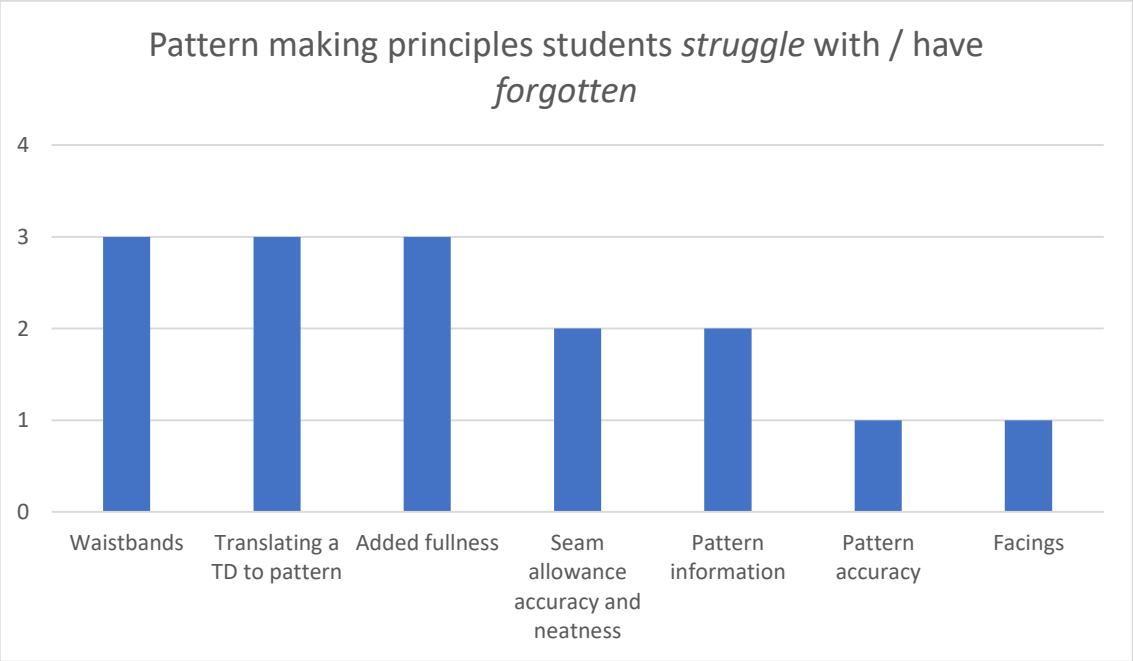


Figure B.7 Pattern making principles

For three students, the process of translating a technical drawing into a pattern was a process which they needed help with. This process would be practised during this project. There were a variety of pattern making processes which five students mentioned. These included pattern accuracy which one student noted, two other students stated seam allowance accuracy and neatness, and another two mentioned pattern information. These processes were all associated with pattern accuracy. The processes could be demonstrated and recapped using video demonstrations and explanations. Another pattern making process which needed to be recapped was added fullness which three students stated.

Waistline finishes were also aspects which needed to be addressed. Three students requested clarity on waistbands while one student stated facings. These were processes which could be clarified using demonstration videos.

The data gave recommendations for additional content that needed to be added:

- the development of content which assisted the students in realising a TD through a pattern;
- recapping the technical information and placement on a grainline needed to be added;
- clarity of the accuracy of seam allowances needed to be added;
- the recapping of the pattern making process associated with added fullness needed to be added;
- the recapping of straight and shaped waistbands; and
- the recapping of facings.

Students were also asked if they had any additional questions or comments, but only three students answered this question. One student asked if revision could be provided on waistbands and facings, as they were unclear on these processes. As a result, it was decided these processes would be recapped in the pattern making videos provided for project one, the skirt brief. Another student asked if the marking requirements for a brief could be provided at the start of the project. The students had access to the assessment criteria for all their briefs at the start of each term. However, students needed to be reminded of this and to be shown how to access this document. Lastly, a student asked if they could have more lectures for revision. Although this was a valid suggestion, there was no leeway in the amount of contact time which is stipulated by the institution, and students were encouraged to practise what they had learnt through self-study at home.

Data collected from the baseline assessment gave clarity to the lecturer by addressing the needs of the students. This information was used to develop and adjust the blended learning approach.

B.3 Stage 2 data analysis and results

The qualitative stage was divided into two sections: the attempt at blended learning, and the lecturer's observations. The blended learning approach was designed using the BLC model by Huang, Ma and Zhang (2008: 6) found in Chapter 3, and considered the data collected during the first stage. In the observation schedule, the lecturer's observations were documented digitally in a reflective journal after each lesson via Google Forms (see Appendix D for the reflective journal extract). The platform arranged the journal entries and kept the content private (the data can be seen in the observation answers in Appendix D). The online observations were designed to assess the blended learning approach from the lecturer's point of view, giving insight into the strengths and areas for improvement of the blended learning approach.

B.3.1 Implementation of blended learning

In designing the blended learning delivery, several considerations had to be made. These included the literature discussed in Chapter 2, the brief outcomes, outlines and the lecturer's lecturing experience. An in-depth explanation of how the BLC Model was used in designing the blended learning delivery for project one is discussed in this section.

a) Pre-Analysis

The pre-analysis stage was the first step in the BLC model. This focused on the characteristics of the learners, the knowledge taxonomy and the blended learning environment itself. The aim of the pre-analysis was to provide a starting point for the blended learning delivery.

(i) Analysis of learners' characteristics

In this study, the pre-analysis involved an *analysis of learners' characteristics,* by providing an assessment of the learners' prior knowledge, learning styles and learning preferences. The students' prior knowledge was assessed in two ways, first from the lecturer's experience and then from the students' perspective. The lecturer's experience informed the assessment of what content had been covered

in the first half of the year and provided her assessment of the students' learning styles and learning preferences.

The previous projects that the students had completed had covered basic pattern making and garment construction processes. The students had a basic understanding of skirt pattern making. However, their garment construction knowledge was limited as they had not made a garment before. The students had experienced sewing seams, overlocking, hems, pleats, tuck, gathers, and sewing patch pockets. For the first half of the year the students were exposed to a teacher-centred approach to teaching and learning. As this was their only learning experience their learning style was determined by their experiences. During the face-to-face contact time the lecturer conducted hands on demonstrations and assisted the students step-by-step through the processes. The students used their homework time to complete their work.

To assess the students' prior experience the lecturer drew on the findings collected during the previous data collection stage, the quantitative stage. This data provided insight into the learners' perspectives. Although the lecturer had covered a variety of processes in the past, she could not be sure of the processes the students felt confident in nor could she be sure of the areas they did not understand. The data provided the lecturer with the processes the students had covered previously but still needed to recap.

(ii) Analysis of learning objects

Once the lecturer understood what the students knew and how they learnt, the lecturer had to assess their *knowledge taxonomy* in terms of defining what should have been taught for the project. Each project consisted of three steps: the design phase, pattern making and the construction of the garment. The requirements of each stage were determined by the project brief requirements (this analysis is discussed in Chapter 4 p65).

(iii) Analysis of blended learning environment

The blended learning environment involved the use of a learning management system (LMS) to assist the students with the online learning component. For this project the LMS which was used was Google Classroom (for a further analysis refer to Chapter 4 p75).

B.3.2 Design of activities and resources

The second part to the BLC model was the design of activities and resources stage. This involved the development of the content and approaches which were needed to complete the blended learning design for the project. The stage consisted of three subcomponents: the design of the blended learning approach, the design and development of the resources, and the activity design. The subcomponents will be discussed separately.

a) Overall Design of Blended Learning

The overall design of the blended learning approach determined the other two subcomponents by establishing the general objectives and activities for the blend. This was done by establishing the learning activities, the blended learning delivery strategy and the blended learning support.

(i) Learning unit (activities)

The *learning activities* needed to result in a change of behaviour through the students learning something they did not know. The project brief stipulated the requirements for this project (a detailed explanation is offered in Chapter 5 p83).

(ii) Blended learning delivery strategy

The *blended learning delivery strategy* established how the blended learning would be approached (an in-depth explanation is offered in Chapter 5 p 79). An example of the step-by-step video demonstrations of the lapped zip is shown in Figure B.8, 9 and 10. Figure B.8 is an example of the purchased skirts which were used to show examples of the professional finish of lapped zips. Figure B.9 shows the pattern making process which was demonstrated in the H&M pencil

skirt pattern video. Figure B.10 is an example of the video demonstrations of the construction processes involved with a lapped zip.

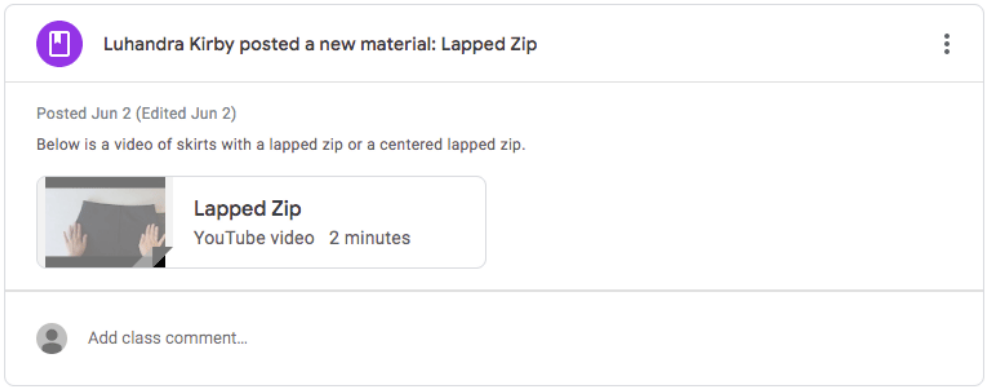


Figure B.8 An example of the video explanation of lapped zips

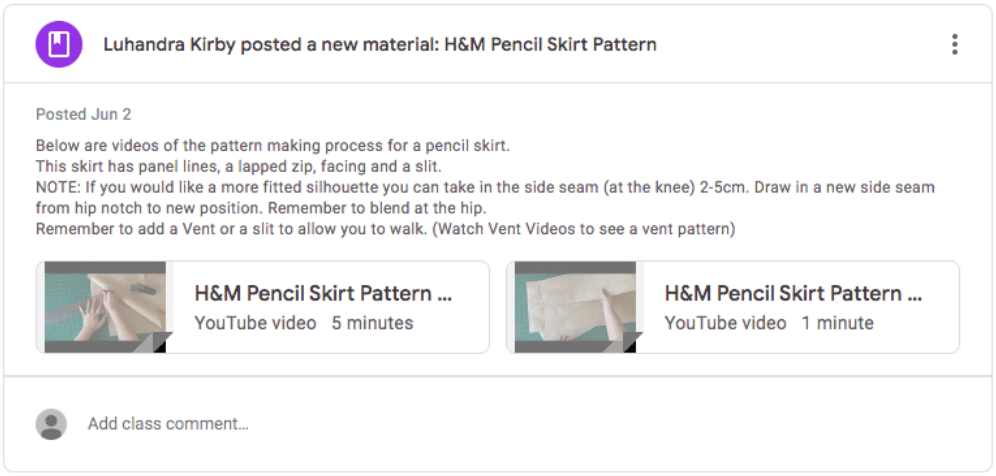


Figure B.9 An example of the video demonstrations of the pattern making processes of a lapped zip

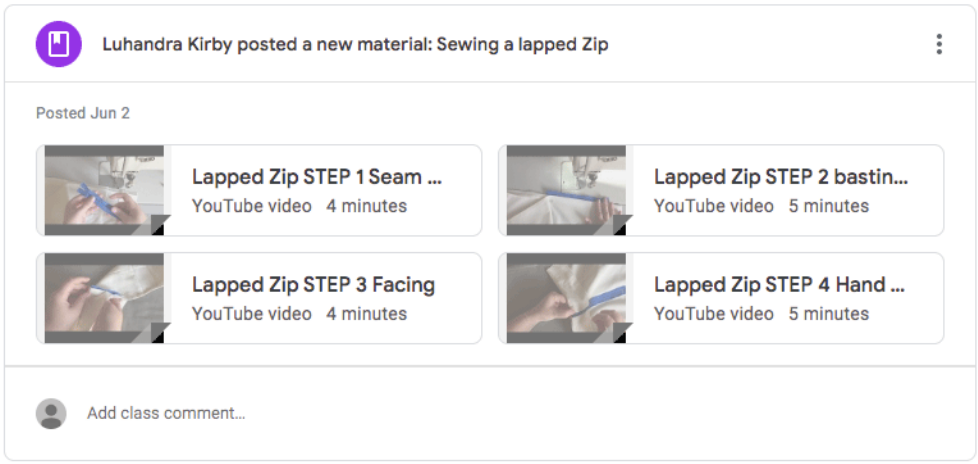


Figure B.10 An example of the video demonstrations of the construction processes for a lapped zip

(iii) Blended learning support

The final aspect to the design of blended learning was to consider the support. The lecturer had to make considerations for both the online classroom and the face-to-face classroom. The online classroom provided the students with easy to follow content which covered all aspects related to skirt pattern making and garment construction (an example of the demonstration videos is provided in Chapter 5 p80).

b) Design and development of resources

The lecturer had explored how the students would be taught, what needed to be covered and the platforms that were used to facilitate the learning process. From this the lecturer designed and developed the resources. This included selecting the content, developing the cases and the presentation of the design and development of the resources.

(iii) Selecting contents

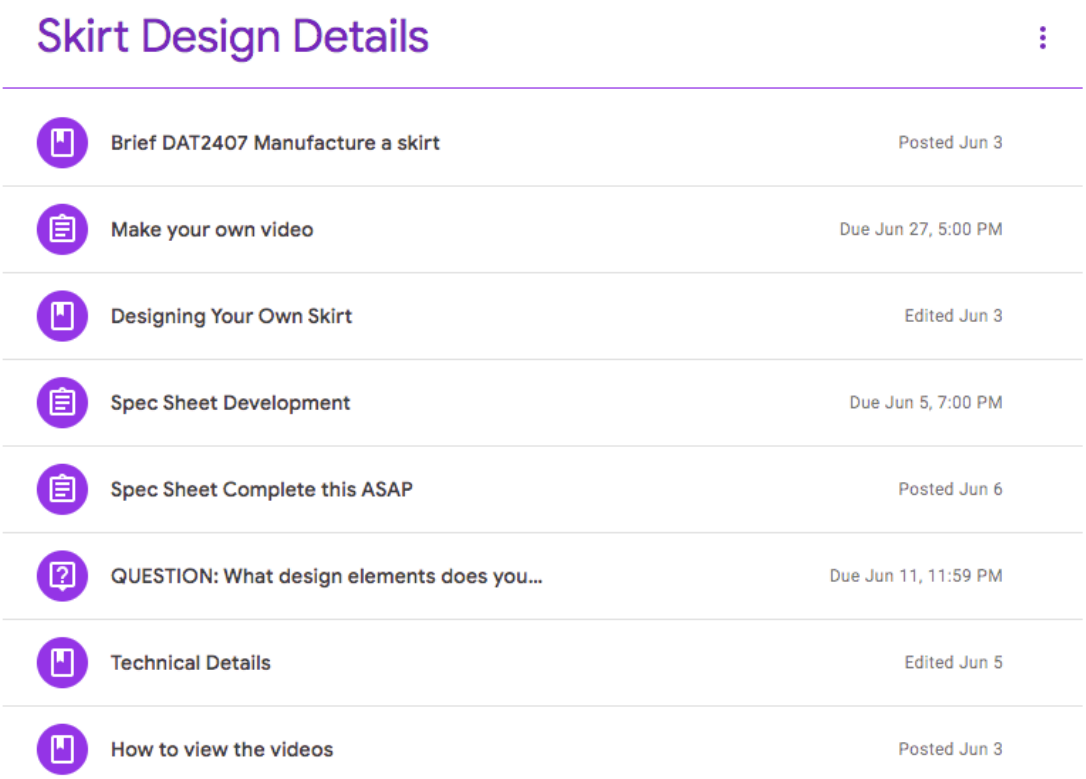
The brief specification document gave insight into the type of content that needed to be produced. There were six parts which needed to be addressed. These included: skirts, technical drawings, specification sheets, pattern making, garment construction, and professional finishing (for a full breakdown refer to Chapter 5 p86).

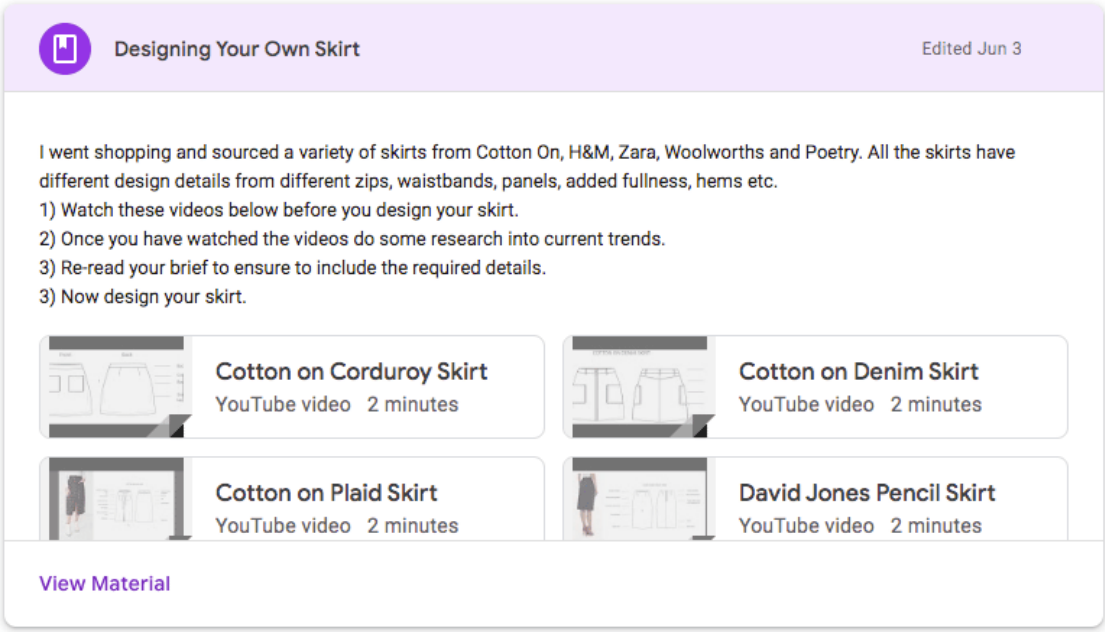
(iv) Developing cases

The next stage involved the *development of cases*, which considered how the content would be contextualized for the students. In this study, for the first project, the lecturer centred all the content around skirts which were purchased from local stores. The skirts had numerous design elements associated with skirts, which provided context to the content. This allowed the lecturer to show the finished product first and then explain the processes to achieve the finished result. The design elements were broken down into the technical aspects, in the form of TDs, the pattern making process and the garment construction process (see Chapter 5 p88 for an example of this).

(v) Presenting design and development

The BLC model considered how the resources would be *presented*. All the processes were presented using videos covering skirts, technical drawings, specification sheet development, pattern making, garment construction, and professional finishing. These sections were divided into topics on the LMS. The first two topics presented the skirts and the knowledge required to develop their own technical drawings on their specification sheets. Figure B.11 shows the first two topics, the skirt design details and the garment feature topics and an example of a subcategory from each topic.





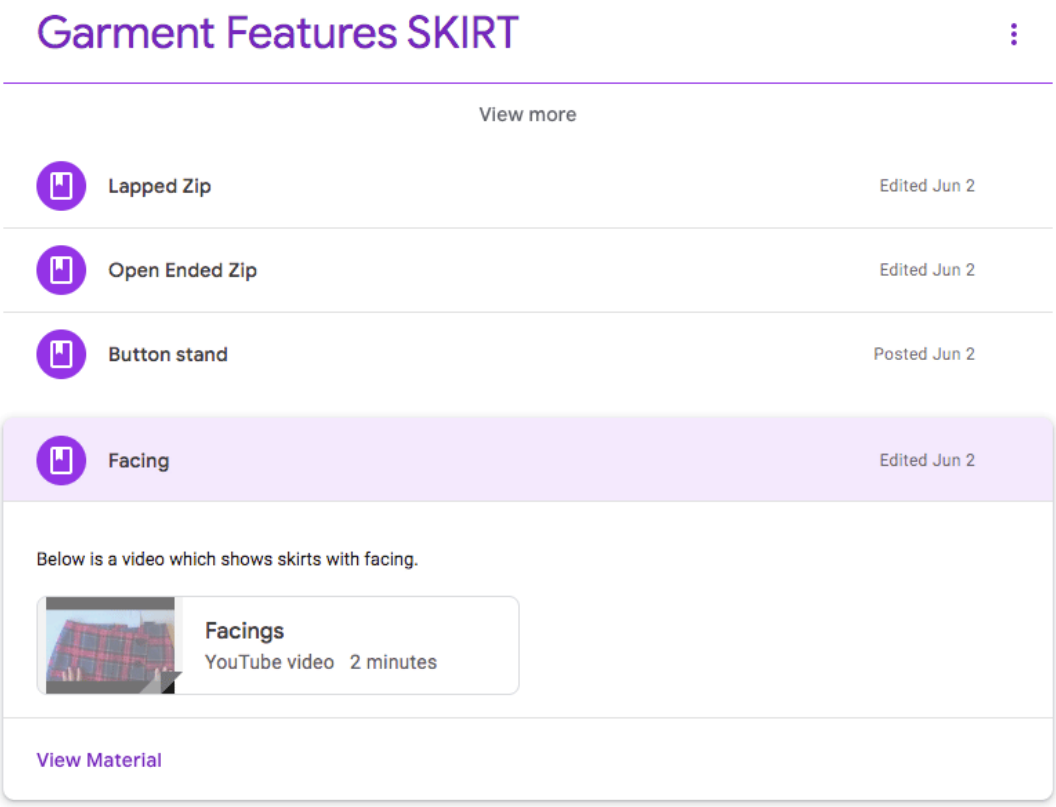


Figure B.11 An example of the skirt design details and garment feature topics

The next topic covered the pattern making demonstration videos. Figure B.12 shows an example of the skirt pattern making topic, and a subcategory.

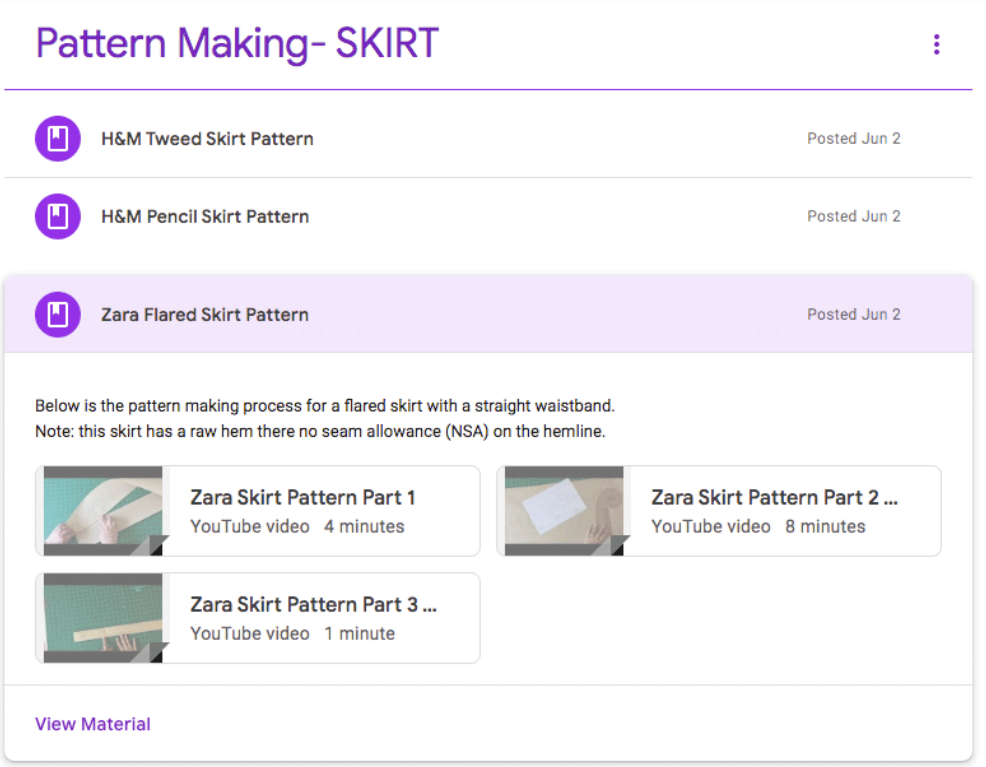


Figure B.12 An example of the pattern making topic

The garment construction demonstrations were divided into numerous topics and subcategories. To assist the students with navigating the garment construction videos a topic on the assembly order of the garment was added. This helped the students to establish the order in which their garments should have been assembled, and this assisted them to determine the order in which to watch the construction videos. Figure B.13 shows the order of assembly topic followed by an example of a few of the garment construction topics.

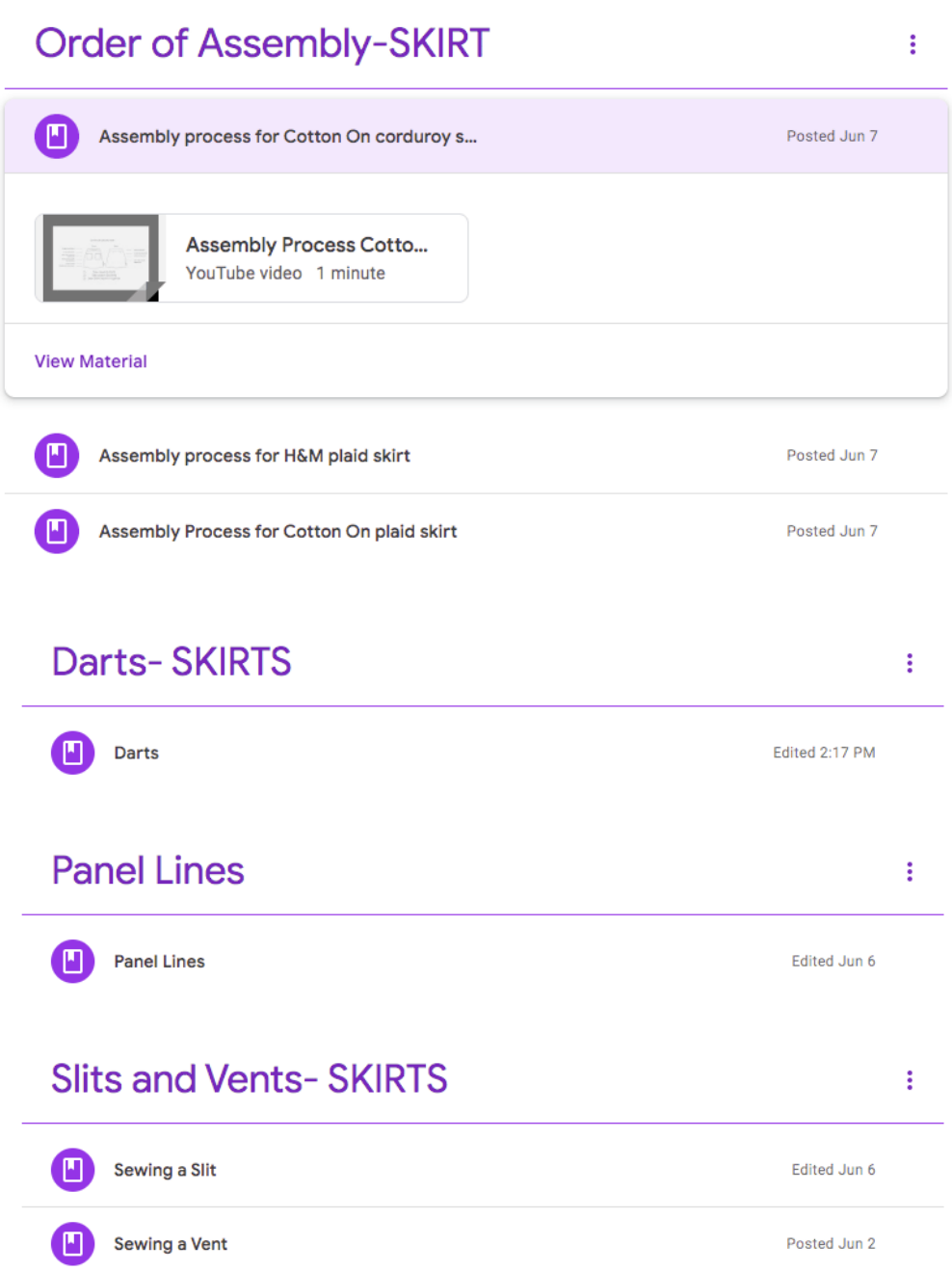


Figure B.13 An example of the order of assembly and garment construction topics.

c) Design of unit (activity)

The third part of the design of activities and resources stage of the BLC model was the design of the unit or activity. This involved the activity based blended learning model, a definition of the performances, the activity objectives, activity

organisation and finally the assessment of the unit. The activity based blended learning model assisted in designing the activities.

(i) Activity based blended learning model

The activity based blended learning model gave insight into the blended classroom considering the roles of the lecturer as facilitator and the students' roles as active participants in their learning process. The four stages, lead-in, planning, acting and reviewing allowed the lecturer to consider each aspect.
The model gave insight into the process and flow of the project which took place over ten sessions or lessons. A discussion on how these four stages were implemented in the study is offered in Chapter 5 p96.

(ii) Definition of performances

The next step in the design of activity stage involved the definition of the performances. The aim of this section was to organise the processes and content developed using the BLC model, by determining when the processes should be delivered (a detailed breakdown is offered in Chapter 5 p92).

(iii) Activity objectives

The design of the activity objectives was the following step in designing the activity. The activity objectives gave insight into the goal of each lesson (a full breakdown is offered in Chapter 5 p93).

(iv) Activity organisation

Next, came the activity organisation, which focused on reviewing the objectives in the previous step. In this study, the activity organisation incorporated the second research phase, the qualitative stage. The lecturer used the observation schedule, to assess each lesson from her perspective. The observations were administered via Google Forms. The reflection stage is expanded upon further in the next section. The lecturer recorded her observations using the observation schedule. The schedule was completed via Google Forms after each lesson.

(v) Assessment of the unit

The final step in the design of activities section is an assessment of the unit. The aim of this was to assess the level of success of the blended learning approach and the students' work. The effectiveness of the blended learning approach was determined using the findings collected from the qualitative stage. The students were evaluated through their reflection videos and the professionalism of the final garments. Their experiences were assessed during the third stage of the research, the reflective stage where qualitative data were collected using interviews and a reflective exercise.

B.3.3 Observation breakdown

The observation schedule comprised fourteen open-ended questions. The lecturer completed an observation schedule after each lesson for the duration of the project. The observation schedule was designed to:

- assess the students' response to the blended learning delivery;
- understand the effectiveness of the flipped classroom by assessing the students' preparedness for the lesson using the lesson objectives;
- assess the students' engagement;
- assess the students' ability to apply their new knowledge or skillsets;
- establish the gaps in the content; and
- establish any learning needs or problems.
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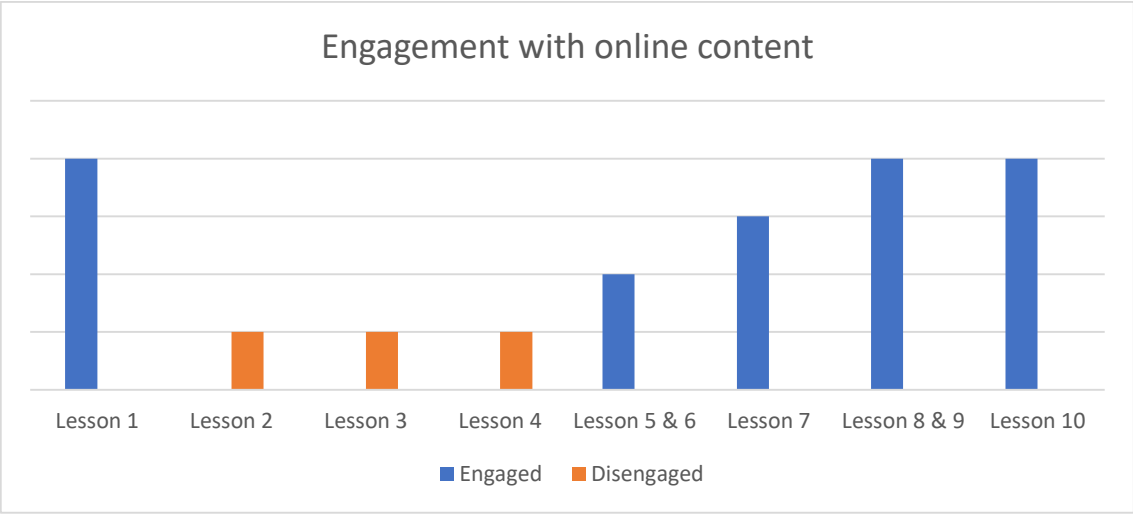


Figure B.14 Engagement with the online content

Response to online content (question 1)

Data were gathered to assess the students' engagement with the online content (see Figure B.14).

During the first lesson the students responded positively to the online content. The students' demeanour was positive and enthusiastic. Only one student mentioned that she had watched the content prior to the lesson, and she had enjoyed the videos. During the briefing the class viewed the design elements video content to assist them with their skirt designs. The students had to review the content and apply the feedback they had received to a specification sheet before lesson 2. The students had not engaged with the online content, nor had they come prepared for lesson 2 or 3. Once the students had to watch the online pattern making content during the lesson 3, to gain the knowledge they needed to make their skirt patterns, they started to engage. Some of the students stated that they had forgotten the skirt pattern making principles and the videos reminded them of the skills they had gained from previous projects. The lecturer assumed that the students' engagement with the content during the lesson, would encourage them to view the content at home for homework. This was not the case for lesson 4, however, as they had disengaged and did not watch the content to prepare for the lesson. The students became resistant towards the change in delivery mode and homework requirements. This could have been attributed to the students' previous experience where they had limited homework for the subject. The briefs that the students had fulfilled prior to the skirt brief involved basic garment construction techniques which were delivered in a teacher-centred approach. The content was taught during the lesson and the students used the lesson time to complete their assignment under the supervision of the lecturer. As mentioned previously, the skirt brief was the students' first experience bringing together their pattern making and garment construction skills. From lesson 5 to 9 the students started to become more willing to accept the new delivery mode and their engagement started to increase. All the students started to use the online content to gain the skills they needed to complete their project. This initial opposition aligned with Shekhar *et al.* (2015: 597) statement that students can be resistant towards new teaching methods.

The effectiveness of the flipped classroom (question 2 to 5)

The lecturer assessed the effectiveness of the flipped classroom by observing the students' preparedness for the lesson and their competencies based on the lesson objectives (see Figure B.15). Only the students who attended the lesson could be assessed.

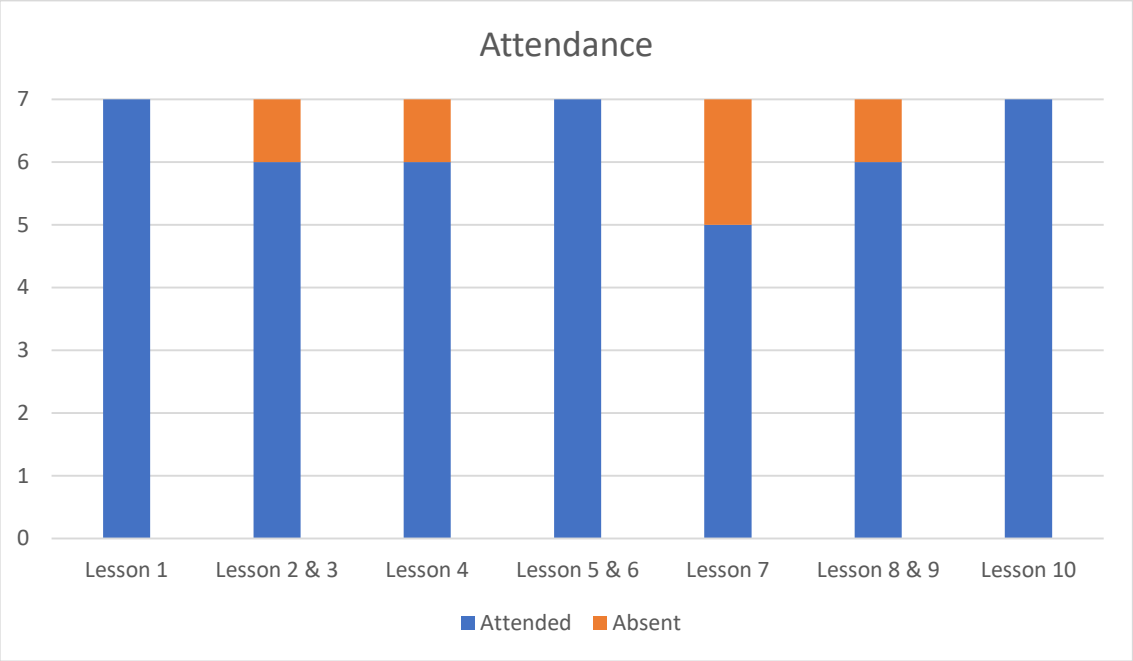


Figure B.15 Student attendance

The level of attendance was relatively good for the duration of the project. For lesson 1, the briefing and lesson 10, the hand in, all students were present. This meant that all students started the project on the same footing, and all students submitted a completed garment in lesson 10. During the project, on average one student was absent per lesson. The flipped classroom approach meant that students who were absent did not miss out on any teaching as all the learning material was accessible online. They did, however, miss out on the opportunity for feedback and facilitation on the processes they had to complete on their own.

The lecturer used the lesson's workflow schedule to guide her in assessing the students' preparedness for the lesson (see Figure B.16).

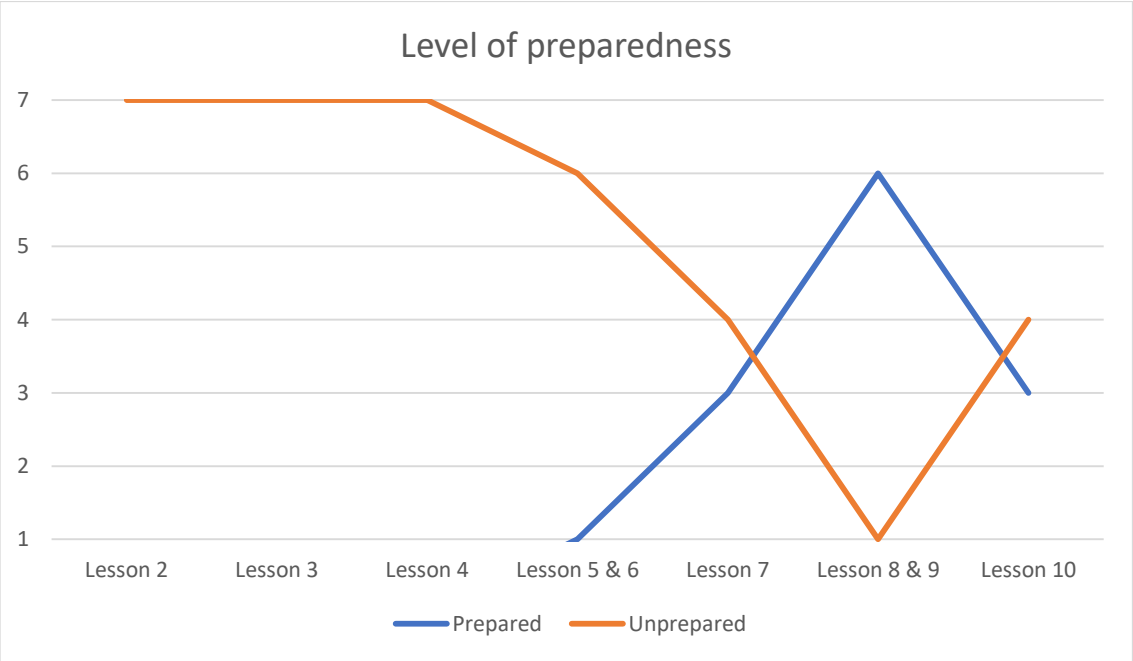


Figure B.16 Level of preparedness

The workflow schedule gave the students guidance on their homework requirements. From lesson 1 to 4, the students were not prepared as they had not fulfilled the homework requirements. During the fourth lesson, the lecturer left the classroom for 45 minutes to give the students time to catch up on their homework. The lecturer felt tempted to revert to her old way of teaching where she would show the students what to do. By removing herself from the classroom, the students were forced to view the content and to figure out what they needed to do for themselves. Once the students accepted that they no longer had the option of being taught in a traditional manner, the core function of the flipped classroom began to come to the fore. The roles, however, of the face-to-face classroom and homework environment switched. The students used the lesson to learn new skills and had to apply their knowledge to their garments in their own time which was not the intention of the flipped classroom approach. During lesson 5 and 6, six out of seven students were using the face-to-face contact time to work on their sampling instead of completing it as a homework requirement. There seemed to be a shift in their preparedness though, as 6 of the students had done some homework but were still not up to date with the workflow schedule. All the students continued to struggle to catch up on the homework objectives. During the final week, for lessons 7 to 9, five out of seven

students started using the flipped classroom approach correctly even though they were not meeting the lesson and homework objectives. The students used the face-to-face contact time to apply their knowledge rather than using the time to learn new skills. These five students had produced samples for homework and were able to apply what they had learnt to their garments during the lesson. In lesson 10, only three out of seven students were prepared for the lesson and had filmed and uploaded their reflection videos onto the LMS and two students had filmed videos but had not uploaded them.

The lecturer used the lesson objectives to assess the students' competencies (see Figure B.17).

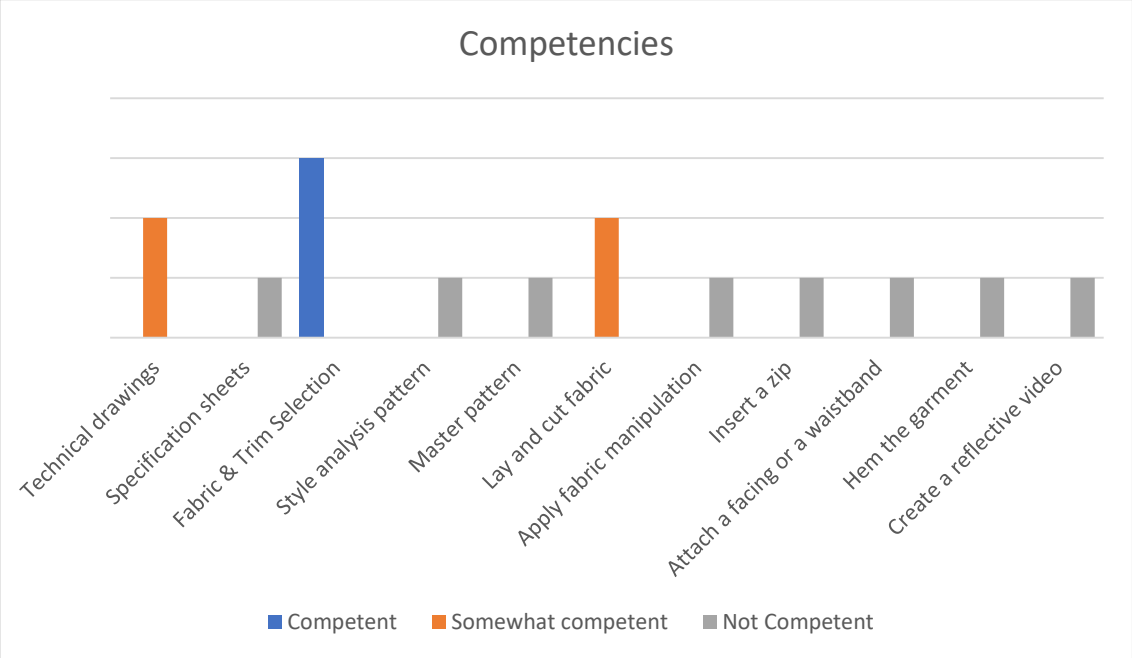


Figure B.17 Competencies

The students' overall lack of preparedness and initial resistance meant that the students' progress throughout the project did not align with the lesson or homework objectives. For lesson 2, none of the students had produced their specification sheets, nor had they corrected their technical drawings. As a result their technical drawings showed that they were somewhat competent as they had produced technical drawings but not to the required level. During the lesson, the students showed that they were competent in their fabric knowledge by choosing appropriate fabrics for their skirt designs. The lesson and homework objectives

for lesson 3 required the students to make a style analysis and a master pattern. The students had not done their homework and as a result did not show any level of competence. For homework, to prepare for lesson 4, the students had to lay their pattern pieces and cut their fabric as well as sample their fabric manipulation and zips. Except for one student, six of the students were able to cut their fabric accurately while the one student was unable to as she was working with an asymmetric design and had cut mismatched pieces. Out of the six students who had cut their fabric, only one student could apply the fabric manipulation to her garment. The remaining students did not sample the fabric manipulation nor the zips and therefore did not meet the lesson objectives. This lack of preparedness continued from lesson 5 onwards which meant that all the students did not meet the lesson objectives and therefore did not show any level of competence.

The flipped classroom approach did not initially work due to the students resistance towards the new teaching method. In the third week of the project the approach seemed to work, as students started using the homework time to gain knowledge and the face-to-face contact time to apply their new knowledge to their garments. Although the students were not meeting the lesson objectives and were therefore not showing the level of competencies they should have, they were able to complete the processes once they started engaging with the content. In the final week, however, the students were still asking what to do, even though they had sampled the processes. This could have been because they did not have the confidence in themselves to trust what they were doing was correct. One student mentioned that she did not know if she was doing the process correctly even though she was following the content and had produced an accurate sample. When the students asked what to do, they were guided back to the video content for answers. Once the students started seeing what they had sampled was indeed what the video demonstrated, they were willing to apply the processes to their garments. The lecturer started to have the opportunity to assist the students in navigating their new knowledge.

The students' engagement (question 6 and question 7)

The students' level of engagement was assessed by observing the students' attitudes during the face-to-face contact time (see Figure B.18).

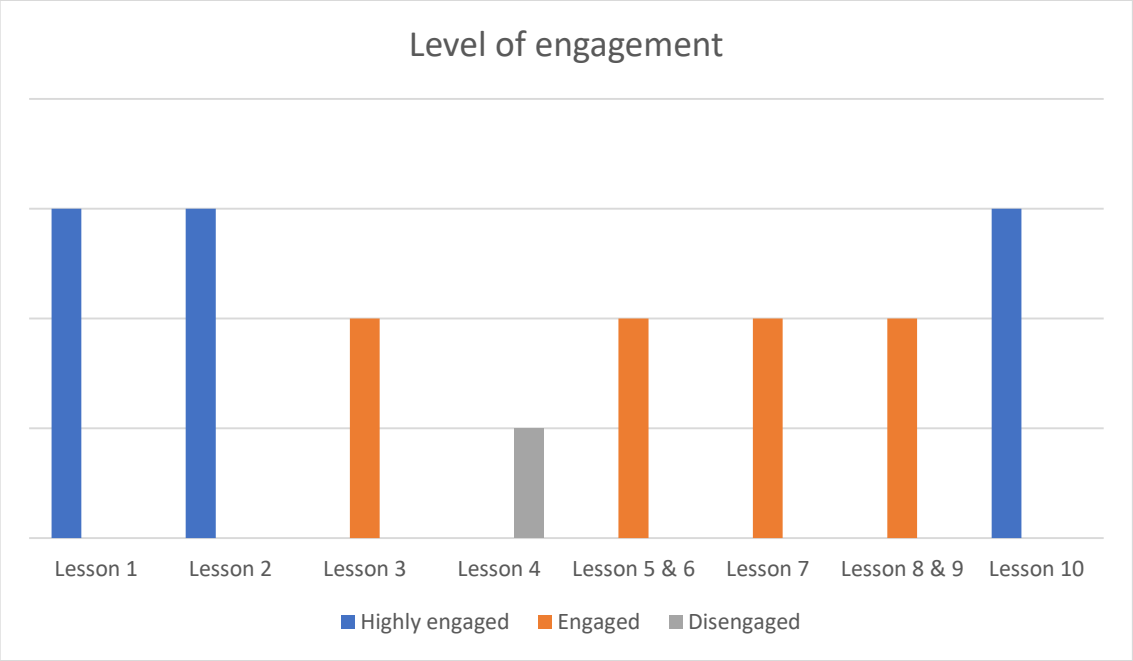


Figure B.18 Level of engagement

The students were highly engaged during the face-to-face contact time in the first lesson of the study. The students seemed positive about the project and five out of seven of the students were enthusiastic while watching the videos in class. During the fabric shopping exertion in lesson 2, all the students were highly engaged and enjoyed the experience. At the end of the exertion, five out of seven students discussed their experience and stated that they enjoyed shopping with the lecturer because they could ask questions, receive feedback and confirm their final selections before purchasing their fabrics and trims. For lesson 3 the students had not done their homework which resulted in them being a bit panicked but at the same time, they engaged with the content and tried to catch up their work. In lesson 4 the students had disengaged with the homework and as a result disengaged during the contact time. The students were quite negative during the lesson as they wanted to be taught in the same traditional manner as the past. From lesson 5 onwards the students realised that the blended approach would not be abandoned and although they were not prepared for the lesson,

they worked hard during the contact time to make progress. All of the students, however, seemed panicked during the lessons as they were feeling the pressure given that they were behind. The students were highly engaged during the final lesson and in high spirits because they were handing in.

The areas that the students were disengaging with during the project were assessed during each lesson (Figure B.19).

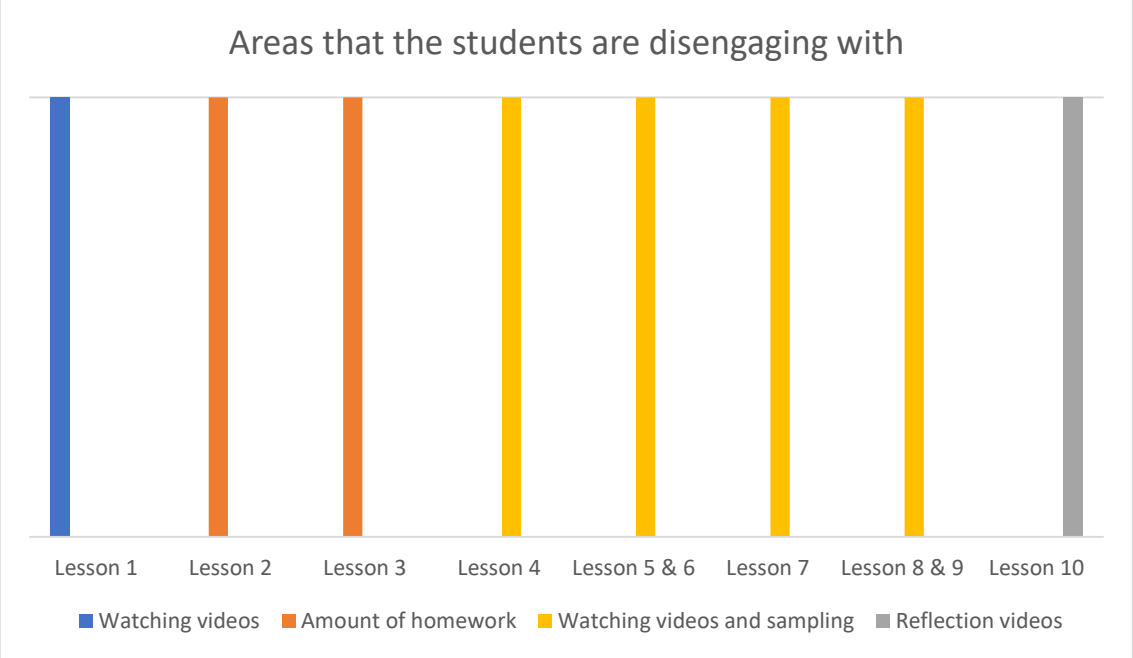


Figure B.19 Areas that the students are disengaging with

During the first lesson two students did not engage with the video content. Instead of watching the content with the class, one of the students worked ahead on her technical drawing while the other student used her cell phone. For lessons 2 and 3, it seemed that all the students disengaged with the amount of homework as they did not do their homework. In their previous projects that had only used the contact time to complete their assignments and as such, they did not have any homework. The timeline for those projects were such that the project could be completed during the allocated class time only, whereas this project had a limited timeframe with too much work to complete solely in class. During lessons 4 to 9 the students continued to disengage with the flipped classroom approach and did not engage with the video content and the sampling process. In lesson 10 the reflective videos were not completed by four of the seven students. Those

students felt that they did not have time to complete the videos and stated that they did not feel that it was necessary to film a video because it was not part of the assessment criteria.

Application of skillsets and knowledge (question 8 to question 11)

The students' ability to apply their new skillsets and knowledge were assessed based on the lesson and homework objectives (see Figure B.20).

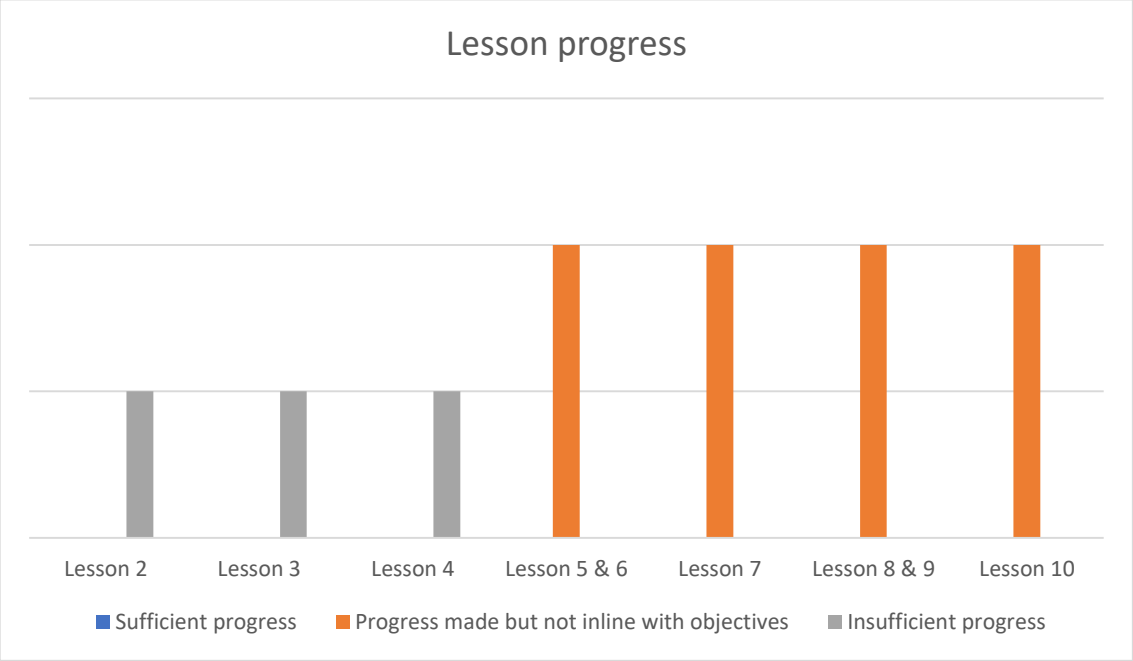


Figure B.20 Lesson progress

The students' lack of preparedness impacted their lesson progress as they were unable to meet the lesson objectives and in turn did not make sufficient progress in any lesson. By not engaging with the homework objectives all the students made insufficient progress during lessons 2 and 3. During lesson 4, only one student was prepared for the lesson and in turn made progress that lesson. This meant that majority of the students made insufficient progress during this lesson. By lessons 5 and 6 all the students had fallen behind of the homework and lesson objectives, however, all the students started to make some form of progress during these lessons. This progress continued for lessons 7 to 9, although, all the students worked at their own pace to catch up and complete their garments. During lesson 10, the students did not make sufficient progress, although all

seven students handed in completed garments, only three students met all the lesson objectives and handed in their reflective videos by the end of the lesson.

The students' ability to apply their knowledge was assessed in three ways: their ability to apply their knowledge with little assistance; their inability to apply knowledge because they had insufficient knowledge; and their resistance to applying knowledge on their own and rather wanting step-by-step guidance (see Figure B.21).

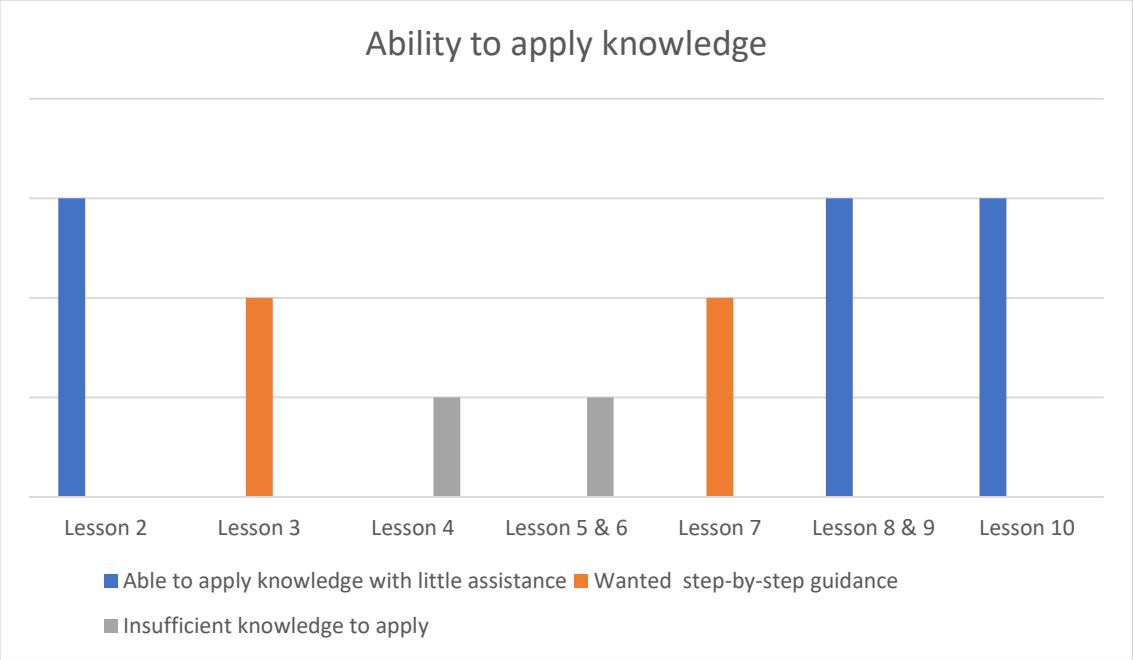


Figure B.21 Ability to apply knowledge

The hope for this study was for the flipped classroom approach to enable the students to apply knowledge on their own with facilitation by the lecturer. The students' lack of preparation and engagement in the learning process meant that for 4 lessons the students were unable to apply their knowledge. When the students had engaged with fabric shopping during lesson 2, they were able to draw on their own knowledge and select appropriate fabrics for their designs. During lesson 3, all the students wanted to be told what to do rather than watching the online content and applying their knowledge. As only one student was prepared for lesson 4, 6 students had insufficient knowledge to apply. The same can be said for lessons 5 and 6, the students used the lesson to gain knowledge rather than applying their knowledge. Two students made it clear to the lecturer

that they wanted to be shown exactly what to do and did not want to navigate the content to extract what was relevant to them. These students did not want to gain as much knowledge as possible on the field, which was under study, rather, they only wanted to know how to complete the current task. This confirmed Paulins and Moeller's (2017: 9) argument that students are resistant towards learning activities which promote the understanding of core concepts rather, they seek the answer to the problem from the lecturer. The lecturer's desire was for the students to finish the brief with a core understanding and not just the solution to the problem. In lesson 7, the students started to use the lesson to apply their knowledge but looked to the lecturer for guidance instead of believing in their abilities. During lessons 8 and 9, five out of seven students were able to apply the knowledge they had gained for homework, during the lesson. This allowed the facilitation of the students' learning process. For lesson 10, only three students handed in their reflection videos, but all the students were able to show evidence that they were able to apply their knowledge. This was because the four students who did not hand in videos took part in impromptu presentations and had to articulate the processes they had followed. After the lesson another two students uploaded videos onto the LMS. The videos and presentations showed that all the students were able to recall their knowledge and articulate the processes they had followed. To do this, the students displayed their patterns and expressed the pattern making principles that they had applied. The students focused on the concepts of suppression or added fullness, waistline and hem finishes, and pattern landmarks. The students were able to express the transformation of their working patterns to final garment pieces, demonstrating how the pieces fit together, functioned, and the technical information associated with their designs. The three rstudents who had filmed the reflection videos were able to articulate themselves better and more clearly than the students who had to present in class because those students had time prepare and edit any errors they made in their videos. When the students had to discuss the construction processes they had followed to complete their skirts, the students were more confident with the terminology and expressing the processes they had pursued. A student stated that she found it easier to talk about the construction processes because she had recently completed those processes whereas her pattern had been completed three weeks prior to the hand in.

The students' skillset was assessed separately from their ability to apply their knowledge (see Figure B.22). It was not only important to understand the students' knowledge but also to assess the level or standard of the processes. Students may have known how to do something, but it may not have been executed to a professional standard. It was important for students to understand the level of execution expected of them in their pursuit to become professionals.

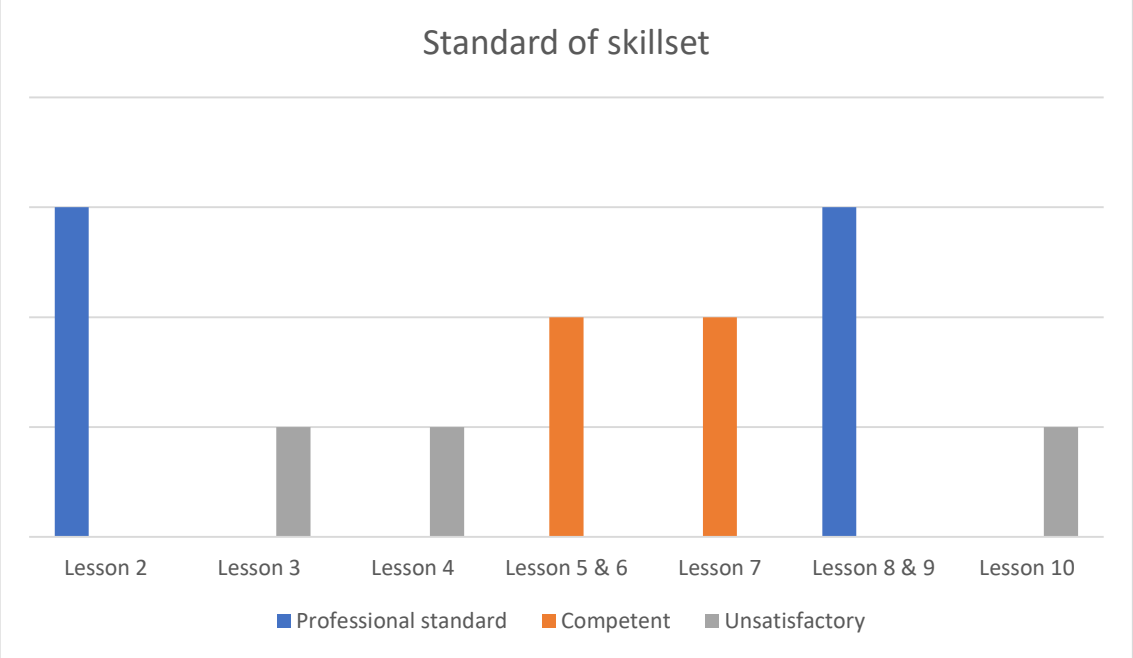


Figure B.22 Standard of skillset

During lesson 2 the students selected fabrics which were appropriate for skirts and aligned with industry standards in terms of fabrications for skirts. For lesson 3 and 4, the students' lack of preparation meant that they did not have any skills to apply. During lessons 5 to 7 the students were gaining knowledge during class and applying it at home which meant that their application of knowledge could not be facilitated. As a result, their skillset did not meet a professional standard as they had made some basic mistakes which could have been prevented. In lessons 8 and 9 they applied their knowledge during class and as such were producing work of a much higher standard because intervention could happen during the process. Only two students had completed their skirts by the end of lesson 9 which meant five students had to complete their skirts by themselves for homework. The way in which they approached some of the processes resulted

in unsatisfactory results. For two students, fit was an issue and they all developed their own solutions to alter the fit, but none were of a professional standard. One student made a skirt to fit a standard size 32, but it did not fit her, as a result she altered the waistband only which resulted in additional fullness at the hips because it was altered incorrectly. Another student was absent during a few lessons and as a result had a pattern issue which affected the insertion of her facing. Instead of correcting the pattern, cutting a new piece that would fit the waistline and inserting it, she used the incorrect piece which was larger and pleated it to fit into the waistline. Professional finishing was also not completed to a professional standard as most of the students did not remove the lose threads nor did they press accurately. All three students who had inserted facings did not follow the last step of the video which called for a hand stay stitch. These students were asked to re-watch the video and to apply that process to their garments.

Gaps in the content (question 12)

Once the students had designed their skirts it became evident that each of their sequence of assembly was unique and a standard approach would not work for all their designs. Additional content was produced to explain the assembly processes of the purchased skirts giving the students an indication of their order based on the design elements of the purchased skirts. In the second week of the study, many students had to unpick their samples to correct their errors. None of the students knew how to unpick overlocking in an efficient manner. There should have been content developed on how to unpick overlocking, however, a live demonstration was done to show the students how to do it instead as they needed to know how to do it in that moment. A student had designed an asymmetric design with a facing panel which had a mitred corner. Content had not been developed to address mitred corners; however, it was an important process to address as many students would need to know how to do so in the future. For the purpose of this study a one-on-one demonstration was used to guide the student through the process. Finally, it was important that the video content did not combine processes as processes could be easily overlooked.

The lecturer had not separated the finishing of facing into its own video and as a result many of the students missed the finishing stage.

Learning needs (question 13 to question 15)

The lecturer noted that the following learning needs would need to be addressed:

- the technical drawing and annotation skills as the students did not engage in this process nor did they complete a specification sheet;
- pattern information as many students did not add their information which resulted in confusion during the construction process because they could not identify which piece was which;
- pressing skills because many students skipped this step resulting in unprofessionally finished garments;
- the value of the sampling process which allowed the students to practise their processes, gaining confidence before applying it to their designs; and
- the importance of accuracy and fit as seen in their final garments which for two students became unwearable due to fit issues.

The data collected from the attempt of blended learning allowed the lecturer to assess the blended learning delivery from her perspective based on the students' participation, engagement, abilities and the gaps in the content. The data collected in this section was used to assist in the development of the blended learning approach for the next project. The data also allowed the lecturer to compare and discuss the students' opinion in the next stage.

B.4 Stage 3 data analysis and results

The reflective stage was divided into two sections, the students' interviews and the reflective exercise. The interviews were administered via Google Forms during the third stage of data collection. The students took part in one-one-one interviews by a third-party interviewer. The third-party transcribed the interviews and uploaded the information onto Google Forms (in an anonymised format). The platform arranged the data and ensured the anonymity of the participants by only allowing access to the aggregated data. The reflective exercise was

conducted by the lecturer as a group discussion during class and the students comment and opinions were transcribed by the lecturer. The qualitative data collected from the two sections were categorised and broken down into charts, allowing for comparison and discussion (for the interview answers see Appendix D). The interview was designed to gain an understanding of the students' engagement with the blended learning delivery, their level of enjoyment and lastly the number of hours they spent on the online classroom and completing their deliverable. The reflective exercise was designed to gain a deeper understanding of the students' preferences.

B.4.1 Interview question breakdown

The interview consisted of 16 open-ended questions. The interview questions were designed to understand the students' experience of the blended learning approach.

The level of enjoyment (question 1 to question 3)

The lecturer was interested in gaining an understanding of the students' level of enjoyment of the blended learning approach (see Figure B.23).

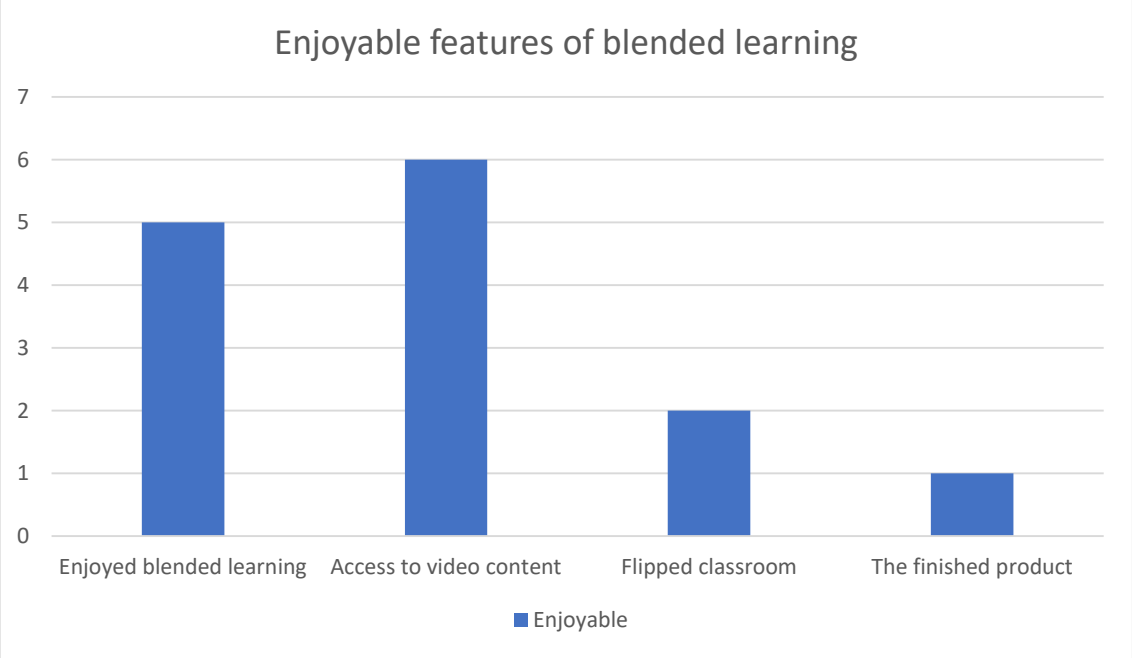


Figure B.23 Enjoyable features

When asked if the students enjoyed the blended learning delivery, five students stated that they did enjoy the approach, while two stated they did not enjoy it. Although only five students enjoyed the delivery, all seven were able to find parts of the delivery that they enjoyed. Most of the students, except for one, enjoyed the access to video content. One student stated that: “you can take your time to watch the lesson online as many times as you want and thoroughly understand the process”. Another student mentioned he/she enjoyed the video content because: “you could always refer to them if you want[ed to]”. Another aspect which two students mentioned they enjoyed was the flipped classroom approach. One student said: “it is a good idea to learn prior to the class and was helpful to know the skills before doing it on the skirt”. The other student stated that he/she enjoyed: “getting things for myself instead of being told”. The students feelings towards the flipped classroom is expanded upon in questions 13 and 14. Lastly a student mentioned that he/she enjoyed seeing the final product come to life.

There were also aspects of the blended learning approach which the students did not enjoy (see Figure B.24).

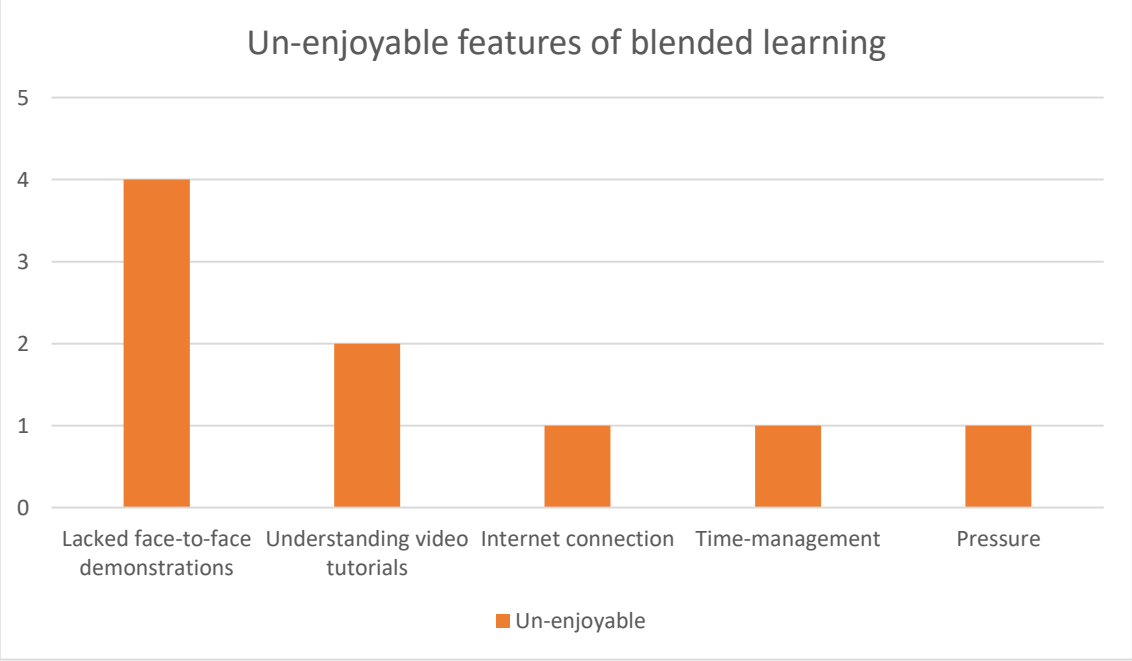


Figure B .24 Un-enjoyable features

The lack of face-to-face hands on demonstrations were stated by four students as a contributor to their dissatisfaction with blended learning. For many of the

students they wanted to do the processes with the lecturer. One student stated: “I would have preferred to do it with her”. Another student noted: “I did not like sampling before seeing how it is done properly. I would have enjoyed doing it with the lecturer before watching videos”. For a student he/she felt that: “sometimes it would be hard if the lecturer was not present to show us how to do things”. Another student was seeking confirmation during the process, he/she stated that they did not enjoy: “not being able to get feedback from your lecturer as you did your work to confirm that you are following the process of sewing correctly”. For two students understanding the video tutorials was challenging. One student mentioned that he/she did not enjoy blended learning because: “I was not able to understand the tutorials”. For another student, he/she stated: “I do not learn better when I use videos”. These two students may have learnt better with face-to-face demonstrations as their peers had stated. Demonstrations could have provided clarity and appealed to the students’ learning styles. Internet connection, time management and pressure were three aspects of blended learning which two students mentioned they did not enjoy. For one student time management and internet connection issues were areas which he/she struggled with. The blended approach was dependant on internet access as the videos were only available online. If the student struggled to view the content, they would not have been able to do their homework which would have impacted their time management. The other student felt pressurised by the learning approach, stating: “the fact that it was a lot of pressure coming into class with processes which might not have been done the right way”. This student lacked confidence in his/her abilities, and this aligned with the lecturer’s observations that many students did not trust what they had done was correct.

Students’ homework experiences (questions 4 to question 6)

The lecturer was interested in assessing the impact the blended learning approach had on their self-study time. The pre-questionnaire determined that the students spent between 3 to 4 hours on homework per week. It should be noted that the recommended amount was 5 hours a week (as per SAQA’s notional hours). Given that the students had class twice a week these figures had to be halved which meant prior to blended learning, the students spent on average 1

hour and 50 minutes on homework after a lesson. The recommended hours by SAQA were 2 hours and 30 minutes.

The below chart provides a comparison between the number of hours spent on homework prior to the introduction of blended learning and the number of hours spent during the approach (see Figure B.25). *(The information for the prior section is based on 6 respondents answers as one student did not answer the question).*

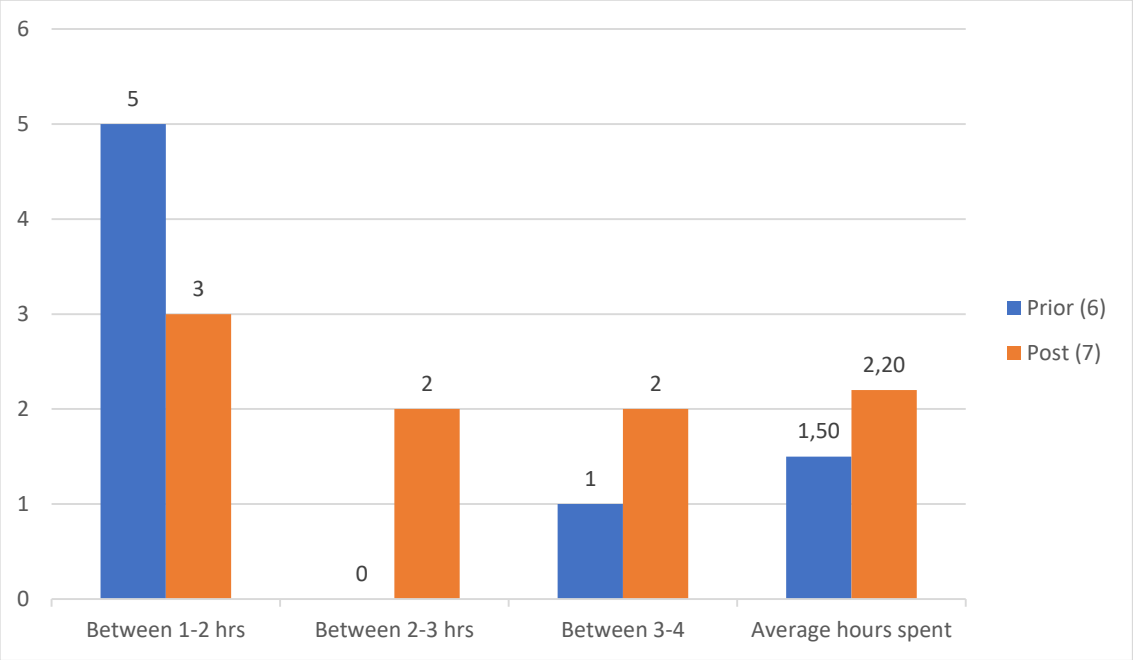


Figure B.25 Average homework hours pre and post blend

The results showed that on average the students spent 2 hours and 20 minutes on homework for the blended learning approach, which was below the recommended hours of 2 hours and 30 minutes. There was only a 10-minute discrepancy, however, 10 minutes, twice a week, for 3 weeks was 60 minutes of homework time which they had not fulfilled. There was, however, a remarkable increase in the amount of time spent on self-study, given that previously the students spent 1 hour and 50 minutes.

The students were asked how they felt about the amount of time required for homework. Their opinions were broken down into three categories: fair, too much, or a need for more time (see Figure B.26).

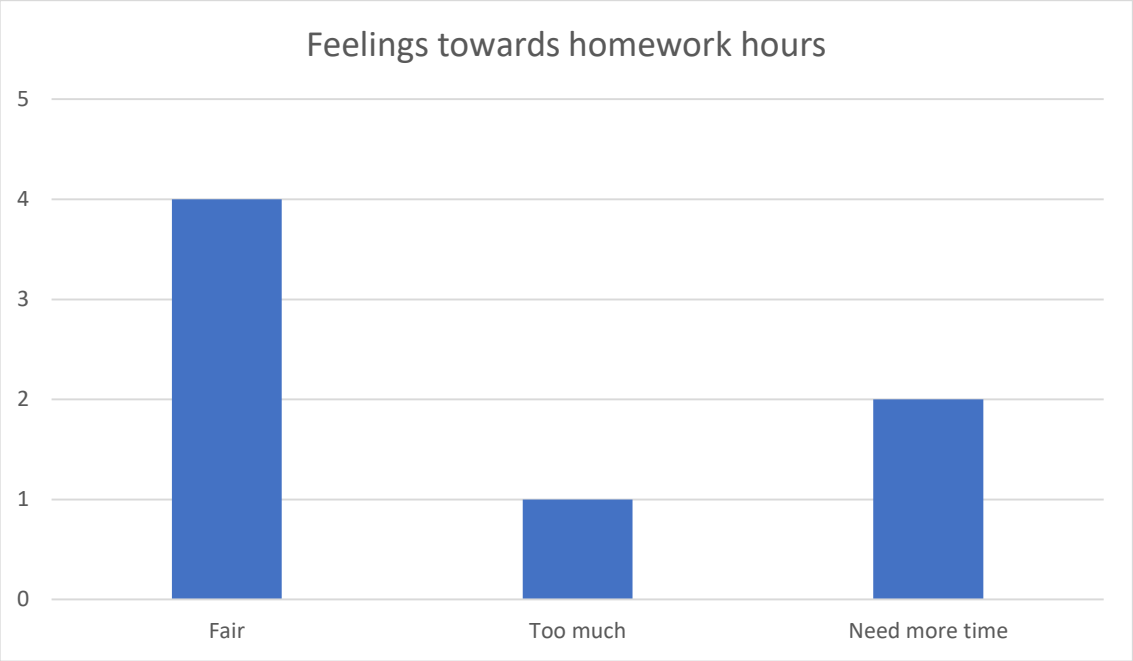


Figure B.26 Feelings towards homework hours

The results showed that four students felt that the amount of homework hours required of them was fair. One student stated that he/she felt it was: “fair, because the work you put in is equal to the results”. Another student noted that he/she felt it was a: “good amount of hours”. A student mentioned that he/she felt: “they are fine, depends on how a person works on it”. For three students they did not enjoy the number of hours required of them. A student stated that: “I feel it was too much as there are other courses we had to put time into, including sewing the garment itself”. The students did have to split their time between other subjects and projects, and they were not used to having as much homework for this subject. There was a contrast between their previous experiences and this project, however, the homework requirements did align with SAQA’s recommendations of the number of hours expected of a degree student. All the students’ lack of engagement with the homework impacted the use of the contact time where they should have been constructing their garments but instead they were using the time to gain knowledge. As a result the students had to work on constructing their garments for homework. The two students who felt that they needed more time stated that: “I feel like we need more time to practise” and “it was very time consuming and you need to set a lot of hours to finish it on time”.

These feelings could be attributed to the students' resistance to homework and the impact that had on their time management. The students had more to do and less time to do it in and as a result had to spend a substantial amount of time completing the objectives and the project.

Additionally, the lecturer wanted to understand the number of hours they needed after the final face-to-face contact lesson to complete the brief (see Figure B.27). Only 6 students answered this question.

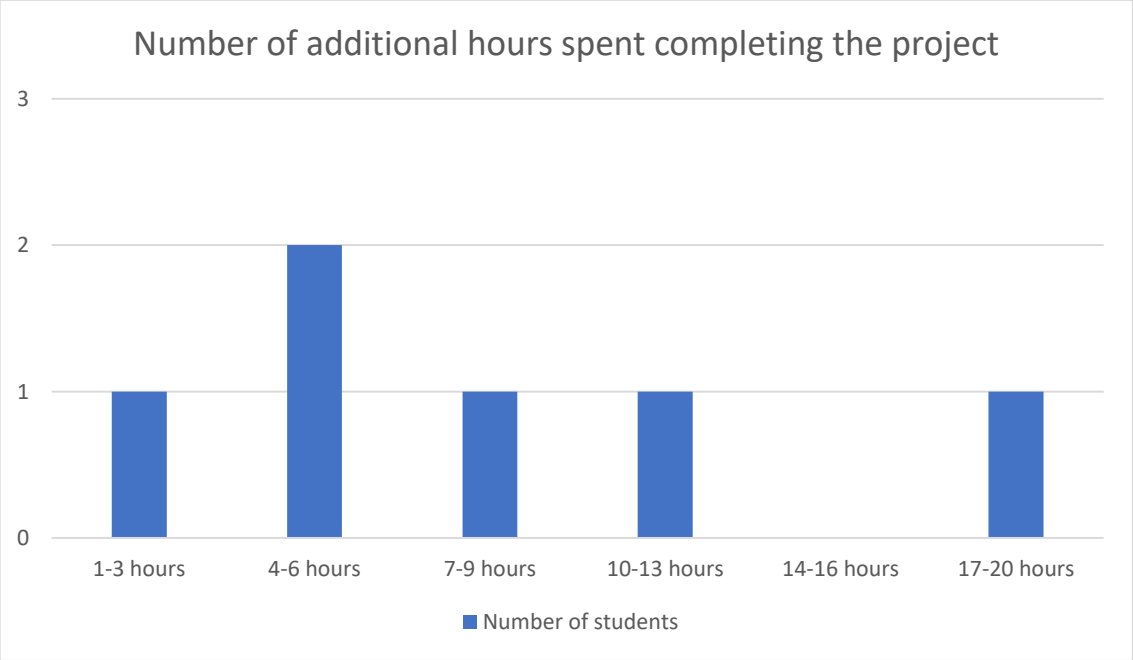


Figure B.27 Additional hours

The students' answers varied from 3 hours to 20 hours additional time. The lecturer believed that the varied answers related to the students' progress during class and their engagement with the online learning process. The students who had fallen behind on the workflow schedule had more work to catch up on.

Experiences of the online classroom (question 7 to question 12)

The lecturer wanted to understand the students' experience of the online classroom and the video tutorials (see Figure B.28).

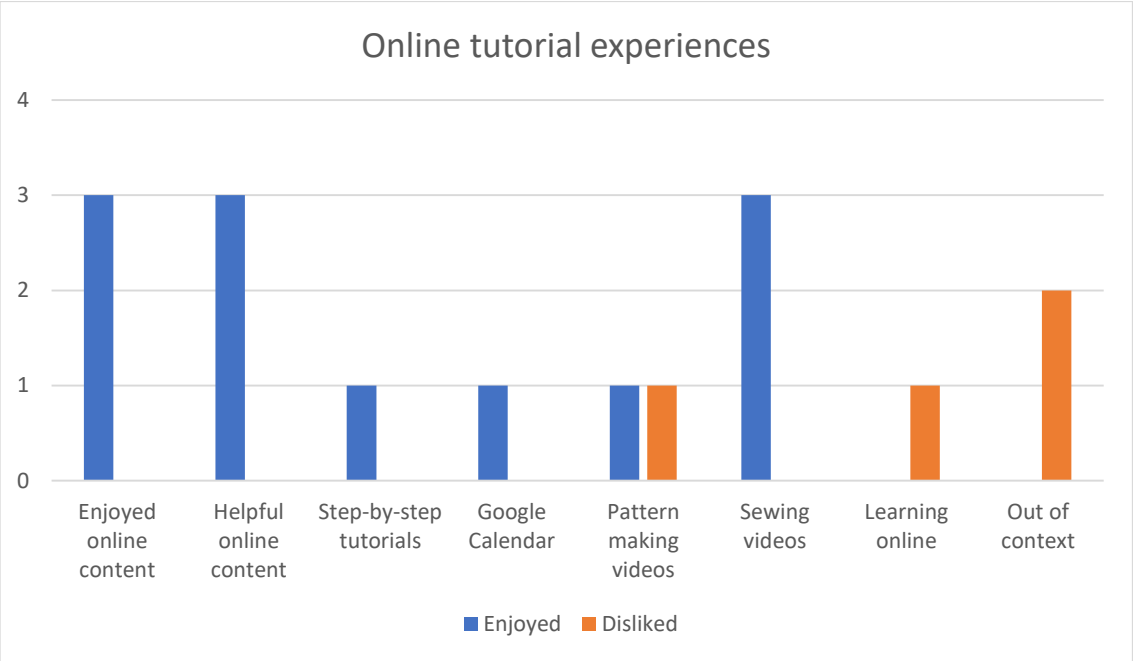


Figure B.28 Online tutorials

The students' response to the online content was mostly positive stating that it was enjoyable and helpful. Out of the seven students, three students found the content enjoyable. The students stated: "I enjoyed it because I like working online", "they were great", and "I enjoyed it, [it was] very informative." Another three students found the content helpful mentioning that they were: "very helpful", "really good and helpful", and "very helpful and I enjoyed watching [the videos] and learning from them". The one student who did not respond positively stated that he/she found the online tutorials: "difficult because I prefer face-to-face learning". The areas of the online tutorials that the students enjoyed and disliked varied. For one student, they enjoyed the online tutorials' step-by-step layout. Another student enjoyed having access to the Google Calendar stating: "it was all organised and easy to view". Another aspect that the students enjoyed and disliked were the pattern making videos. One student mentioned that he/she enjoyed seeing the pattern making videos while another student said that these videos were his/her least favourite part of the experience. This reiterates the idea that students have different learning styles as one student's most enjoyable feature was another student's least. For three students, the sewing videos were the most enjoyable part of the online tutorials mentioning the: "darts, the blind hem and waist bands", as the videos they enjoyed the most. For one student,

learning online, in their own time, was the least enjoyable part of the online tutorials. The context of the videos was an issue for two students as both of them felt that the videos were out of context. With one student clarifying his/her opinion by stating: “it was out of context to my skirt”. The content was contextualised around the purchased skirts, exposing them to a large amount of knowledge. The students were required to extract relevant information for themselves. This meant that the students were exposed to information which was irrelevant to them at the time but may have become relevant in the future. The ability to extract information for themselves aligns with the NQF level 6 descriptor which requires students to evaluate, select and apply appropriate methods, procedures or techniques; and to identify, analyse and problem solve in unfamiliar contexts (South Africa 2012: 9).

The students were asked if they had experienced any problems with the online content (see Figure B.29).

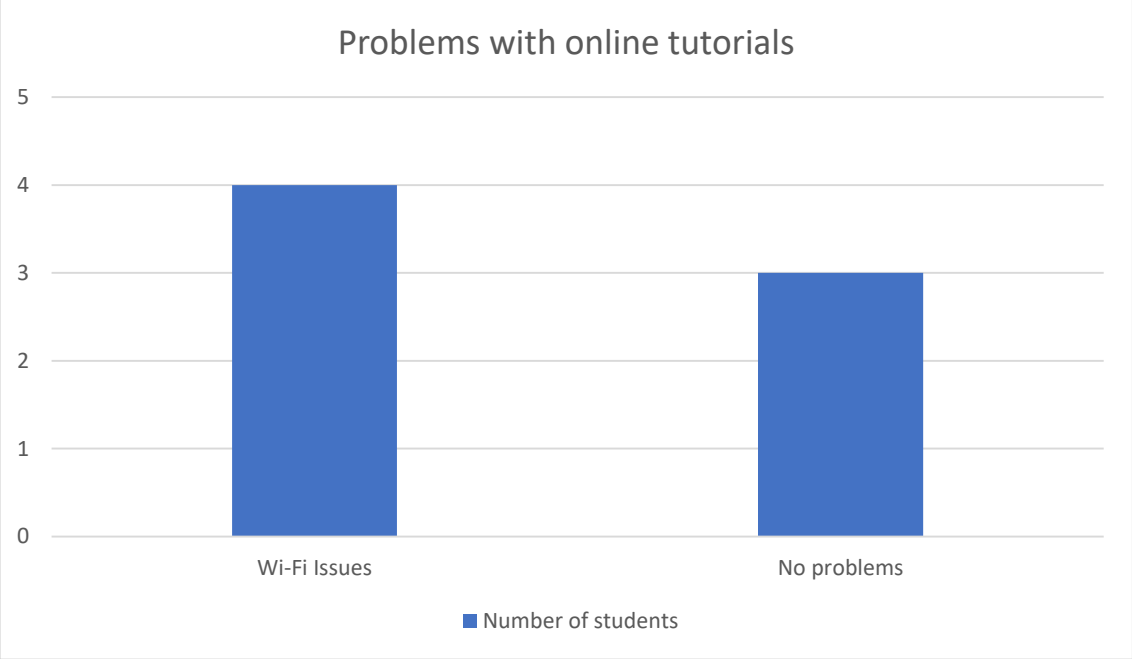


Figure B.29 Problems with the online tutorials

When asked if the students experienced any problems with the tutorials, four students noted that they had internet connectivity issues. Not having access to Wi-Fi at home was mentioned by two students, even though they had stated they did have access during the pre-questionnaire. Poor video quality due to slow

internet connection was experienced by two students. A student stated: “not having internet at home makes it difficult to watch the tutorials. It would be helpful if the videos were downloadable to watch them at home.” Another student noted that: “if you did not have a strong Wi-Fi network, it is difficult to view videos”. More than half the class had internet connectivity issues during the project. This was highly problematic as a lack of connection would have prevented the students accessing the content which would have impacted their engagement and preparedness for the lessons. During the project none of the students mentioned having these types of issues.

The students were asked if there were any tutorials which they did not understand or found boring (see Figure B.30).

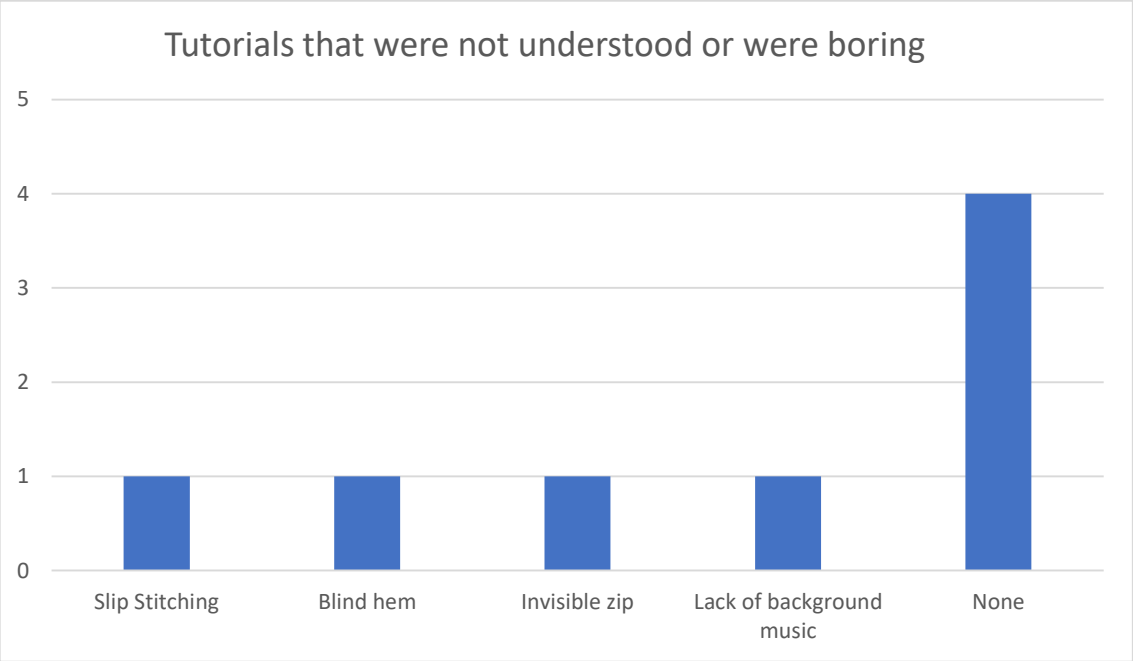


Figure B.30 Online tutorials

For four of the students there were no videos that they did not understand nor were there any that they found boring. One student however, struggled with the slip stitch video stating that he/she wished: “there was an invisible stitch video for adjustable straps”. The slip stitch video which was provided covered slip stitching two panels, the facing and the centre back seam together, and this technique could be applied to any panels that needed to be stitched together. For this student, however, they were looking for content which was specific for their

context which was not possible, as the students designed their skirts at the start of the project and the content had to be developed prior to the start of the project. The content had to be filmed in advance to allow time for editing and the development of the online classroom. For another student blind hems and invisible zips were difficult processes for him/her. This student noted that he/she found them: “tricky and not that informative on how to do”. These video tutorials would be relooked at to improve the demonstrations and the explanations. Lastly a student mentioned that they felt the videos lacked background music and as a result were boring to watch. Adding music into the background of the videos was not feasible due to time constraints as there were 83 videos which had intermittent voice overs and demonstrations. Cutting the videos to allow for music to play on and off would have taken an extensive amount of time. This would not have been a valuable use of time instead other sources were developed to assist the students’ knowledge.

Students’ opinion of the flipped classroom (question 13 and question 14)

When the students were asked about their experience of the flipped classroom, they had mixed reviews (Figure B.31).

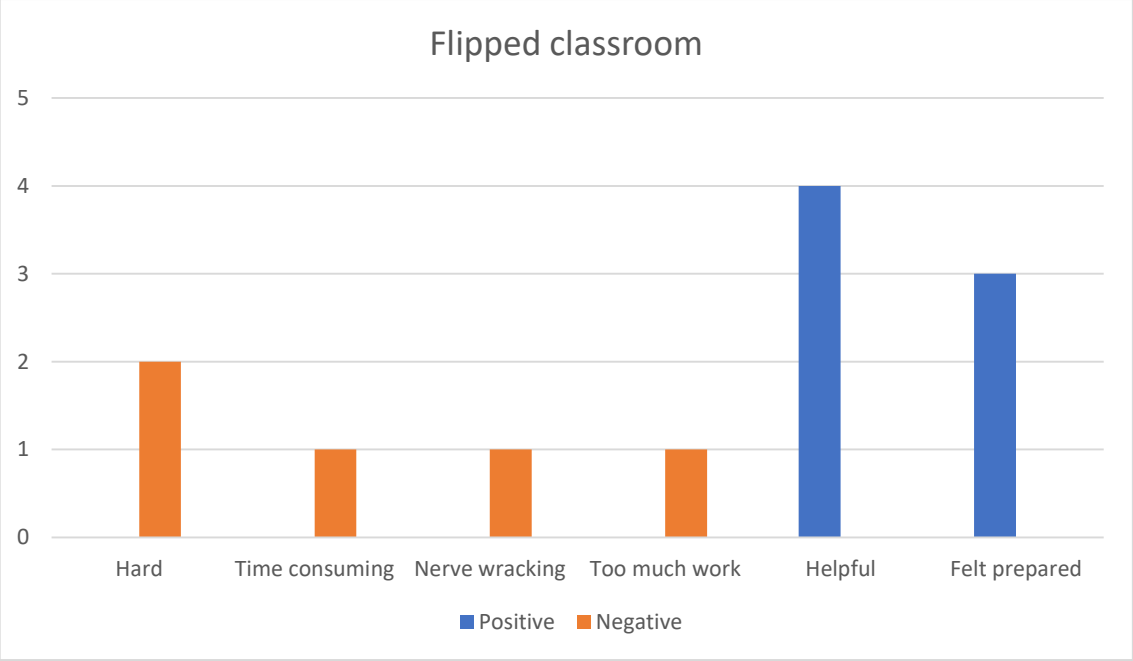


Figure B.31 Flipped classroom

Some of the students responded positively to the flipped classroom approach with 4 students noting that the approach was helpful. Of those students, three students found that the approach helped them to be prepared for class. A student stated: “it was really helpful because you came prepared for class”. Another student said: “it was very nice to be able to come to class with the knowledge as I get quite anxious about not doing this right the first time”. For one student, they found the preparation helpful mentioning that: “we could have sewn it quicker without many mistakes”. For three students the flipped classroom approach was difficult stating that they found it hard. One student said: “it was hard because if you did not have much time to prepare for a lesson it holds you back”. Another student found the approach time consuming mentioning: “it gave me more work to do”. Lastly, one student found: “it was nerve wrecking because I was not sure if it was correct or not”. This data aligns with Shekhar et al.'s (2015: 597) idea that students resist new teaching methods that lead to more work. Students feel anxiety about their ability to succeed in the new teaching environment or in terms of the lecturer’s expectations which the students are not prepared to meet (Shekhar et al. 2015: 597). Although the approach gave the students more work to do than previous projects, the amount was aligned to the recommended hours of work by SAQA. The homework requirements were also fostering the attributes of becoming degree candidates by requiring the students to manage their own learning and take responsibility for his or her own work (South Africa 2012: 9). The students had mentioned that they wanted more face-to-face hands on demonstrations. These were the areas they would have preferred learning face-to-face (see Figure B.32).

For two students, they would have preferred for all the demonstrations to occur during the face-to-face contact time. If all the demonstrations had been, the lesson would have reverted to the teacher-centred approach used in the previous projects. Both of these students did not enjoy the blended learning approach, stating that they did not learn better with videos, and finding the process difficult because they preferred face-to-face learning. For 1 of these students, however, he/she enjoyed having the video content on hand and he/she found the video content very helpful.

For this student it seems he/she may have wanted access to both hands on demonstrations as well as video content to refer to. For another student the sequence of assembly was something he/she wanted to have demonstrated during the face-to-face contact time.

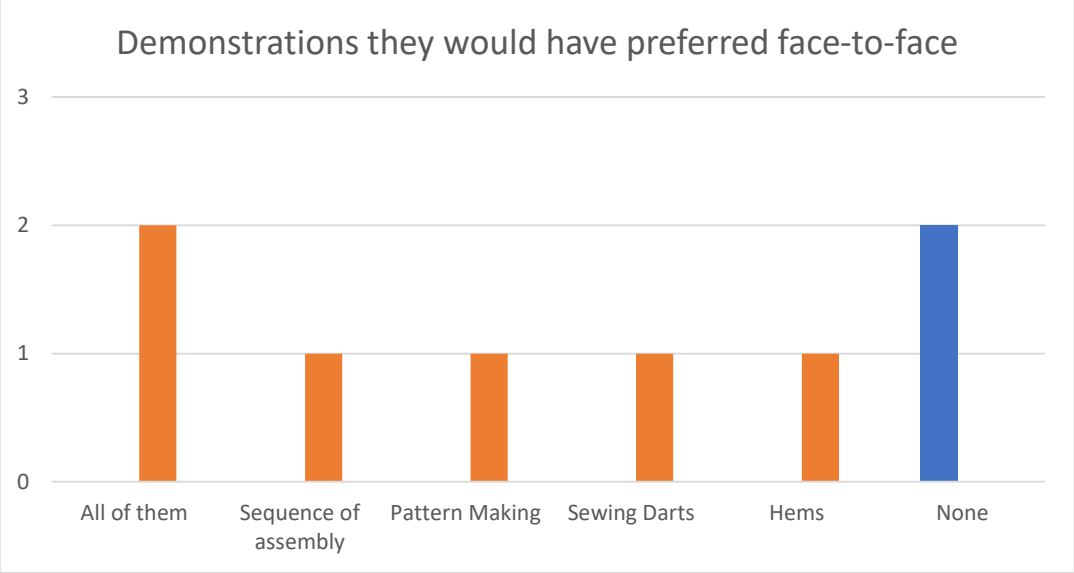


Figure B.32 Demonstrations

This is an area which could be added as a quick classroom exercise to provide the students feedback for each person's individual sequence. A student asked for the pattern making tutorials to be done during the face-to-face contact time. Majority of the processes that were presented in the videos were recaps of processes which were demonstrated during the face-to-face contact time for a previous project. The focus of this project was for students to recall their knowledge and to apply it to their designs. The intention of the class time was to facilitate the students as they apply that knowledge whereas using that time to re-teach those processes would not have been a productive way to use the class time which was already limited. The sewing processes which students wanted demonstrated during class were darts and hems.

The students' opinions (question 15 and question 16)

The lecturer was interested in understanding the students' opinions on the pace of the brief (see Figure B.33).

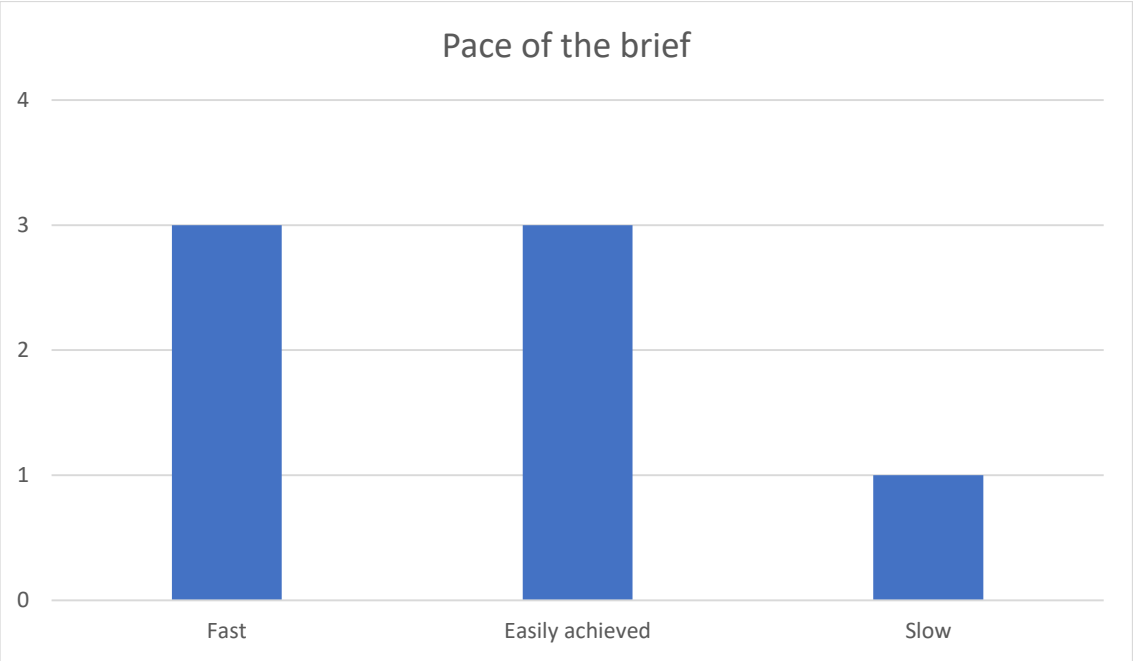


Figure B.33 Brief pace

The students rated the pace of the brief by describing it as fast paced, easily achieved or slow paced. There were three students who found the project too fast paced. One of the students stated it was: “fast paced for the amount of work required, would have been great if they had more allocated time to practise”. This student mentioned that he/she needed: “an additional hour a week for practising”. Another three students felt that the pace of the brief was easily achieved and well-paced out. One student noted that: “I think I was given [the] right amount of time to do things and [it] was enjoyable”. Only one student felt the project was slow paced. The contrast in opinions could have been linked to the students’ time management during this project.

When the students were given the opportunity to voice their opinions some mentioned that they wished they had more contact time to practise their skills. Another student mentioned that they would have liked access to the content at the beginning of the year to have more time to work through the content. The students’ requests are valid, although the institutional policies dictate the amount of lesson time and the access to content, the students’ suggestions are considered under the recommendation sections (Chapter 6).

These data were used to gain insight into the students' opinions so that the lecturer could align her improvements, for the following project, with their opinions. These data were also used to compare the data collected in the reflective exercise.

B.4.2 Reflective exercise question breakdown

The reflective data collection stage consisted of seventeen questions which were administered as a discussion exercise during class by the lecturer. (The data collected from the stage can be seen in Appendix D). This data were used to gain a deeper understanding of the students' experience and to compare and discuss the data collected during the interview stage.

Blended learning (question 1)

The reflective exercise was administered three weeks after the students had completed their assignments and they had returned from their term break. The lecturer wanted to give the students time to reflect on the process. The students were asked how they felt about blended learning looking back on their experience (see Figure B.34).

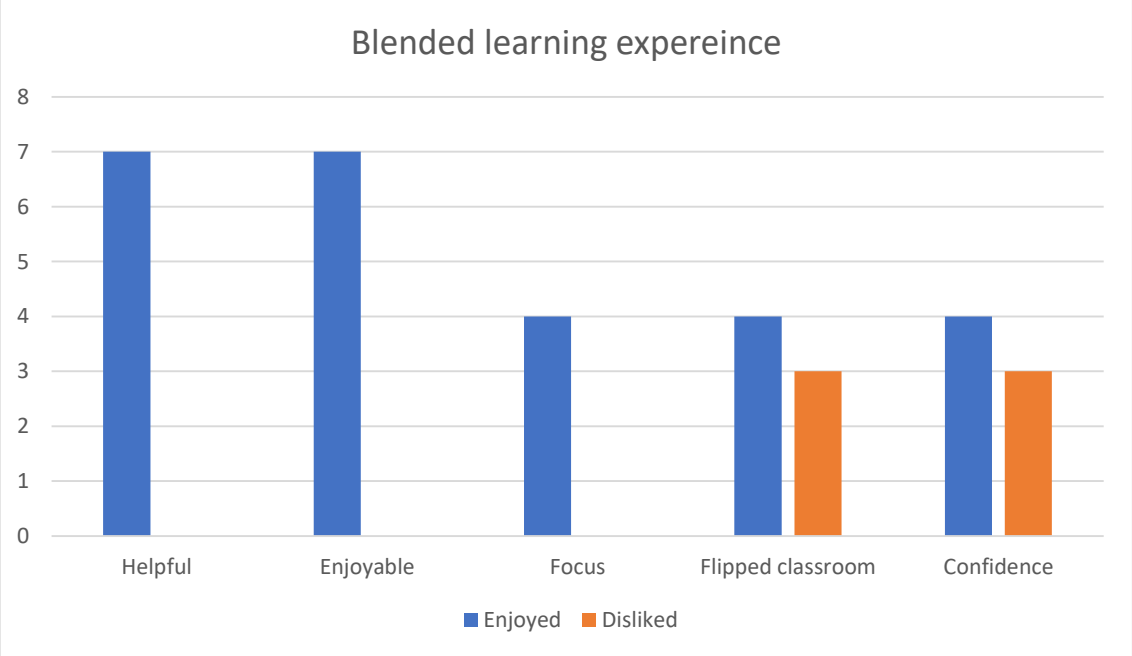


Figure B.34 Blended learning experiences

All the students found the approach helpful and enjoyable. Two students who had stated previously they did not enjoy blended learning, had changed their minds once they had time to reflect on the process. Of those students, 4 felt that the blended learning approach helped them focus during the project. None of the students had mentioned this aspect in the interview stage. The lecturer assumes that the areas which assisted the students focus could have been the workflow schedule on Google Calendar which directed the students in terms of their homework and contact time requirements. The layout of the content on the LMS also aligned with the workflow schedule, helping the students navigate this project.

Although the students had time to reflect on the project, their opinions of the flipped classroom approach had not changed. There were still only 4 students who enjoyed the approach. Those who enjoyed the process agreed that it gave them a better understanding and more confidence in their skillset, inside and outside the classroom. During the interview stage, the students stated that they felt the approach helped them to feel prepared for class. It is this preparation that could be attributed to their level of confidence because, the students became the holders of knowledge rather than the lecturer. This data aligned with the student-centred approach, in this case, confirming that the constructivist pedagogy worked for these students. The three students who disliked the flipped classroom approach felt that the preparation requirements were too much. This confirmed the interview data where three students stated that the flipped classroom approach was hard and too much work. These three students agreed that the approach made them feel anxious as they were unsure what they were doing was correct. During the interview stage only two students had mentioned feeling pressurised or defining their experience as nerve wrecking. With the time to reflect another student agreed with this feeling of anxiety. This confirmed the lecturer's speculations during the observation stage noting the students lacked confidence in their abilities. This also aligned with Shekhar *et al.* (2015: 597) who states students could feel anxious over their ability to succeed as well as meeting the lecturer's expectations when experiencing new teaching methods.

Google Classroom (question 2 and question 3)

The lecturer wanted to gain a deeper understanding of the students' feelings towards the layout and content on Google Classroom, in the hopes of understanding if the layout worked for them. The lecturer had broken the content down into categories (or themes as Google refers to it) to help improve the ease of navigation. All the students found the layout helpful stating that they felt that the categories were clear and easy to follow as it was set in chronological order.

Video content (question 4 to question 11)

The lecturer also wanted to know if there were elements of the video tutorials which could be improved upon (see Figure B.35).

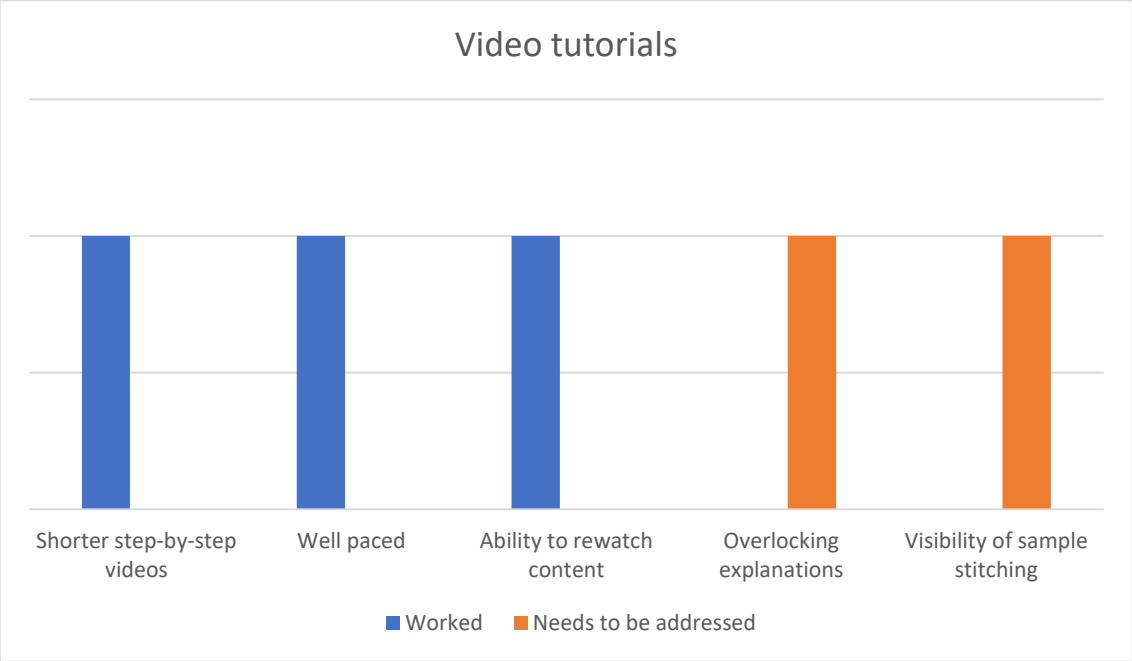


Figure B.35 Video tutorials

The lecturer had broken the processes down into steps and wanted to establish the students' preference between short videos or if they would have preferred one video showing them the process in full. All the students stated that they enjoyed seeing the content in smaller, more manageable steps, finding the content easier to navigate. All the students also noted that they enjoyed the pace of the videos and the ability to re-watch the content. This confirmed the data from the interview stage, where the students noted that they enjoyed being able to

refer back to the content when they needed to. An area which the students noted did not work well was the visibility of the stitches in the video tutorials. The students agreed that they would have preferred bright luminescent threads as they believed they would have been easier to see in the videos. Another aspect which the students felt did not work well was the explanation of the overlocking. The videos did not show the over locking process instead it was only mentioned that the seams were overlocked. The students found this unclear and needed a clearer note or explanation of which seams needed to be overlocked and why.

When asked if there were any content or online capabilities that they felt worked particularly well, the students did not have any comments for this question. The students did, however, bring up their issues with Wi-Fi. In the interview stage it was established that 4 out of 7 students had issues with internet access or connectivity.

The intention of the content was to provide the students with the core knowledge of skirts, allowing them to view all the content and to extract and apply the processes to their design. Only one student had watched all the video tutorials. The remaining 6 students stated that they only watched what was relevant to their design. When asked if they would take the time to watch all the content now that they had completed the brief, they stated that they would not and would only watch the content if they needed to use one of the processes to construct a garment. The students' lack of engagement with the content was concerning as the NQF level 6 descriptor states that students should demonstrate detailed knowledge on the main areas of the field of study and an understanding of different types of knowledge (South Africa 2012: 9).

Face-to-face classroom (question 12)

The lecturer wanted to understand the students' opinion of what they would have preferred demonstrated face-to-face (see Figure B.36).

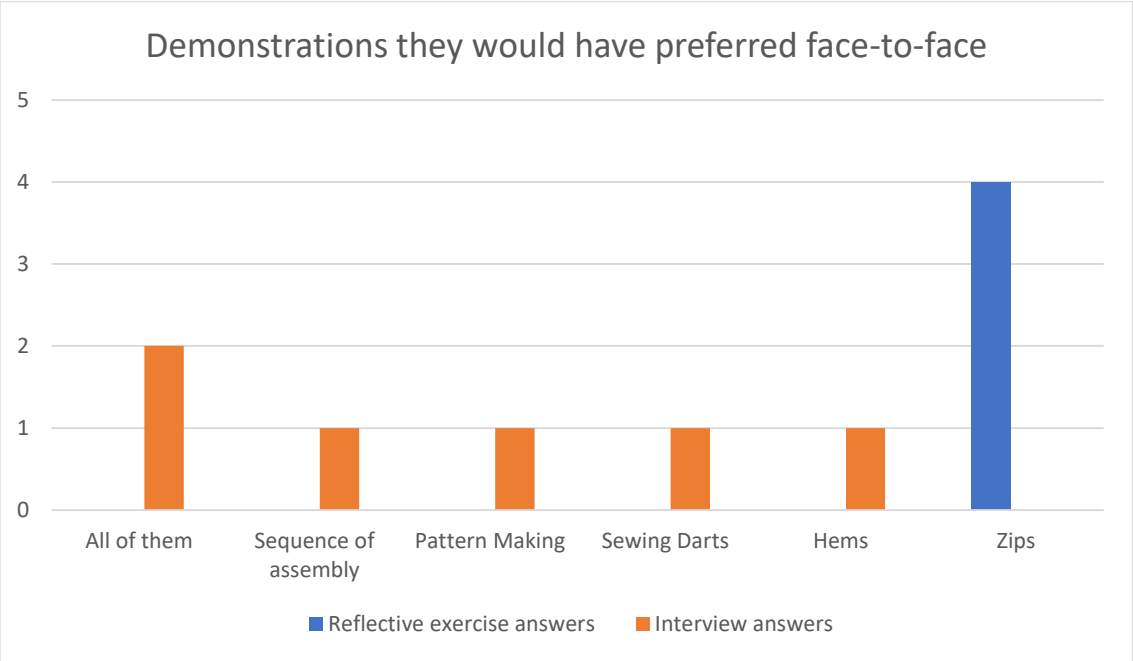


Figure B.36 Demonstrations

During the interview stage the students noted that they did not enjoy the lack of demonstrations during the face-to-face contact time. The students were seeking demonstrations of the order of assembly, pattern making, darts and hems. During the reflective exercise the students stated that they also would have liked hands on demonstrations of the zips. During the interview stage, one student stated that she would have preferred all the demonstrations done face-to-face but she also stated that she found the video content helpful. The lecturer wanted to know if the students were given the option between only having videos or face-to-face demonstrations, which they would choose. All the students agreed that they would not choose one method over the other as they wanted both. The students enjoyed having access to the video content and being able to refer to it as they needed it. The students felt that having an additional hands on demonstration of a process would assist them in understanding the online processes more easily and it would give them the confidence to approach the process on their own for homework.

Blended learning process (question 13 to 15)

Although the lecturer had confirmed the students' level of enjoyment of the blended learning approach, she wanted to understand if the approach appealed

to them. The students had mixed emotions towards the approach. Some of the students really enjoyed having videos to refer to but others found the online content difficult to understand because they had not seen it in real life as hands-on demonstrations in the face-to-face contact time.

The lecturer wanted to confirm her speculations she had during the observation stage. She was concerned that the students did not understand the value of the sampling process as they were resisting making samples and trying out the processes before applying it to their garments. When asked what the value of the sampling process was, all the students said they found it a necessary step as it allowed them to practise without ruining their garment fabric. They felt that preparation was key to speeding up their workflow.

Collaboration (question 16 and question 17)

The lecturer was concerned that the students were not collaborating. She had set up a collaboration question on the Google Classroom which only one student filled in. When the students were asked if they collaborated during the process, all of them stated that they had only done a limited amount. A student mentioned that if a process was easy enough, she did not see a need to collaborate with her classmates. Some of the students noted that they felt isolated during their self-study time. This confirmed the idea that online learning can leave students feeling isolated and disinterested due to a lack of interaction (Yick *et al.* 2018: 2)

APPENDIX C: DATA ANALYSIS FOR PROJECT TWO

C.1 Introduction

This section focuses on project two of the study. The research design of this study followed a sequential exploratory approach which meant that the initial data collection of project one offered a baseline for the blended learning design. This section uses the data to further explore the topic. The projects data collection has been divided into two chapters to allow for a clearer explanation of how the information gathered in the first project fed into and improved the blended learning design for the second project.

In the previous section the approach and data collection of project one was discussed. This section will explore the development of a blended learning approach which considers the findings of the first project to improve the 'blend' of the blended learning approach. Project two took place over 10 sessions and the project brief required each student to design a *shirt*, make the pattern and construct their garment. This section serves to explore the set-up for the project, exploring the students' baseline knowledge and previous experiences with blended learning and the design of the blended learning environment using the BLC model. Once the project begun, the researcher assessed the blended learning environment by observing the students and documenting her findings in the observation schedule. This gave insight into the researcher's experiences. To assess the students' experiences, the researcher reviewed their interviews and the reflective exercise to understand their perspective of the blend of the blended learning delivery.

C.2 Stage 1 data analysis and results

Prior to the start of project two, the quantitative stage's online questionnaire was administered in the same manner as project one. All students were given the opportunity to voluntarily participate in the second project of this study and again seven students volunteered to take part in this project. The data were categorised as in project one, using charts and tables, allowing for a comparison and discussion of the findings (for the questionnaire answers see Appendix D).

The online questionnaire gave further insight into the students' baseline knowledge and their level of preparedness before entering the shirt brief. The questionnaire had three sections with questions pertaining to their baseline knowledge, pattern making and garment construction knowledge.

Questionnaire question breakdown

The questionnaire comprised 20 questions consisting of both closed and open-ended questions. The questionnaire's three sections were designed to establish:

- their prior involvement with the online classroom, their online capabilities and their access to an internet connection outside of the institution,
- gaps in the students' prior knowledge and skillsets gained during their previous garment construction brief,
- gaps in the students' pattern making knowledge and skillsets based on the knowledge they had gained in the previous pattern making brief.

Baseline knowledge

On completion of this section the researcher had gained an understanding of the students' online capabilities through their access to Wi-Fi and their prior experiences with the LMS and YouTube.

Online access (question 1 and question 2)

All seven students stated that they had access to Wi-Fi on and off campus. Although all the students provided the same answer in the previous project's questionnaire, the interviews and reflective exercise revealed that four of the students' internet access was not consistently available. For some students their Wi-Fi connections stopped working during the four-week project and for others their connection was too weak to view the online content. To combat this, the researcher provided the students with access to a private YouTube playlist, which allowed the students to download the videos in a Wi-Fi zone and view them offline. Giving students access to a playlist at the beginning of the project had been suggested by a student during the reflective exercise of project one. This showed that students bring valuable knowledge with them in pursuit of their own

learning. The lecturer, the current students and future students would benefit from the student sharing this knowledge. Allowing students to download the videos on campus, where they had access to Wi-Fi, helped mitigate any potential issues with internet connectivity during this project.

Online platforms- Google Classroom (question 3 to question 7)

The researcher needed to understand the students' engagement and experience with the LMS (see Figure C.1).

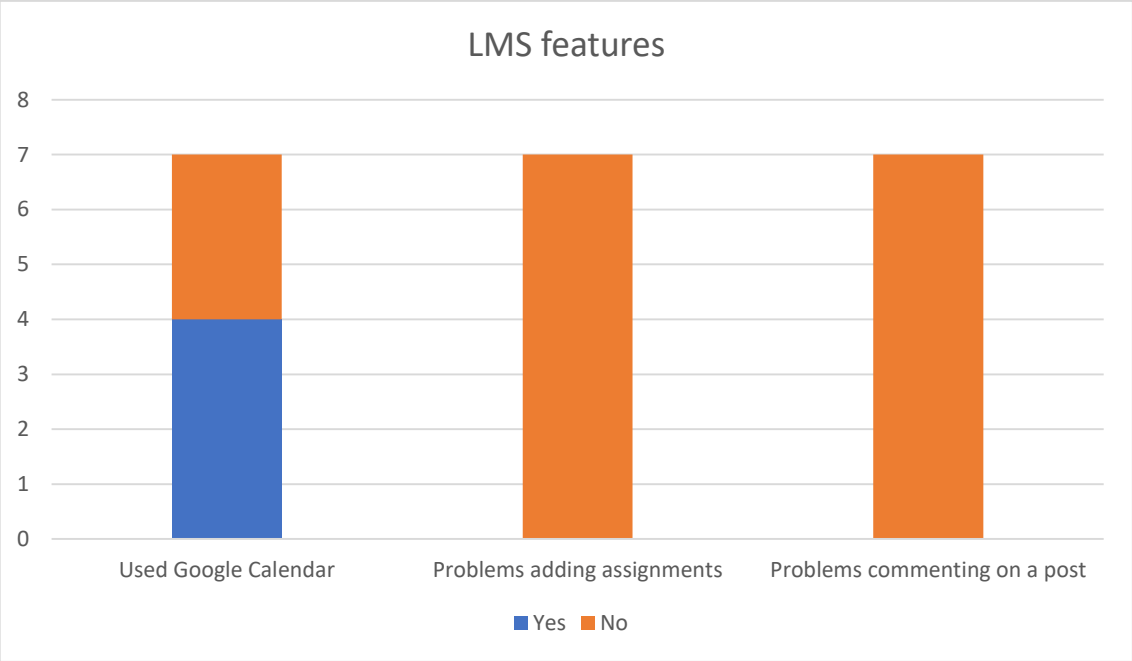


Figure C.1 LMS features

The students were asked if they used the Google Calendar to guide them through project one. Only four out of seven students said they had used the calendar. Those students who did not use Google Calendar would not have known what was expected of them for each lesson, affecting their preparedness for each lesson. The workflow schedule on Google Calendar stipulated the lesson and homework objectives, telling the students what processes needed to be learnt and practised at home before coming to class where they would apply that knowledge. The workflow schedule was there to assist the students in managing their time as the timeframe for project one was very limited. This data confirmed the students' lack of preparedness which was observed during project one. In order to assist the students in managing their time better for project two, it was

essential for the students to understand the importance and value of the workflow schedule, as well as offering the students an alternative way to access the workflow schedule by introducing them to the Google Calendar cell phone application .

The students were also asked if they had any issues uploading an assignment or commenting on a post on the LMS, and all seven students stated they had not experienced any issues.

Online platforms- YouTube (question 8 to question 15)

In order to assess the students' preparedness for this project, the researcher needed to understand their experiences of filming and uploading the reflection videos in the previous project (see Figure C.2).

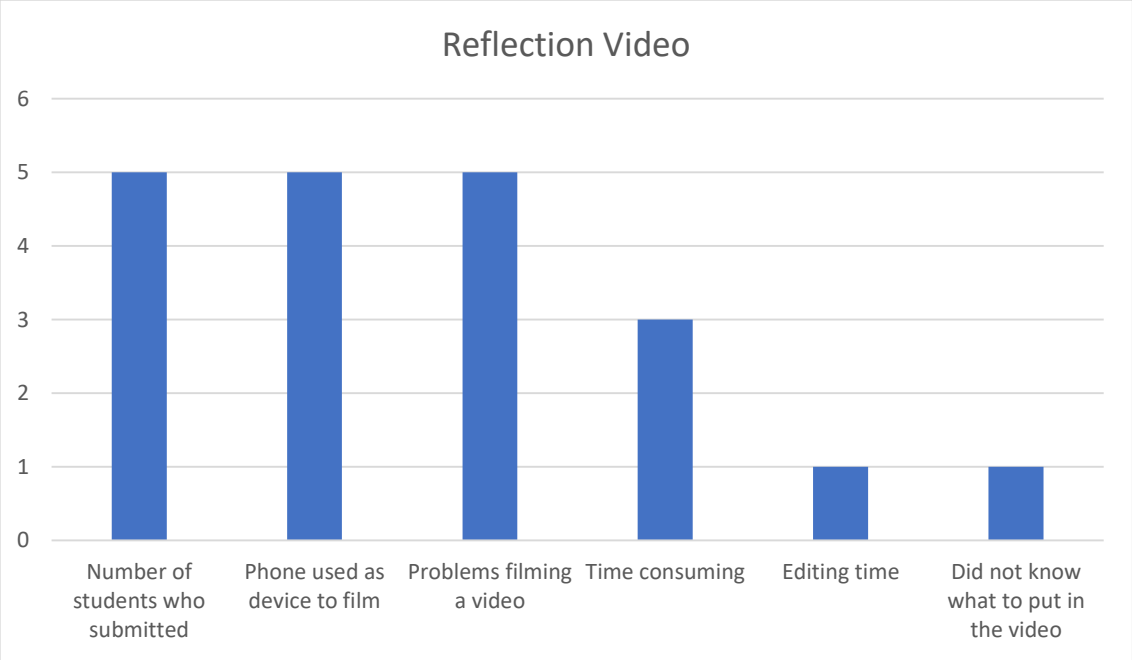


Figure C.2 Reflection videos

Only 5 students submitted reflection videos in the previous project. The data represented in the chart was based on the answers of those 5 students. The students were asked what device they had used to film their videos and all 5 students stated that they used their phones. All the students said they had experienced issues while filming their videos. For three students they found that the process involved in making a video was time consuming. A student

mentioned: “[it] took too much time”, while another student said: “I kept having to refilm myself”, and the third student noted: “time pressures”. The amount of time that it took to edit the videos was also a problem students faced. For one student, not knowing what to put in the video was an issue. This could have been attributed to the students’ lack of engagement with Google Calendar, as the workflow schedule stipulated what should have been explained in their videos.

In project one, only three students had uploaded their videos onto the LMS before the deadline. As such the researcher wanted to know if those students or the two students who did not submit on time had any problems uploading their videos to the LMS. All of the students said they did not have any problems uploading their videos onto YouTube or uploading their YouTube links onto the LMS.

This data gave insight into considerations the researcher needed to make while developing the blended learning delivery approach. The researcher used her judgement and her lecturing experience to determine how she would address their comments:

- the students needed to be encouraged to use Google Calendar to assist them in their time management for the brief. The students were introduced to the Google Calendar cell phone application;
- assist the students with their time management by asking them to film a one-minute reflection video twice a week. When the project came to an end the students had a series of short videos which needed to be edited together; and
- provided the students with suggestions of editing software to assist them in putting together their videos.

Garment construction and pattern making

The garment construction and pattern making sections of the questionnaire gave insight into the gaps in the students’ knowledge. Project one was the first instance of blended learning and as such it was important to know what knowledge the students felt they had not yet mastered. In garment construction and pattern making the content is developmental and builds on previous projects. It is important for students to master those skills before moving onto another

project. This developmental approach aligns with constructivist pedagogies where it is believed that learning is done through building blocks (Heinze 2008: 20). These sections gave insight into areas which needed to be addressed in the content of the following project to assist the students in having a better understanding and helping them master these processes.

Garment construction (question 16 and question 17)

The open-ended questions allowed the researcher to understand the gaps in the students' prior knowledge and skillsets gained during project one (see Figure C.3).

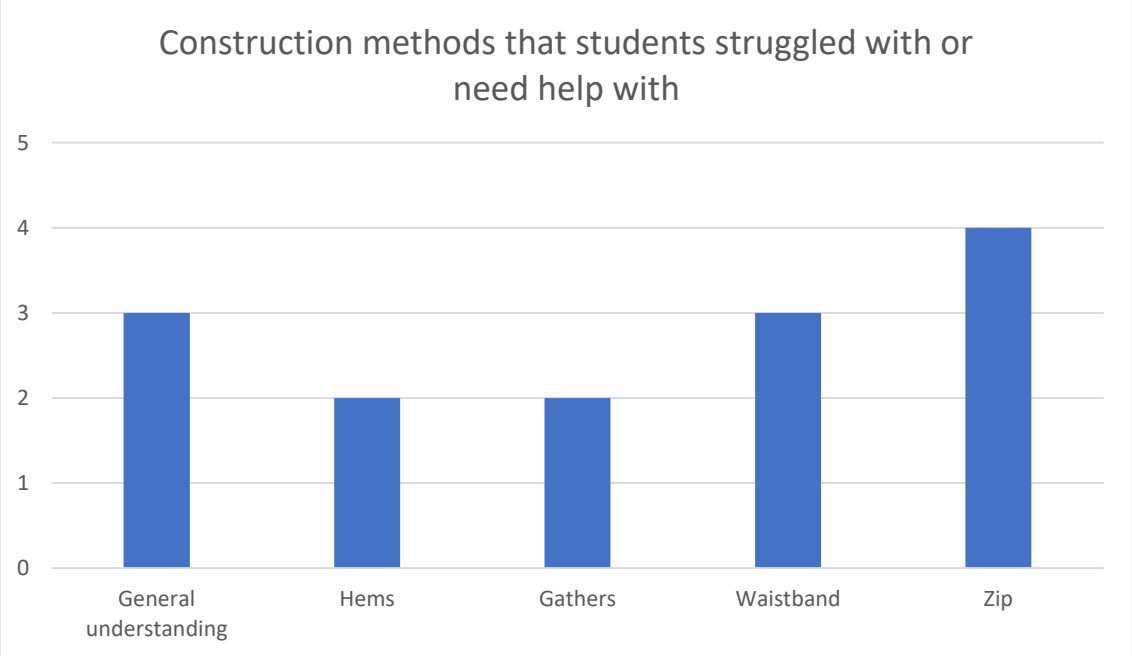


Figure C.3 Construction methods

The researcher wanted to know if there were any construction methods the students struggled with in their previous brief. For three students, a general lack of understanding of garment construction was something they had struggled with. A student felt his/her: "general understanding [was] minimal which [made] it harder". Another student was looking for guidance with: "general construction direction and tips". The researcher had found that in the past, many students struggled initially with their general understanding of construction processes. However, through practise and experience the students built upon their knowledge and gained more confidence in their abilities. For two students, the

processes involved in hemming a garment was an area which they struggled with. In this project, all the students would again sample hems before applying them to their shirts. This process would assist those students who struggled with this process. The gathering process was another construction method which two students struggled with. In project one, a gathering video was not included in the content as a video of the process had previously been provided to the students. In this project a recap video was added to assist those students in refining this skillset. The process of constructing and inserting a waistband was another area which three students noted. Although this project did not include waistbands, the process involved in constructing and inserting a waistband was the same process as making and inserting a collar. During the sampling stage the students would practise this process again allowing them to enhance their understanding of the process. The final construction processes the students struggled with were zips as four students had mentioned. Although this project did not involve the insertion of any zips, the students would revisit these processes in their next project after the shirt brief.

It should be noted, however, that the students stated during the reflection discussion for project one that they had only watched the videos and sampled processes which were relevant to their designs. This showed that the students did not fully engage in the sampling process. By not experiencing or practising the full range of processes associated with a construction method (for example zips), they had not gained the confidence they should have. This showed the researcher that she needed to encourage the students to engage in self-regulated learning during their free time and the holidays to recap or learn those processes. However, this is difficult, as research points out that students are generally unwilling to do work that is not allocated a tangible mark (Snider 2004: 4)

Pattern making (question 18 to question 20)

The open-ended questions gave insight into the gaps in the students' pattern making knowledge (see Figure C.4).

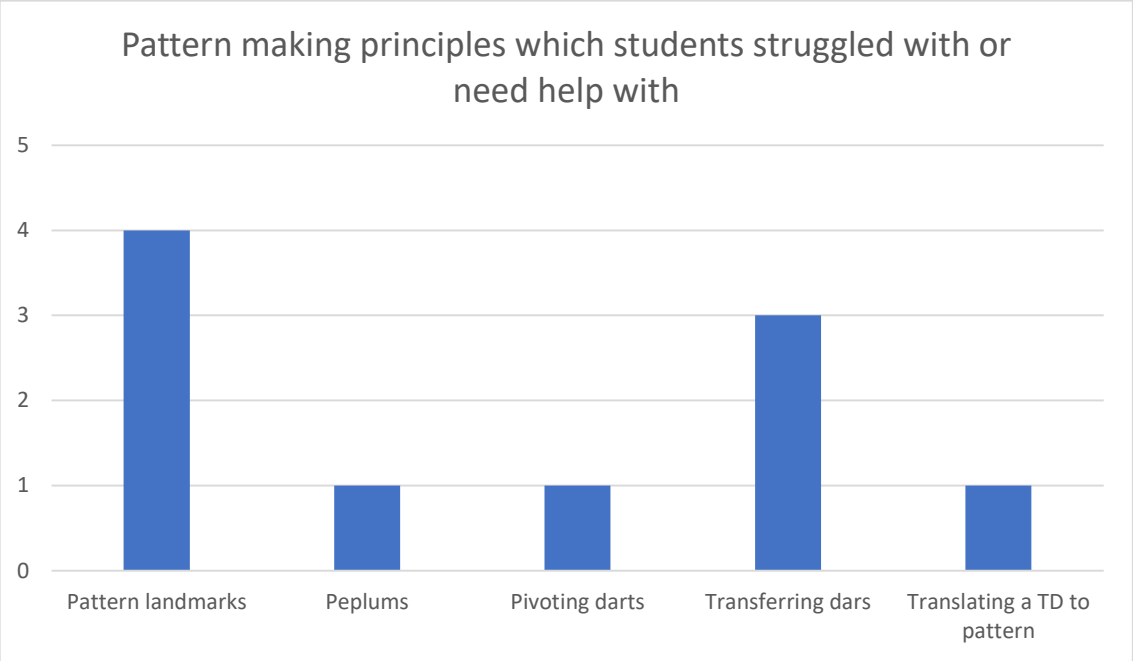


Figure C.4 Pattern making principles

The researcher wanted to know if there were any pattern making principles that the students did not understand or struggled with. Pattern landmarks and pattern information was an area which four students mentioned. A student noted that they wanted to revise: "the finer details", while another said: "drill holes", and one student stated: "just the small details and notches". In the past, students only started to understand the importance of pattern landmarks or information when they did not have it on their patterns, and it made constructing the garment difficult. Only once the students understood the function of notches or drill holes and saw how they guided the construction process, were they able to understand where to put them on a pattern. One student noted that they struggled with peplums, which was a process they had been taught in the beginning of the year. A recap of this process was provided as a video demonstrating the pattern making process associated with peplums. The process of dart manipulation was an area which 4 students had struggled with. For one student it was the process of pivoting darts which he/she noted. For three other students it was the process of transferring darts which they had struggled with. This is a difficult process for

students to grasp. During the pattern making videos for the shirts this process was recapped to assist the students' understanding. The final area which one student needed assistance with was the process of translating a technical drawing into a pattern. The pattern making elements which were demonstrated used a technical drawing to guide the pattern making decisions.

The data indicated the following areas of content needed to be recapped:

- the process of moving darts by either pivoting or slashing and closing;
- the importance of drill holes and notches and their function;
- the pattern making process of peplums; and
- translating a technical drawing into a pattern.

The data collected from the questionnaire gave clarity to the researcher by addressing the needs of the students. This information was used to develop and adjust the blended learning approach.

C.3 Stage 2 data analysis and results

The qualitative stage gave insight into the attempt at blended learning and the researcher's observations for project two. The blended learning approach was again designed using the BLC model by Huang, Ma and Zhang (2008: 6) found in Chapter 3. During the development of the blended learning approach the researcher considered the data collected from project one and the data collected from the quantitative stage of this project to adjust and develop a new blend. The researcher's observations were documented in the same way as project one in a reflective journal on Google Forms (see Appendix D for the reflective journal extract). The data gave insight into the strengths and areas for improvement based on this blended learning approach.

C.3.1 Implementation of blended learning

Project two's blended learning delivery was also developed using the BLC model. The data collected from project one was used to guide and adapt the delivery by maintaining the aspects which were successful and making adjustments to align with the students' and lecturer's experiences.

C.3.1.1 Pre-Analysis

The pre-analysis stage focused on the characteristics of the learners, the knowledge taxonomy and the blended learning environment itself.

i) Analysis of learners' characteristics

Project one revealed that all the students enjoyed the blended learning approach; however, they did not enjoy the previous project's delivery which included video content only. The students wanted a combination of face-to-face demonstrations as well as online video demonstrations.

ii) Analysis of learning objects

To gain insight into what should have been taught for this project, the knowledge taxonomy had to be considered. The project brief followed the same three steps as project one, where the students had to design a garment, make the pattern and construct the garment. However, for this project the students had to design a shirt (an in-depth explanation is offered in Chapter 5 p104).

iii) Analysis of the blended learning environment

Google Classroom continued to be used as the LMS for this project as it worked well for the previous project. During this project, however, the students had access to downloadable learning material or links to YouTube video content. To address the students' need for access to online content outside of Wi-Fi zones, a YouTube playlist was added. A YouTube playlist topic was created on the LMS which gave students access to the playlists which showed all the videos created for this project. The playlists were structured in the same order as the LMS topics.

C.3.1.2 Design of activities and resources

This stage of the BLC model involved the development of content and the approaches for this project. The design of activities and resources stage consisted of three subcomponents: the design of the blended learning approach, the design and development of the resources, and the activity design. This stage

followed the layout set out in project one with a few adaptations based on the findings of project one and the project requirements. The subcomponents will be discussed separately.

a) Overall design of blended learning

The overall design of the blended learning approach established the learning activities, the blended learning delivery strategy and the blended learning support.

Learning unit (activity)

The learning activities were determined by the brief requirements. The students had to design a shirt which was translated into a technical drawing on a specification sheet. This design had to be interpreted into a functional pattern, which could be constructed into a garment. The students had to document the processes they followed in a reflection video.

Blended learning delivery strategy

The blended learning delivery strategy established how the blended learning would be approached. The researcher aligned her decisions with the research and the findings of the previous project. The findings of the previous project showed that the students sought a combination of online video demonstrations and live demonstrations during the face-to-face contact time. The video content which the researcher developed herself provided the students with demonstrations of the pattern making and garment construction knowledge necessary to complete their garments. The live demonstrations were used as an introduction to a construction process prior to the students engaging with the online content. The demonstrations during the lesson provided the students with a basic understanding and offered an opportunity for questions and clarity.

The students used the content to construct their own knowledge in a flipped classroom approach. The findings from the previous project showed that the students did not enjoy the flipped classroom, however, the lecturer noted that the students' knowledge and standard of work improved because of the approach.

The students were able to gain knowledge prior to the lesson and apply their skillset during the face-to-face contact time.

b) Design and development of resources

The design and development of resources included: selecting the content, developing the cases, and the presentation of the design and resources.

Selecting contents

Based on the project brief there were five categories of resources or content that needed to be produced for project two (an in-depth explanation was provided in Chapter 5 p109).

Developing cases

The *development of cases* considered how the content would be contextualized for the students. Previously the content was contextualised around the purchased skirts whereas for this project the content was simplified and presented as individual pieces (for a detailed explanation refer to Chapter 5 p110).

Presenting design and development

The pattern making and garment construction processes were presented using videos covering the five parts of the content that needed to be delivered. To assist the students understanding, the researcher provided live demonstrations of some of the processes before the students had to watch the online content. Due to time constraints all the processes could not be demonstrated.

- Shirts: explanations of the design elements were presented using garments during the face-to-face contact time.
- Technical drawings: of the design elements, technical aspects and annotations associated with those individual design elements were presented as downloadable documents on the LMS.
- Pattern making: video demonstrations of the pattern development processes of the design elements. These demonstrations also recapped

the skills they had already learnt.

- Garment construction: video demonstration of the construction processes associated with those design elements, which covered stitching, pressing, fusible interlinings and finishing. Introductory hands on demonstrations of some of the processes were conducted during the face-to-face contact time.
- Professional finishing: recapped the professional finishing techniques and the final presentation of their shirts.

c) Design of unit (activity)

The design of the unit or activity included: the activity based blended learning model; a definition of the performances; the activity objectives; activity organisation; and the assessment of the unit.

Activity based blended learning model

The activity based blended learning model determined the order in which activities would occur, as well as how the students would engage with the content during the project. The model had four stages: leading in, planning, acting and reviewing. An explanation of how each stage was implemented in this project is offered in Chapter 5 p116.

Definition of performances

The definition of the performances aimed to organise the processes and content developed, by determining when the processes should be delivered (a full breakdown is offered in Chapter 5 p112).

Activity objectives

The activity objectives provided guidelines for the goal of each lesson and homework period (an example of the project objectives can be found in Chapter 5 p114).

Activity organisation

The activity organisation focused on reviewing the objectives of the previous step. The researcher observed the students and used the observation schedule to assess each lesson from her perspective. The observations were administered in the same way as project one, using Google Forms.

Assessment of the unit

The assessment of the unit aimed to assess the level of success of the blended learning approach. The assessment allowed the researcher to review the students' level of success by reviewing the reflection videos and the professionalism of the final garments. The success of the blended learning approach was evaluated using the findings collected from the reflective journal during the qualitative stage. The reflective stage gauged the students' experiences through interviews and a reflective exercise. This stage is expanded upon in the following sections.

C.3.2 Observation breakdown

The observation schedule comprised 14 open-ended questions which were completed after each lesson.

Response to the online content (question 1)

The students' engagement with the online content was observed after each lesson (see Figure C.5).

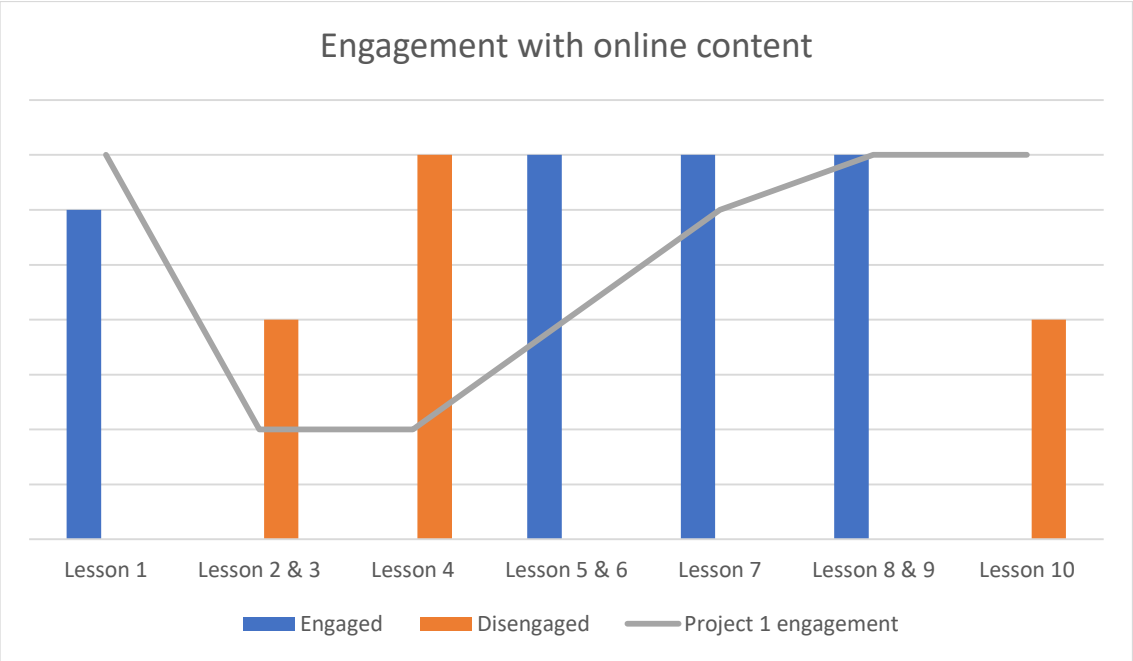


Figure C.5 Students' engagement with the online content

During the briefing lesson the students' engagement with the online content was positive. All the students were prepared for the lesson which showed they had engaged with the online design elements content. This initial involvement aligned with the data collected from project one as, in both cases, the students initial response was positive, however, in the following lesson their involvement shifted. During lessons 2 and 3, four of the students started to disengage with the online content while two of the students had somewhat engaged with the content. Although the students had access to the information necessary to complete the task, they resisted referring to it. As in project one, the students wanted to be guided step-by-step through the process. The researcher urged the students to refer to the online content to encourage them to seek the information for themselves and reminded them of the blended learning process. The students started engaging with the content and using the videos to guide them through the pattern making processes. For lesson 4, all of the students started to engage with the blended learning approach. Unfortunately, the students had prepared for the wrong lesson as they did not engaged with the Google Calendar. During the briefing lesson, all the students were shown how to add Google Calendar to their cell phones to provide them with easy access to the workflow schedule. It seemed as though none of the students had done so

because they had relied on a fellow classmate to tell them what was required of them rather than viewing the Google Calendar for themselves. The student had mistakenly taken a photo of lesson 4 which stipulated the homework in preparation for lesson 5 and 6, instead of lesson 2 and 3 which stipulated the homework for lesson 4. As seen in Figure C.6 the Google Calendar workflow schedule below:

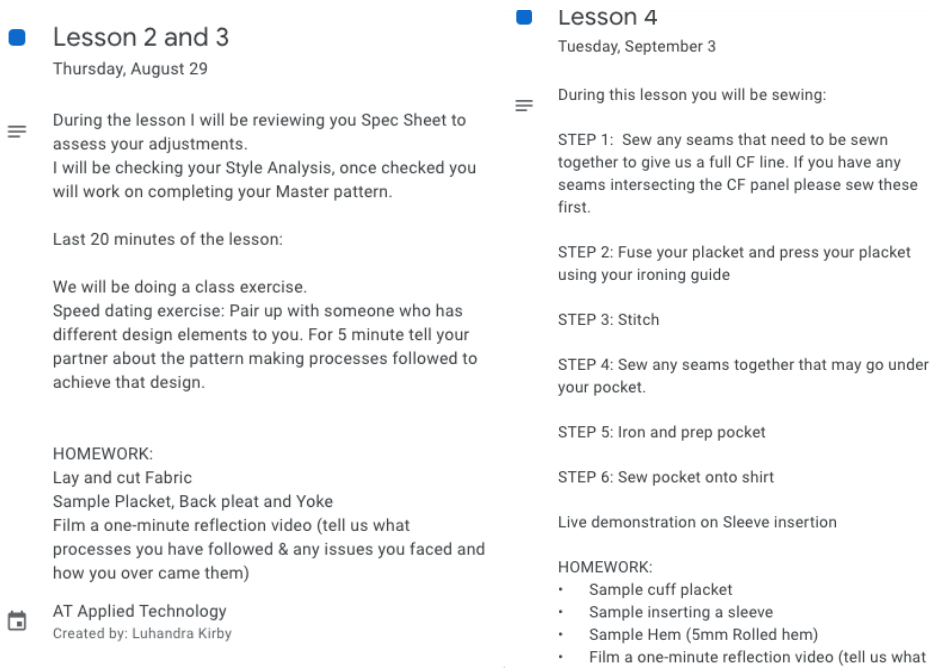


Figure C.6 Google Calendar workflow schedule

From lesson 4 to 9, all the students started to engage in the blended learning process as they were using the online content to gain knowledge prior to the lesson. This level of engagement occurred sooner in this project than in project one. During the previous project, all the students only engaged with the online content during lessons 8 to 10. During this project, in the final lesson, however, four of the students did not engage with the online content and came unprepared to the lesson as they had not completed their reflection videos. The three students who had completed their reflection videos had used the workflow schedule on Google Classroom to view the requirements for their videos. Of those three students, however, only one student had engaged with the online content and recapped the process of uploading a video on to the LMS.

The effectiveness of the flipped classroom (question 2 to 5)

As with project one, the assessment offered on the effectiveness of the flipped classroom was based on the students who attended each lesson (see Figure C.7).

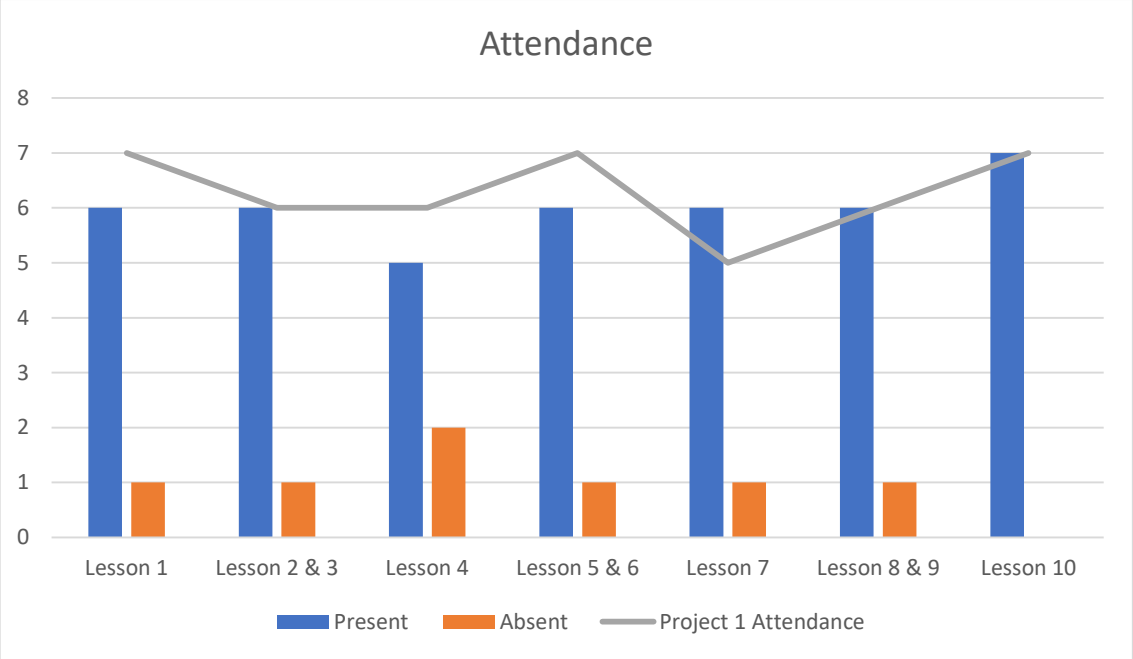


Figure C.7 Students' attendance

During each lesson, except for the last lesson, there were students who did not attend class. As with project one, there was on average one student absent during each lesson.

The effectiveness of the flipped classroom was assessed by observing the students' preparedness for the lesson (see Figure C.8). It had been determined that the students had fallen behind in their preparation from lesson 4 and although they were engaging with the online content they were not meeting the lesson objectives.

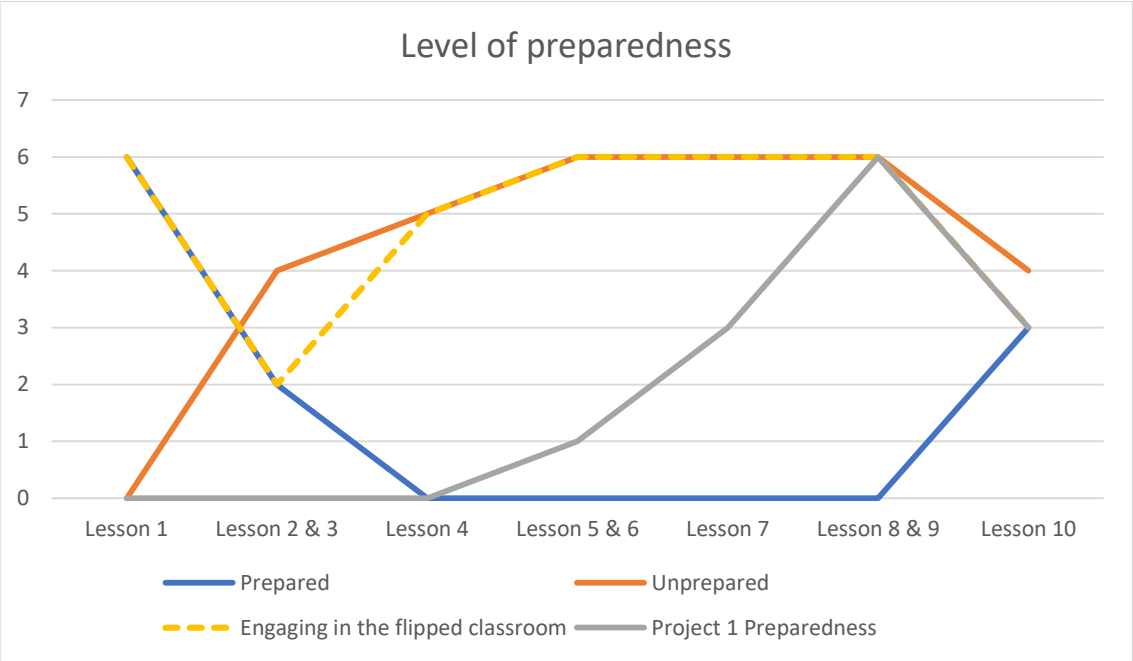


Figure C.8 Students' level of preparedness

During the initial lesson the students were prepared as they had designed their shirts before class. All 6 students had used the online content to guide them in designing their shirts. In lesson 2 and 3, only two students were prepared for the lesson. The two students had used the online content to create a style analysis pattern for their shirts, while four of the students had not made their patterns. The lack of preparedness for the lesson meant that the lesson objectives could not be met, which impacted the use of the contact time. The face-to-face live demonstration which was scheduled for the lesson could not be included in the lesson because the students were still fulfilling their homework requirements. The 4 unprepared students asked pattern making questions which was covered by the online content. When the students were asked if they had viewed the content, they said they had not. The students were encouraged to view the online content and only then were they assisted in applying their knowledge. The two students who came prepared for the lesson were able to meet the lesson objectives and received feedback on their patterns before creating their master patterns in class. Even though only two students engaged with the flipped classroom, there was an improvement from the first project where none of the students had engaged with the flipped classroom for this lesson. During lesson 4 of this project, all the students did not meet the lesson objectives as they had

not completed the correct homework objectives in preparation for the lesson. All the students had, however, engaged with the flipped classroom as they had sampled some construction processes. In terms of meeting the lesson objectives the students had fallen behind which impacted their preparation for the remainder of the project. From lessons 5 to 9, the students were unable to catch up on the work they had fallen behind on and did not meet the lesson or homework objectives. However, all the students continued to engage with the flipped classroom by using the content to sample processes as they tried to catch up. During project one, from lesson 4 to 9, there was still some resistance towards the approach whereby some students did not engage with the homework requirements. During project two, however, all the students' attitude towards the flipped classroom had improved as they were using the homework time to gain knowledge by sampling and the lesson time to apply their knowledge while constructing their garments.

The researcher used the lesson objectives to assess the students' competencies by observing their ability to apply the knowledge they had gained for homework during class (see Figure C.9). The impact of lesson 4 meant that the students' abilities did not align with the lesson objectives as they had prepared for the wrong lesson. The students had, however, engaged with the flip classroom and gained knowledge. The observations revealed that the students were competent and able to apply their knowledge even though it did not align with the lesson objectives. As a result, an additional category was added to the table whereby, the students' abilities were assessed even though they did not align with the lesson objectives.

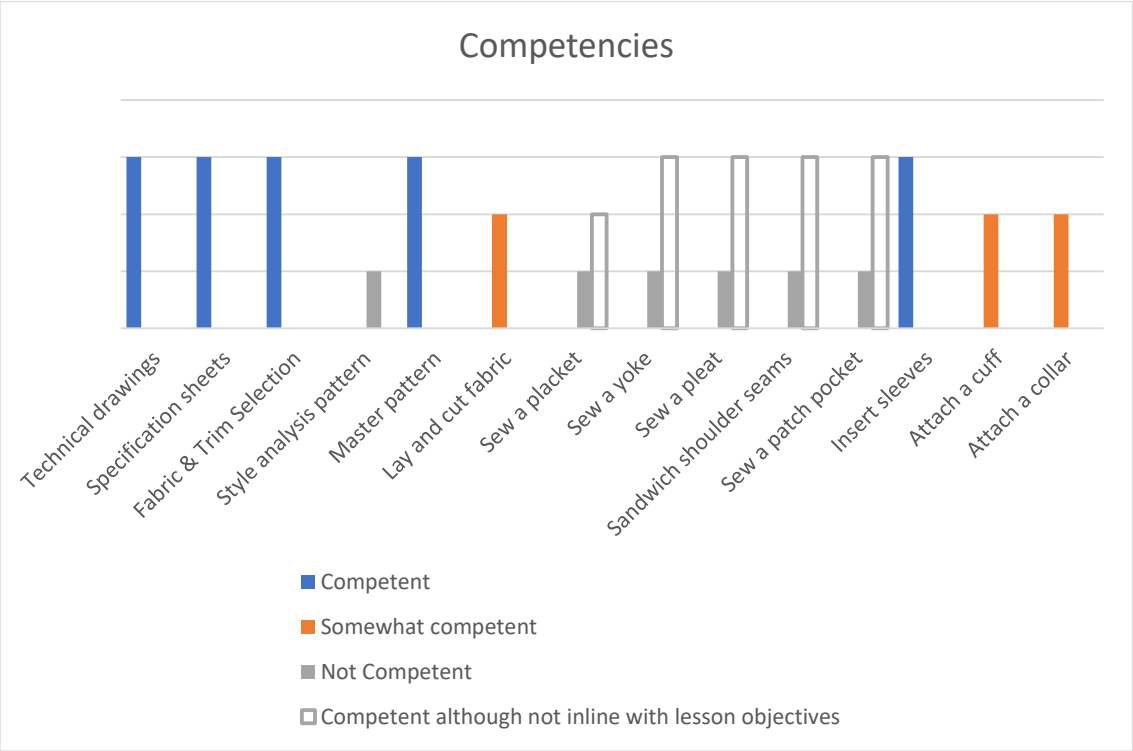


Figure C.9 Students' competencies

During the first lesson, all the students showed that they were competent as they were able to create a technical drawing of their design and develop a specification sheet. When the students selected fabrics and trims for their shirts, they drew on the knowledge they had obtained in the textile module, which was completed in the time between project one and two. All the students selected appropriate fabrics for constructing shirts. During lessons 2 and 3, 4 of the students were not prepared for the lesson which meant that there was no evidence that they were competent in making their shirt style analysis pattern. All the students, however, were able to make accurate master patterns for their shirt designs proving that they were competent in this regard. When the students had to use their pattern pieces to cut their fabric, three students did so incorrectly. The students should have cut a left and a right front panel, instead they had cut two left panels. This impacted their ability to construct a placket, as the students only realised their mistakes once they had sewn two matching sides instead of a left and a right panel. In assessing the students' level of competence in sewing a placket, two areas had to be considered. The students were not prepared for lesson 4 where they were meant to construct their plackets which meant that they were not competent in terms of the lesson objectives. The students did, however, exhibit

the ability to construct their plackets in the following lesson proving that they had used the online content. During lessons 4, 5 and 6 the students were also supposed to be able to construct their yokes, pleats, shoulder seams and patch pockets. As the students did not meet the lesson objectives, they were not competent, however, the students did construct those processes well once they had completed them. During those lessons they students were using the knowledge they had gained from the online content and applying it to their garments. The students seemed a lot more confident in their abilities as they were not asking what to do rather they were able to apply their own knowledge. This allowed the researcher to assist them in facilitating their knowledge. The students continued to show their confidence during lesson 7 by proving that they were competent in their ability to insert a sleeve. When it came time to insert their cuff and collars, all the students struggled as this was the most technical construction process of the garment. Both the construction processes were very similar and as a result, the students tended to struggle with the same areas on both the cuffs and the collar. One student for example struggled to press (iron) both their collar and the cuffs. He/she was able to construct and insert both pieces, but it was poorly done because of their difficulties with pressing. For another student, they had struggled with their top stitching which was a feature on both pieces. All the students, however, completed both these processes, but they were only somewhat competent as they were not completed to the professional standard they should have been.

The students' engagement (question 6 and question 7)

Observations were made based on the students' attitudes during the lesson to determine their level of engagement (see Figure C.10).

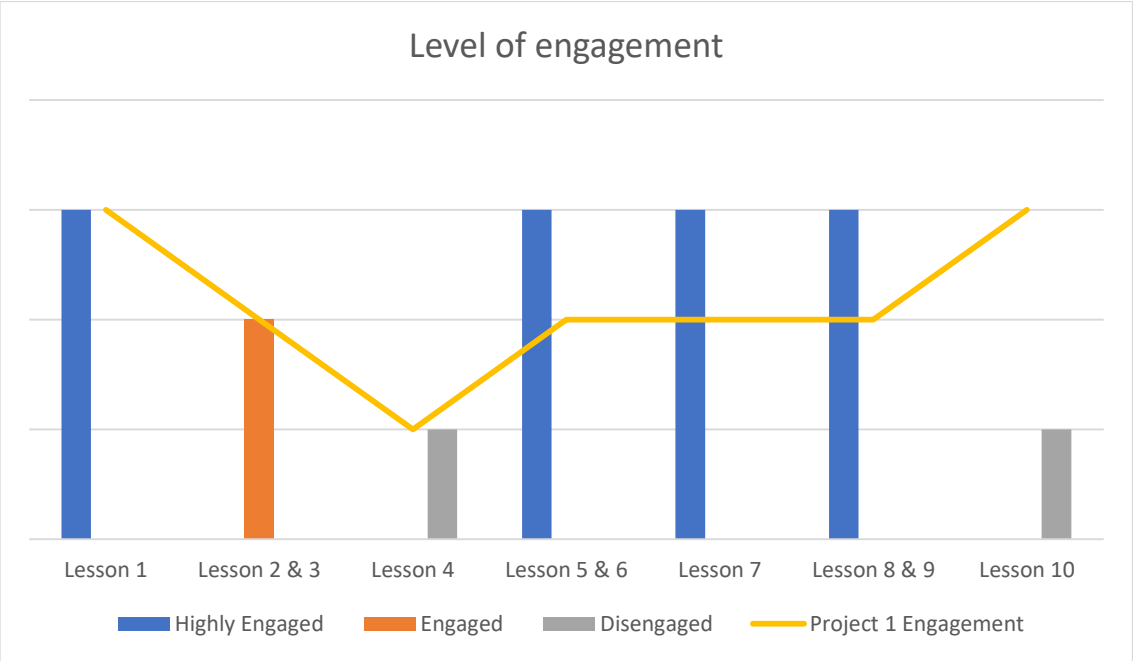


Figure C.10 Students' level of engagement

In the briefing lesson the students were highly engaged and positive throughout the lesson. The students had come prepared for the lesson with their designs and as a result were excited to start seeing their shirt designs come to life. One student stated that he/she was excited to be able to wear one of their designs. Each student seemed to enjoy the class exercise as they were enthusiastic during the process of finding a designer's shirt. All the students engaged and participated in the class discussion, offering their opinions and critique with their peers. During lessons 2 and 3, only two students were highly engaged with the lesson objectives. The remaining four students had disengaged with their homework and only started engaging with the online content during the lesson when they were not given the opportunity to be told what to do as they had hoped. For lesson 4 the students disengaged with the lesson when they realised they had prepared for the wrong lesson and the knowledge they had gained could not be applied to their garments because of the order of assembly their garments required them to follow. The pattern in the students engagement for the first 4 lessons mimicked the first project. The students started off positive and enthusiastic in the first lesson and then became resistant towards the flipped classroom and learner-centred approach to teaching which impacted their engagement. There was a remarkable difference, in this project, in the level of

engagement from lesson 5 compared to project one. The students were not resistant towards blended learning and the flipped classroom which meant that they were prepared for the lessons and had knowledge to apply. This impacted their attitudes and engagement as they were more positive and seemed to enjoy the learning process because they were the bearers of knowledge. It was evident that the student-centred approach started appealing to the students as they held the knowledge instead of the lecturer as Faerm (2015: 189), had mentioned the traditional teacher-centred approach would not appeal to today's students. During lessons 5 to 9, the students also seemed to enjoy the hands-on live demonstrations, as this allowed them to see the process in real life, giving them the opportunity to touch and examine the sample. The students engaged during the process asking questions to gain clarity and this gave them the confidence for the self-regulated homework requirements. The students were highly engaged during the speed dating exercises, as they seemed to enjoy showing their peers what they were doing and they were able to share their knowledge and experiences, articulating the new design vocabulary they had learnt. During the final lesson, however, they students disengaged with the learning process as they did not want to do a reflection video. The four students who had not made the reflection videos had a negative attitude during the lesson and did not want to participate in the lesson. Those four students were given 15 minutes to film their reflection videos. The students agreed as they were aware that although the reflection video was not part of the institutional assessment criteria, their effort and classroom engagement was. Their lack of engagement would have impacted their final results which they did not want to be penalised for.

Data were gathered on the areas from which the students were disengaging (see Figure C.11). It had been determined that the area which the students disengaged with for lessons 2 and 3 was their homework and the flipped classroom. The students lack of engagement with the Google Calendar caused them to fall behind of the lesson objectives for lessons 4, 5 and 6. The students started to catch up their work, for lessons 7, 8 and 9, however, their workload had increased because of the impact of lesson 4. The students struggled with their time management as they had more work to do and less time to complete the

assignment in. In the final lesson it was found that the reflection videos were something the students were not engaging with.

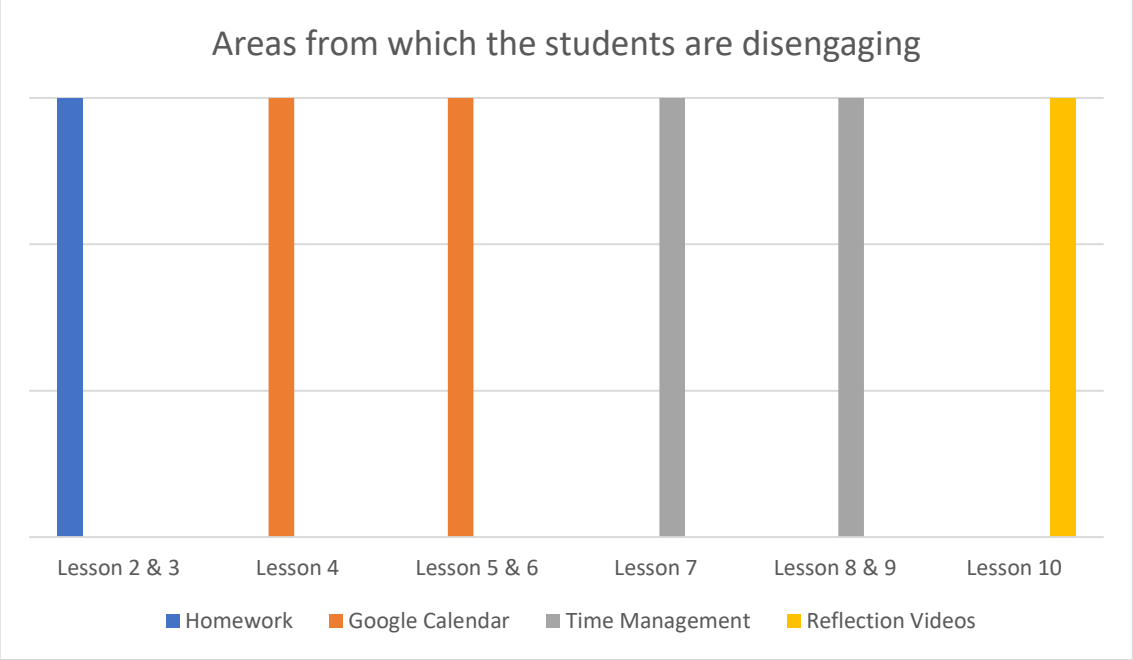


Figure C.11 Areas from which the students are disengaging

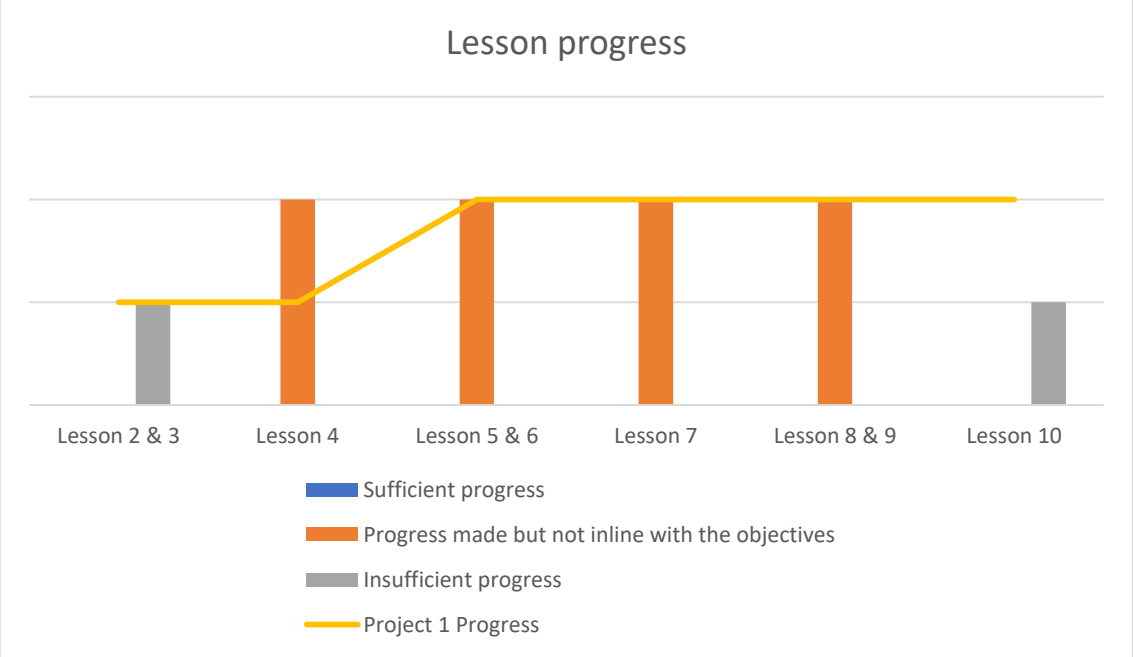


Figure C.12 Lesson progress

Application of skillsets and knowledge (question 8 to question 11)

The lesson and homework objectives were used to assess the students' ability to apply their new skills and knowledge, obtained from the online content, during the lesson (see Figure C.12).

In preparation for lessons 2 and 3, the students were required to use the online content to develop a style analysis pattern of their design. As its been noted only two students had come prepared for the lesson and the remaining four students had not. The students' overall progress was insufficient in terms of meeting the lesson objectives. In lesson 4, the students had fallen behind, however, they were still able to make progress even though it did not align with the lesson objectives. The impact of lesson 4 meant, for the remainder of the project, that the students were behind on their homework and the lesson objectives. This data aligned with the findings of project one, as in both cases, progress was made, however, it did not align with the objectives. During lesson 10, the lack of engagement with the reflection videos meant that the students had not made sufficient progress for the lesson.

The students ability to apply their knowledge was assessed to determine their capability to gain knowledge from the self-regulated homework (see Figure C.13).

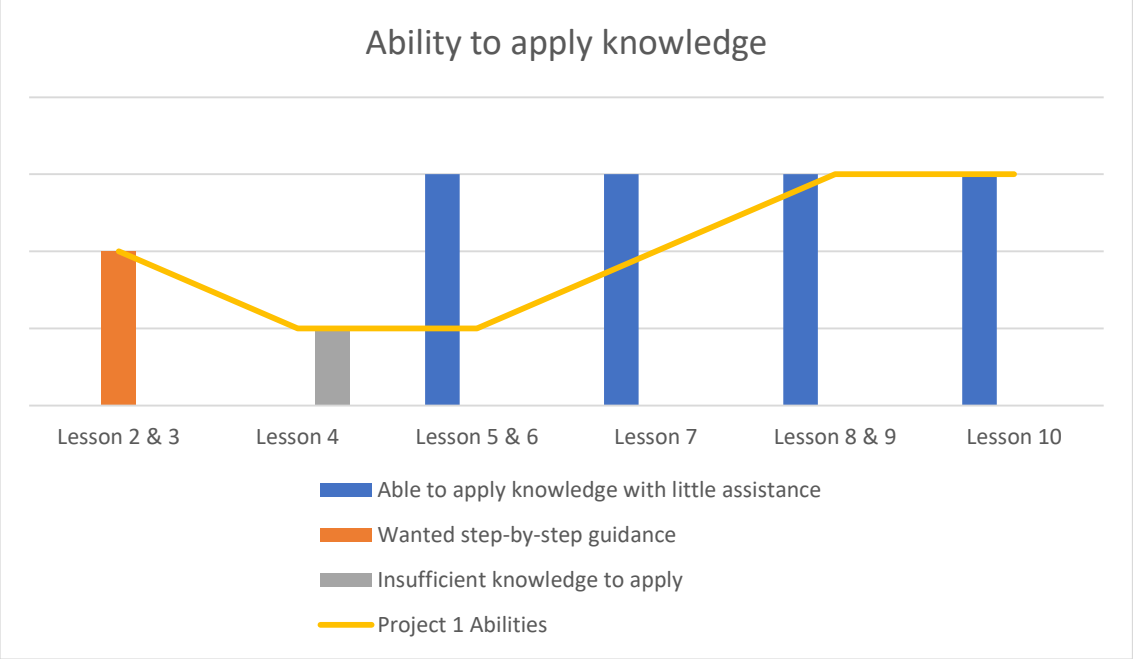


Figure C.13 Ability to apply their knowledge

During lessons 2 and 3, four of the students wanted step-by-step guidance through the pattern making process because it was easier than engaging with the blended learning process. The students watched the online content during the lesson and were able to apply the knowledge to their patterns. As the students had prepared for the incorrect lesson for lesson 4, they had insufficient knowledge to apply. The knowledge that they had gained could not be applied because garments have to be constructed in a sequential order as certain things have to be done first before another. The processes they had learnt could not be done until later on in the sequence of construction. The students used the lesson to sample the processes, they had missed, during the lesson. During lessons 5 and 6, the students were able to draw on the knowledge they had gained for homework and were able to apply it to their garments during the lesson. The students were also able to draw on the construction knowledge they had obtained during the first project and were able to apply those processes to their shirts. The students were confident in themselves and their abilities, as they were not asking questions on what they should do, rather they were asking for clarity on what they thought they should do. The students were showing evidence of critical thinking and an ability to extract the information necessary for themselves to fulfil the task. The results for this project were more positive than project one as the students were engaging with the process and taking ownership of their own learning. In project one, the students were able only to apply their knowledge with limited assistance from lesson 8 and 9. Whereas, for this project, the students were able to do so from lesson 5. This improvement was because the students were embracing the blended learning delivery, although not from the beginning but their attitude towards the approach changed earlier on in the project. After lessons 8 and 9, the students had to complete their shirts on their own for homework as they had not completed them in class. All seven students showed evidence that they were able to apply their knowledge on their own as they had completed their shirts.

The students skillsets were assessed separately from their knowledge (see Figure C.14). Although the students may have been able to gain and apply their

knowledge, this data explored how well the students were able to produce the processes.

Figure C.14 Standard of skillset

In developing the students' professional practise, they should have been working towards producing work which was a high and professional standard. As such, the students' skillset was assessed based on three aspects where the processes were: completed to a professional standard; completed; or not completed. As with project one, majority of the students were unprepared for the lessons 2 to 4, and they, therefore, did not have any skills to apply to their projects. From lessons 5 to 9, once the students started engaging with the blended learning approach and sampling processes before applying them to their garments. The students' skillset improved lesson-by-lesson as they worked towards becoming professional seamstress. The contrast between the data of project one and two could be attributed to the students' construction experience. Project one was the first garment the students had constructed, whereas, for this project the students started the project with existing construction skills and an understanding of the processes involved in constructing a garment. The students' skillset had in turn improved because they had more practise and experience. During lesson 10, the four students were willing to complete their reflection videos during the lesson. The videos were not completed to a professional standard because they

were rushed and did not meet all the requirements because they only produced content which explained the processes they followed. At the end of the lesson all the students had submitted a reflection video unlike project one where only three students had submitted videos on time. During this project, the three students who had completed their reflection videos produced good quality work because they had filmed content during the construction of their garments. These students were able to show the processes they had followed and how they problem solved any issues.

Gaps in the content (question 12)

During the project, adjustments had to be made to the content to ensure that it met the students' needs. A student stated that he/she did not understand the video content developed on cuffs because their cuff did not look like the one online. The students' query was reviewed, and it revealed that the content did not align with five students' shirts. The videos were developed for a shirt with a cuff placket opening which only two students had. The content had to be adapted to address the needs of those five students and alternate content had to be developed. A diagram was uploaded onto the LMS and a live demonstration of the process was presented during the face-to-face contact time because the processes were not vastly different from the content initially provided. One other student also requested additional content for his/her garment. This student's design had a belt and they wanted to add hand embroidered belt loops to secure the belt. As the student made this request during lesson 9, there was no time produce the content. Rather, a YouTube video from a public channel was shared on the LMS to address this student's needs.

Learning needs (question 13 to question 15)

An assessment of the students' learning needs was made to determine areas which needed to be addressed in following projects. As pattern making and garment construction builds on itself it is important to address the issues before the students continue making the same mistakes in the future.

During the project, three students faced a construction issue which stemmed from an inaccurate pattern. The students' needed to understand the importance of pattern accuracy and a lesson on equating the pattern seams, as a final check before cutting, needed to be conducted. All the students needed to work on their garment pressing (ironing) skills. Although they were all pressing their garments, they were not doing so to a professional standard. Professional problem solving was also an area which needed to be addressed. In preparation for the final submission, four of the students had issues which they had to problem solve. Some of the students tried their best to resolve their issues, however, their solutions were not of a professional standard. For other students, they did not know how to solve the problem and as a result left the issue as is. The students needed to be given the tools to source information for themselves to solve these problems. The data collected from the observations allowed for an assessment of the blended learning delivery from the lecturer's perspective based on the students' participation, engagement, abilities and the gaps in the content. The data collected in this section was used as recommendations for future projects. The data also allowed the researcher to compare and discuss the students' opinion in the next stage.

C.4 Stage 3 data analysis and results

The reflective stage involved the students' interviews and the reflective exercise. The interviews were administered in the same way as project one via Google Forms. The interviews were conducted and transcribed by a third party who transcribed the students answers verbatim and ensured the anonymity of the participants (for the interview answers see Appendix F). The reflective exercise was conducted as a group discussion and documented by the researcher (for the reflective exercise answers see Appendix F). The interview was designed to gain an understanding of the students' engagement with the blended learning delivery, their level of enjoyment and lastly the number of hours they spent on homework, engaging with the online classroom and completing their deliverable. The reflective exercise was designed to gain a deeper understanding of the students' preferences.

C.4.1 Interview question breakdown

The interview consisted of 17 open-ended questions. The interview questions were designed to understand the students' experience.

The level of enjoyment (question 1 to question 3)

These questions set out to gain an understanding of the students' level of enjoyment of the blended learning approach (see Figure C.15).

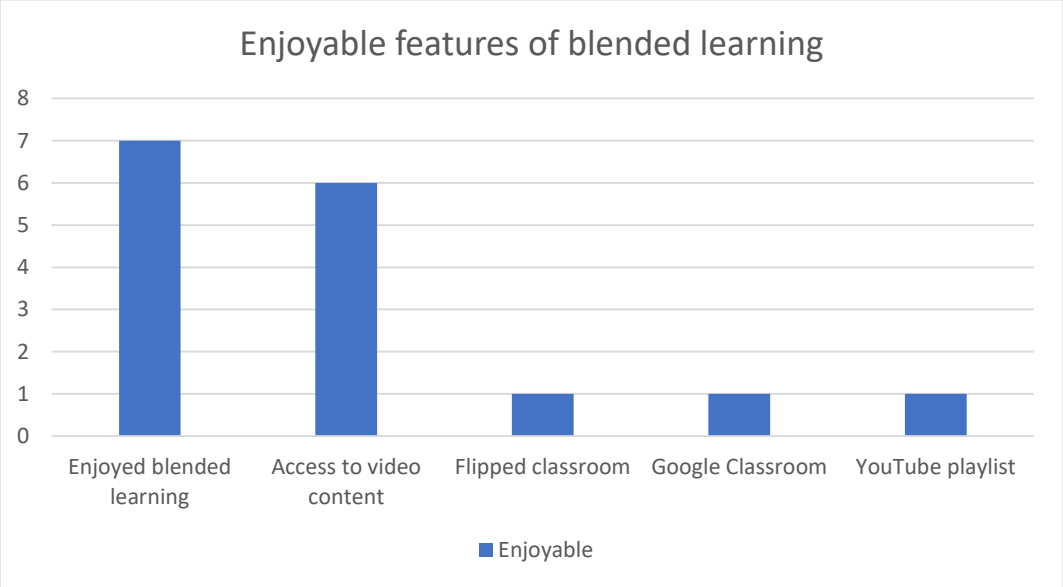


Figure C.15 The enjoyable features of blended learning

All seven students stated that they enjoyed the blended learning delivery during project two. For two students, their experience with blended learning made it more enjoyable, as one student stated: "I found it better than last time because I had more experience and I found it easier". Another student noted that he/she enjoyed the process more because: "I understood the blended learning process of watching, sampling and making". The areas that the students found most enjoyable was the video content, with six of the students mentioning that they enjoyed the accessibility in particular. A student mentioned that he/she enjoyed: "learning from the videos and knowing that we can retrieve them again" and another student said: "it was really nice to have videos on hand all the time". For one student, the flipped classroom approach was an area which they enjoyed the most as it gave them the opportunity to prepare for the lessons. A student stated that he/she liked that the content was accessible on Google Classroom, noting

that: “I get notifications about the work due and it is in a good viewing order”. Additionally, a student said they enjoyed having access to the YouTube playlists.

There were a few features of the blended learning approach that the students did not enjoy (see Figure C.16).

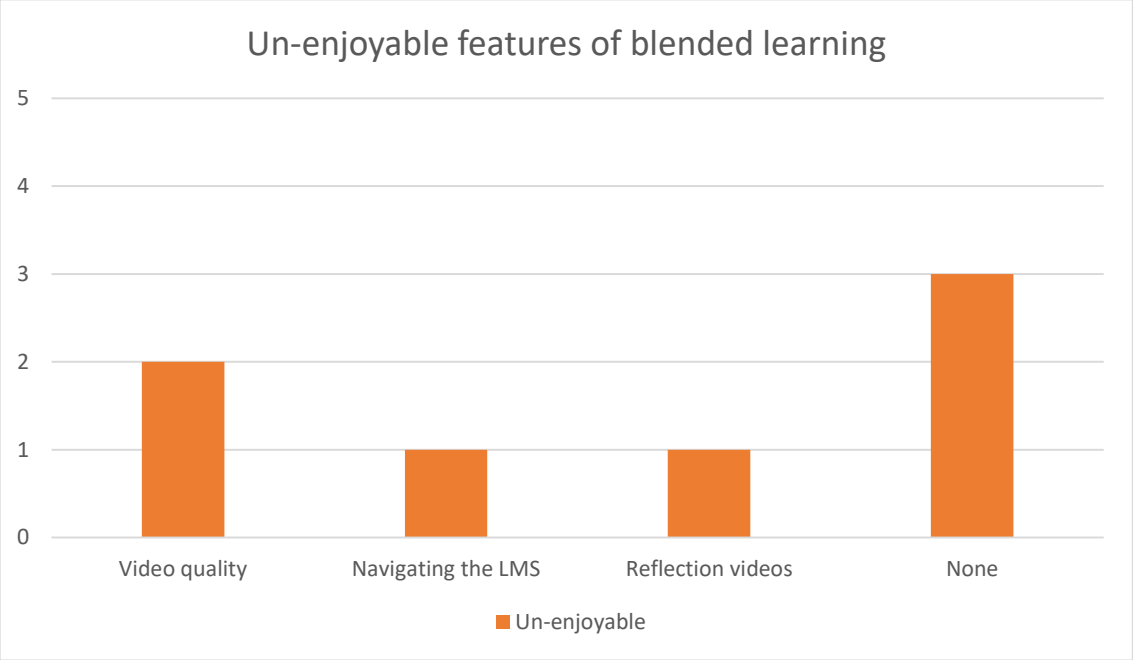


Figure C.16 The un-enjoyable features of blended learning

The part of the blended learning delivery that two of the students did not enjoy was their inconsistent internet connections, which affected the quality of the videos. A student mentioned that he/she did not enjoy navigating the LMS to find the content. Another student noted that he/she did not enjoy the reflection video element. However, there were three students who stated there was nothing that they did not find enjoyable.

Students’ homework experiences (questions 4 to question 6)

The researcher was interested in assessing the impact the blended learning approach would have on their self-study time. Below is a chart which provides a comparison between the number of hours spend on homework, in preparation for a lesson, during project one and project two (see Figure C.17).

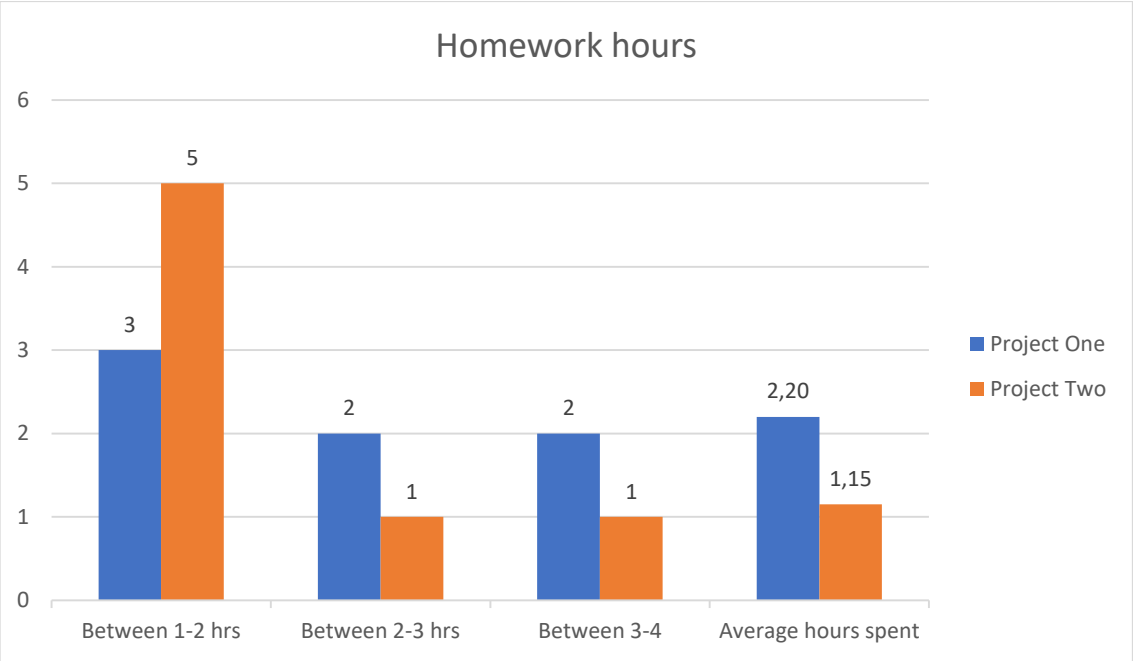


Figure C.17 Homework hours

In the previous project the students stated that they spent on average 2 hours and 20 minutes in preparation for a lesson, whereas the recommended amount of self-study time was 2 and a half hours. In project two, the students spent on average 1 hour and 15 minutes on their homework. There was a reduction in the amount of time spent on self-study for this project and remarkably lower than the recommended homework hours. This reduction in time could have been attributed to the students' experience with construction as they had more knowledge to draw on when they engaged with the online content. The results are also alarming because the students were only spending half the recommended amount of time on homework.

The students were asked how they felt about the amount of time required for homework (see Figure C.18).

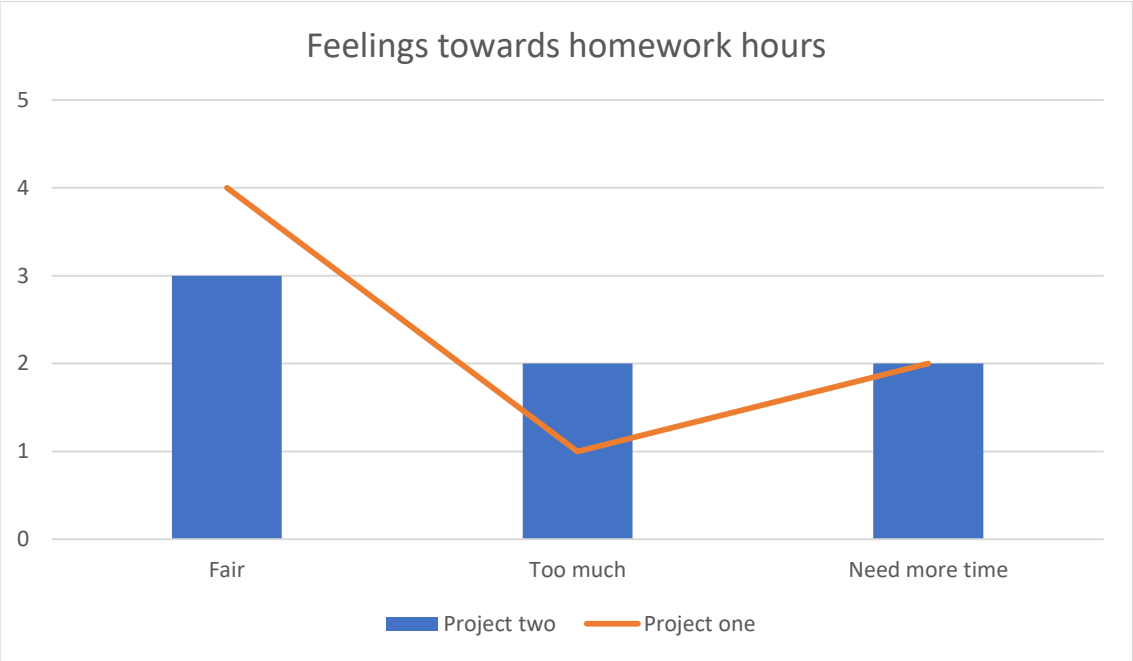


Figure C.18 Feelings towards homework hours

Fewer students in this project, stated that they felt the increased time was fair. For this project only three students found the time fair, whereas, four students had previously stated it was reasonable. There was an increase in the number of students who found the workload too much, with two students noting that they felt the amount of work was a lot. A student stated: “it is quite a lot” and another student said: “I feel like some of it could be done in class”. This student’s response may have been referring to the process of gaining knowledge at home rather than in class. One could assume that he/she wanted the contact time to be used to gain knowledge rather than as it had been, to apply knowledge. There were two students who mentioned that they felt they needed more time. As the students had not fulfilled the stipulated number of hours for homework, they did have access to more time, however, they had not made use of this time.

The students were asked about the number of hours they needed to complete their project after the final face-to-face lesson (see Figure C.19).

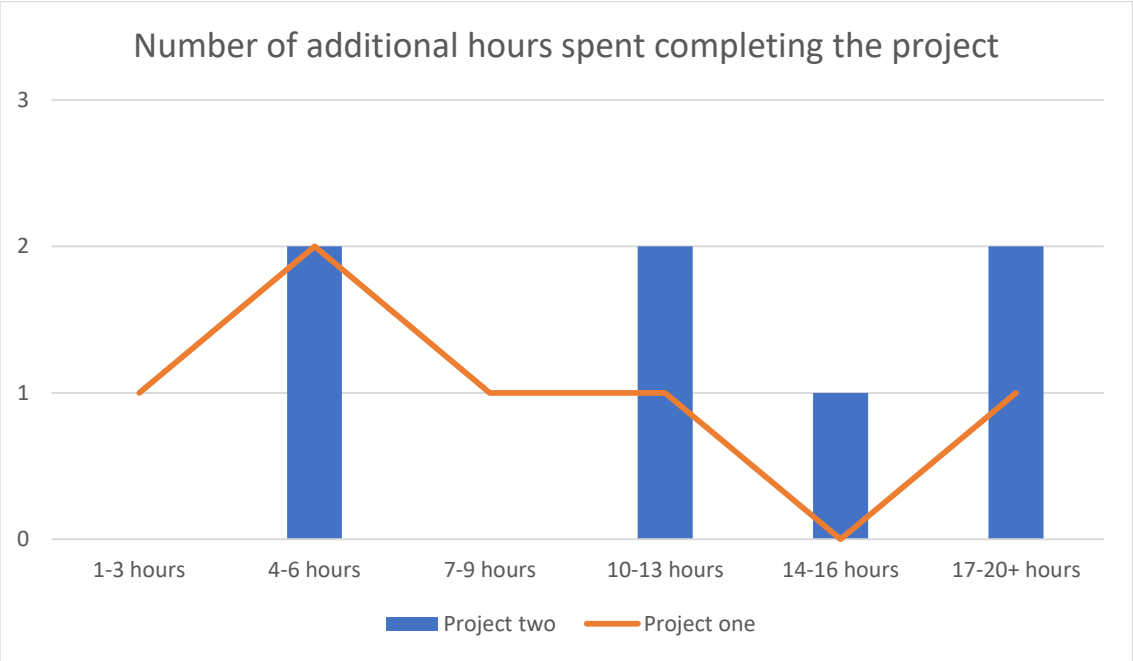


Figure C.19 Additional homework hours

The additional time spend on homework for this project varied from 5 hours to 36 hours. Whereas, previously the responses varied from 3 to 20 hours. For project two, there were more students who used a higher number of hours to complete their project. The students' lack of engagement with the number of hours they should have spent on homework before each lesson, impacted the amount of time they needed to complete the assignment. The students had also fallen behind of the workflow schedule and had more work to catch up.

The online classroom experiences (question 7 to question 12)

The researcher wanted to understand the students' experience of the online classroom and their experience of the video tutorials (see Figure C.20). All students expressed that they enjoyed the online content. A student stated: "they were really good this time and I got to the post easily" and another student said: "really good and informative". When the students were asked to express the parts of the online tutorials which they enjoyed the most or disliked, all the students had a different response. A student enjoyed the sub-title notes which were added to the videos. These notes had been added to the content to provide additional clarity for the students and to remind them to do something, for example to overlock a seam.

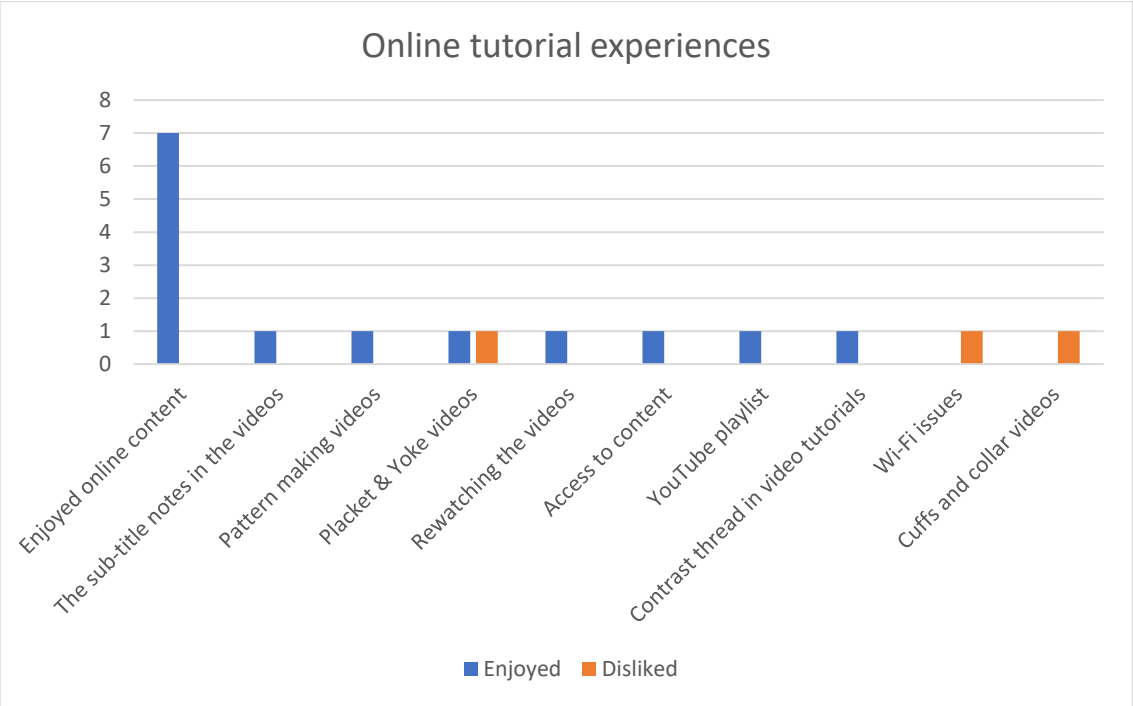


Figure C.20 Experience of the online tutorials

Another student noted that the pattern making videos were his/her favourite part. For one student, the video content on plackets and yokes was their most enjoyable feature, whereas for another student, this was their least favourite. A student mentioned that they enjoyed being able to re-watch the content as many times as they needed to. For one student, the accessibility of the content was an area which they enjoyed as they were able to: “work whenever you wanted to”. A student said he/she enjoyed having access to the YouTube playlist. Another student noted that her/she enjoyed that a brighter contrast thread had been used in these videos as he/she: “could see more clearly”. An area which one student disliked was the Wi-Fi connection issues which resulted in poor video quality. Lastly, a student stated that they did not enjoy the cuff and collar video content. These videos had the highest number of processes to follow.

The students were also asked if they had experienced any problems with the online tutorials (see Figure C.21).

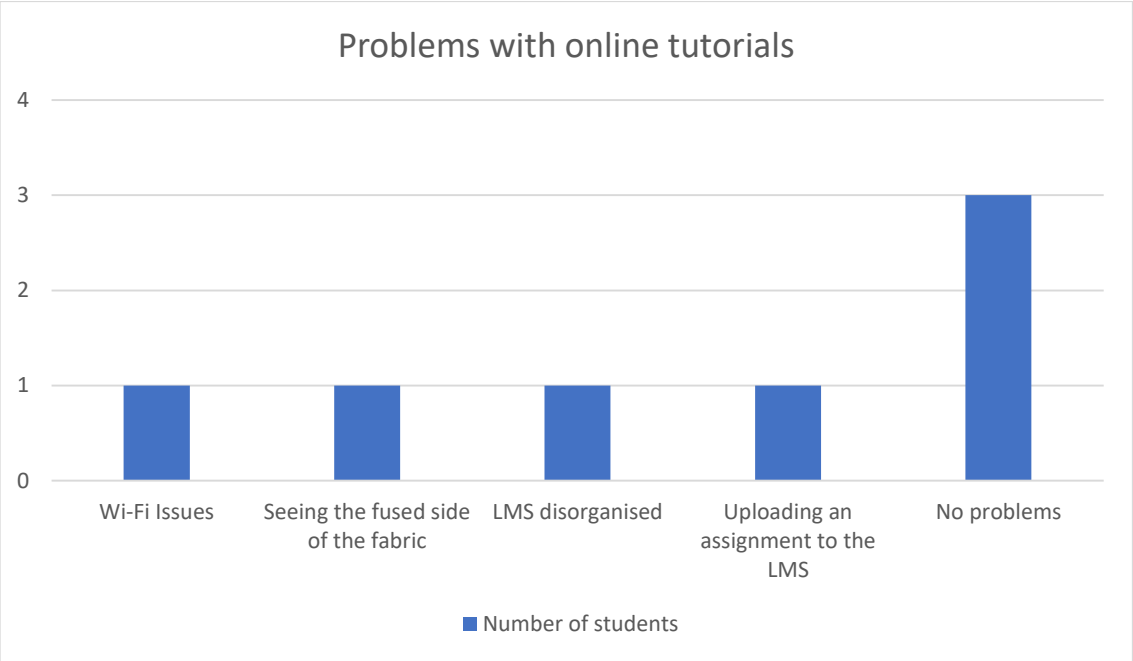


Figure C.21 Problems with the online tutorials

A student stated that they had experienced Wi-Fi issues. He/she said: “if you did not have Wi-Fi you could not watch the videos”. This student’s response was alarming as the students were given access to the YouTube playlist to overcome this issue. This student had not listened or was absent during the briefing lesson when this was explained. Another student mentioned that he/she struggled to see the areas which had fusible interlining on in the videos. This could have been because the fusible interlining and the fabric were the same colour. For one student, the layout of the LMS was disorganised. A student stated that they did not know how to upload their reflection video to the LMS. This was also concerning as there was content on the LMS showing students how to upload their videos. During the questionnaire all seven students stated that they had not experienced any issues uploading their assignments, however, when it came time to upload their reflection videos on the LMS only one student knew how to upload it. There were three students who stated there were no areas which they had problems with.

The students were asked if there were any tutorials which they had misunderstood or that they had found boring (see Figure C.22).

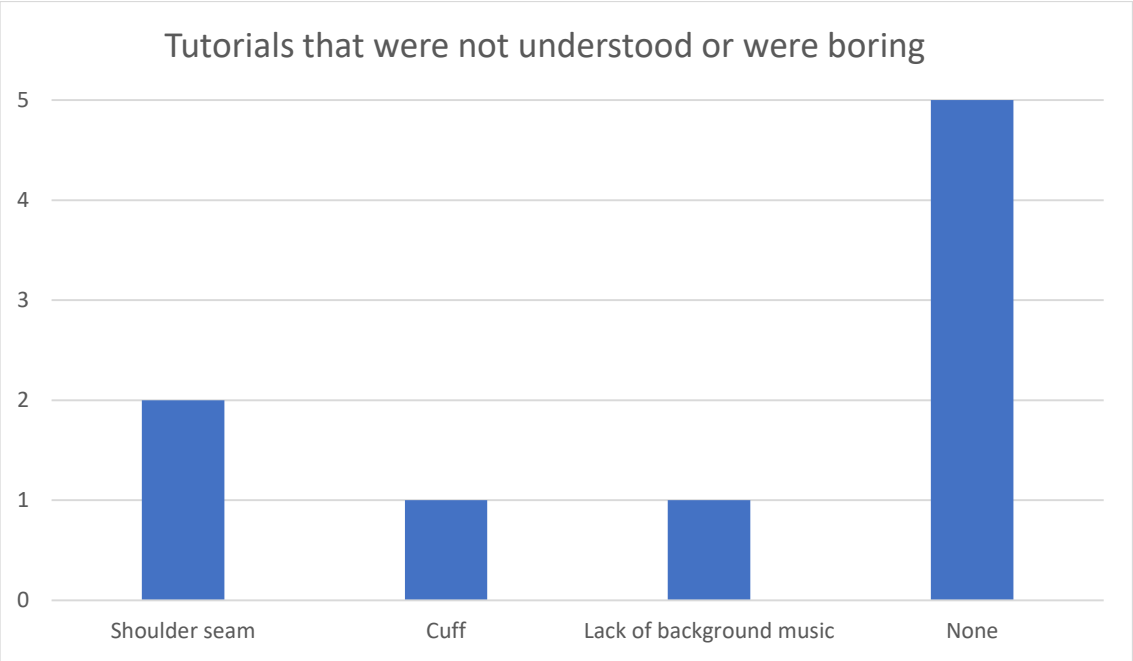


Figure C.22 Tutorials which the students did not understand or found boring

There were two students who had stated that they struggled with the shoulder seam, finding the videos: “hard to understand”, another student noted: “it was explained in a difficult manner”. A student mentioned that he/she found the cuff videos difficult to understand, noting: “I did not know how to sew a cuff without a placket, however, later on when she explained it to me in person it helped”. There was one student who noted the lack of background music in the videos was boring. There were five students who either did not find the content boring or they understood all the tutorials.

Students’ opinion of the flipped classroom (question 13 and question 14)

When the students were asked about their experience of the flipped classroom, they were a lot more positive than in the previous project (see Figure C.23). All the students had something positive to say about the flipped classroom. A student described the approach as helpful, stating: “it was really helpful and made the process go really quickly”. A student found the flipped classroom enjoyable saying: “I enjoyed it and felt like I knew what I was doing”. For four students, they felt the approach helped them be more prepared. A student mentioned that: “it was a good experience [and] it allowed me to be prepared before I went to class”. Another student noted: “it was a good because you knew what was expected

from you in class". Lastly, one student stated that the flipped classroom was a productive approach.

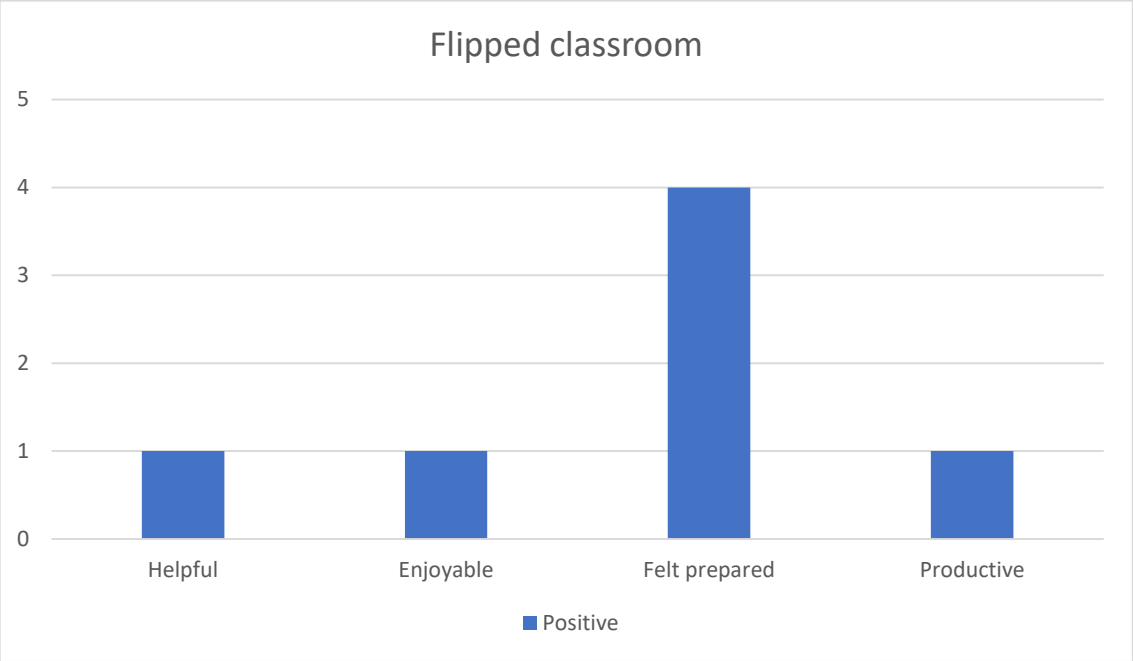


Figure C.23 Flipped classroom

The students were also asked which additional content they would have preferred learning face-to-face (see Figure C.24).

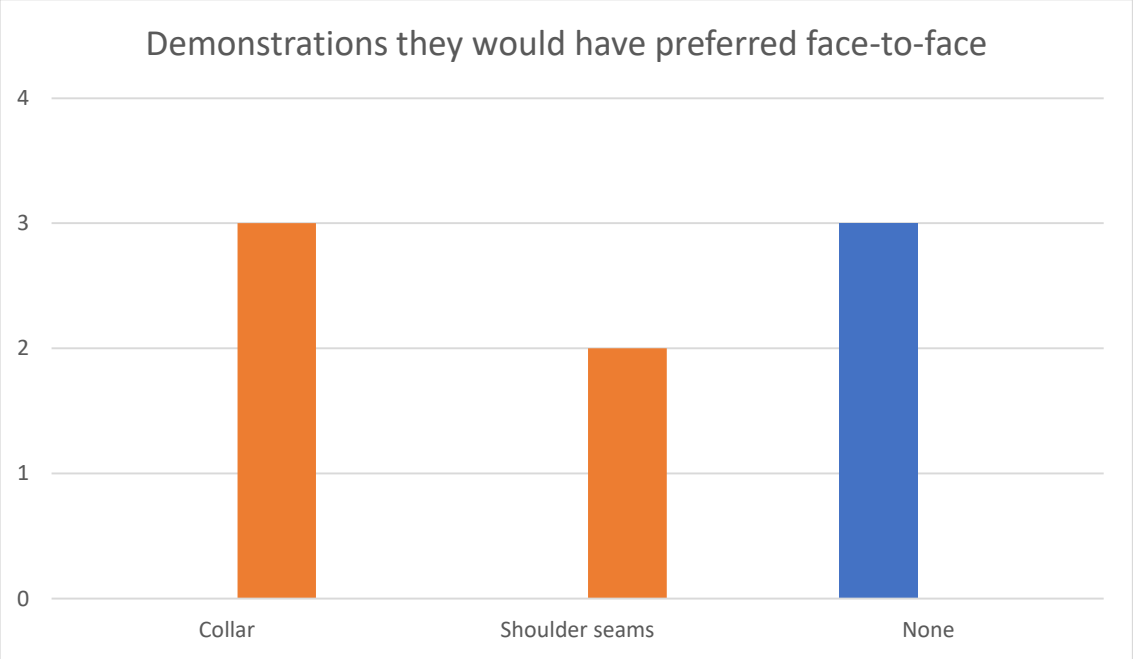


Figure C.24 Demonstrations which they would have preferred face-to-face

For this project, face-to-face demonstrations were presented during selected lessons to address the students' needs which were established in project one. The demonstrations which had run as scheduled included the sleeve insertion, constructing and inserting a cuff, as well as sewing on a button. The students stated that they would have preferred demonstrations on the collar and the shoulder seams. During the development of the blended approach for this project, considerations were made addressing the areas which needed to be demonstrated. The processes involved in constructing a collar and a cuff followed the same assembly method and as such the cuff was selected for the purpose of the demonstration. The processes which the students found difficult would be added to future projects.

The students' opinions (question 15 and question 16)

The researcher was interested in understanding the students' opinions on the pace of the brief (see Figure C.25).

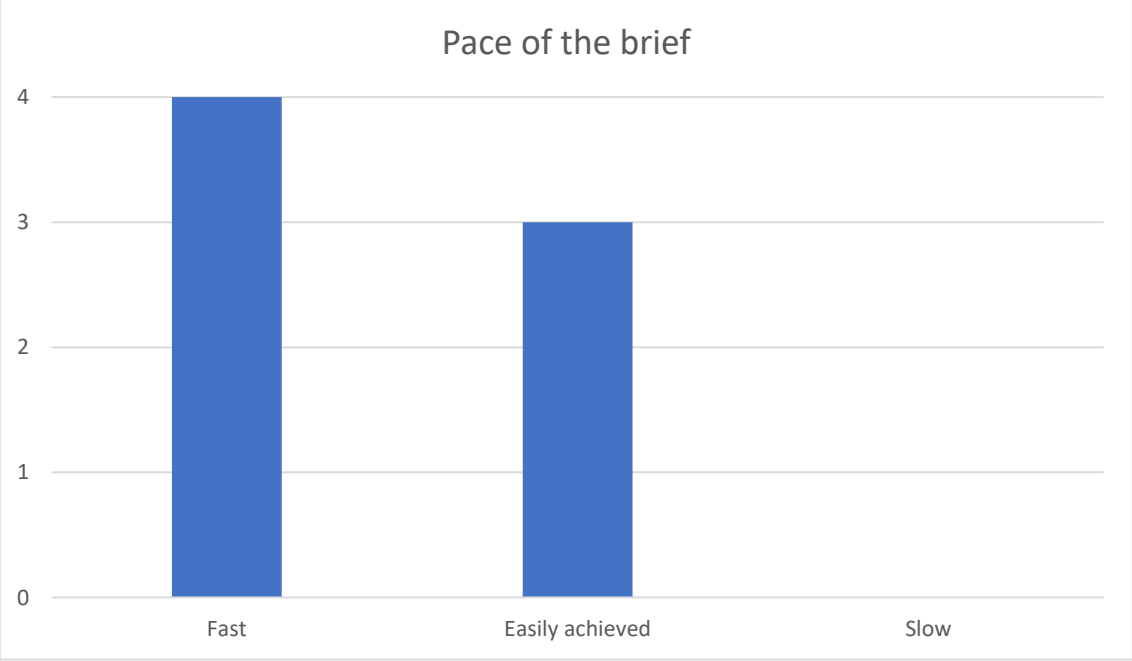


Figure C.25 Pace of the brief

The results were mixed as four students felt it was fast paced while three students felt it was well paced out and enjoyable. The students who found the project fast paced made comments like: "it was too fast [and] I feel like we needed more time to practise." Another student stated the project was: "very fast". The three

students who found the pace of the project as fair stated: “it was fair; however, sampling took too long [and] I should have started sewing earlier”. The contrast in opinions could have been linked to their time management. Those students who wanted more time, were likely the students who did too few hours of homework.

The students’ preference (question 17)

The researcher asked the students which blended learning approach they preferred, project one or project two (see Figure C.26).

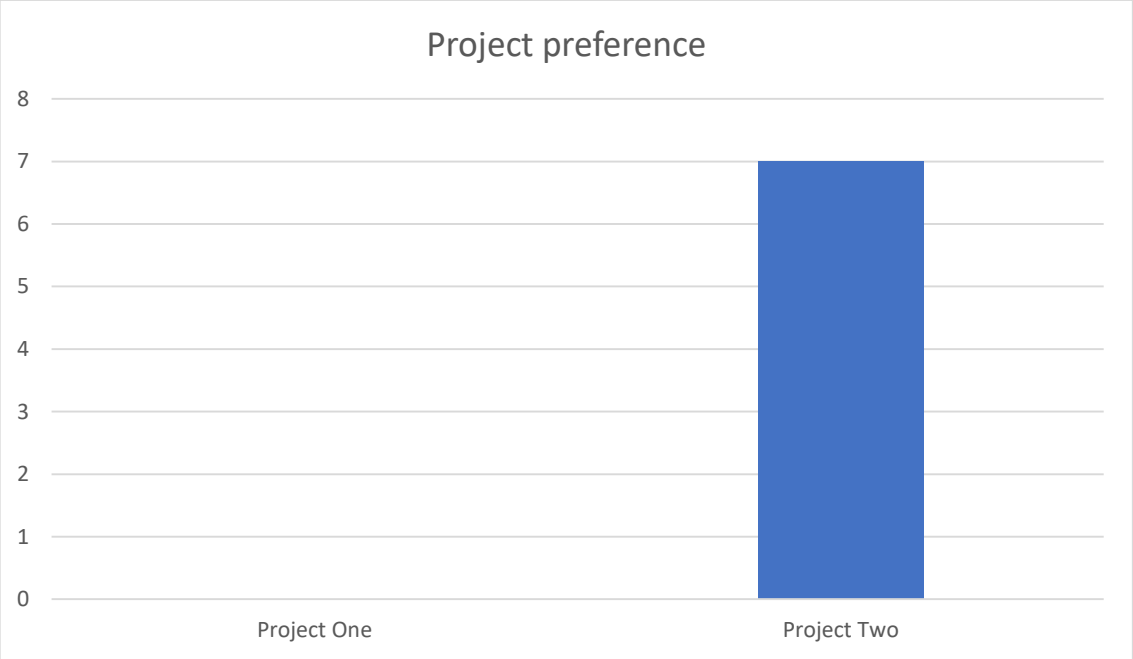


Figure C.26 Project preference

All seven students stated that they had preferred project two. For five of the students, their experience of project one assisted them in this project. A student stated that he/she enjoyed this project’s approach more: “because we had already done the blended lessons, [we] understood the process and we knew how to approach this one”. Another student noted: “because I gained [an] understanding on how to do it from the first project”. A student also stated: “I have a better understanding of blended learning as a whole”. For three students, the video content was easier to understand. A student said: “The components of the shirt was easier to understand compared to the components of the skirt”. Another student mentioned: “the videos were easy to understand”.

The data collected above were used to gain insight into the students' opinions of the blended learning approach. These data were used to compare the data collected in the reflective exercise.

C.4.2 Reflective exercise question breakdown

The reflective exercise consisted of eighteen questions and was administered as a discussion exercise by the researcher. These data were used to gain a deeper understanding of the students' experience and to compare and discuss the data collected during the interviews.

Blended learning (question 1)

The students were asked how they felt about the blended learning approach (see Figure C.27).

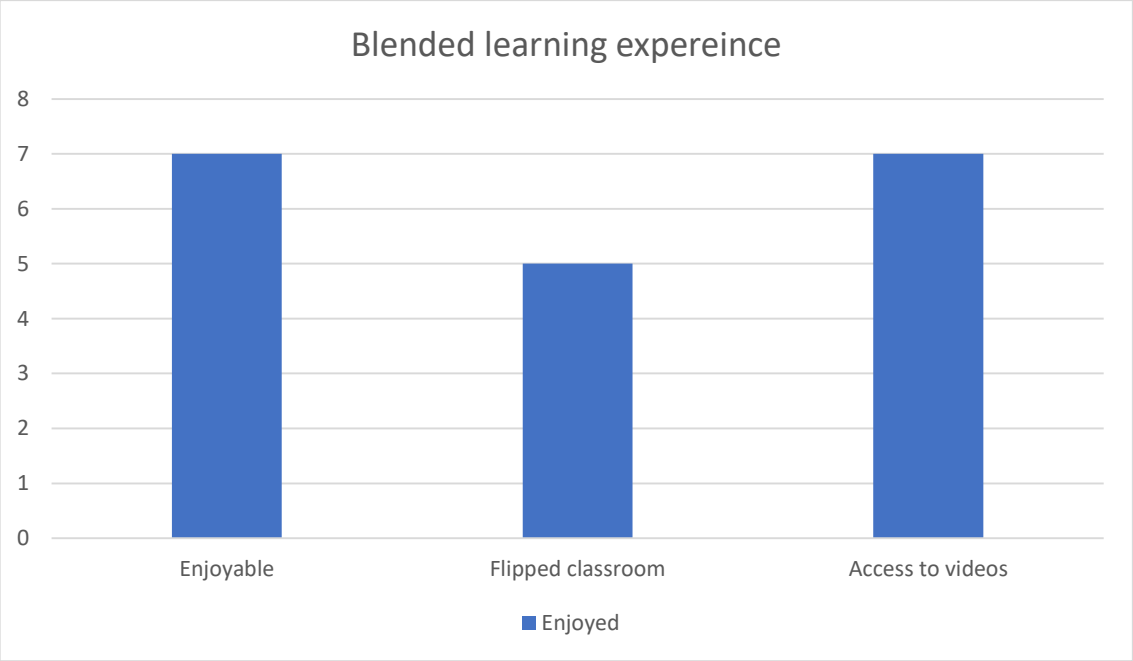


Figure C.27 Blended learning experience

All the students stated that they enjoyed the approach as they had in the interview stage. The students' discussion revealed additional reasons, different from those expressed in the interviews, for their enjoyment. Previously the students had linked their enjoyment to the experience they had gained from project one's blended approach. The students had also noted that the video content was

easier to understand in this project. Some of the students had noted during the interview stage that they had found the brief fast paced. During the reflective discussion this point was brought up by four students, however, they believed the flipped classroom assisted them in working at their own pace and gave them the knowledge they needed to work through the project. For all the students the access to the content as and when they needed it contributed positively to their experience.

Google Classroom (question 2 and question 3)

The researcher wanted to gain a deeper understanding of the students' feelings towards the layout and content on Google Classroom (see Figure C.28).

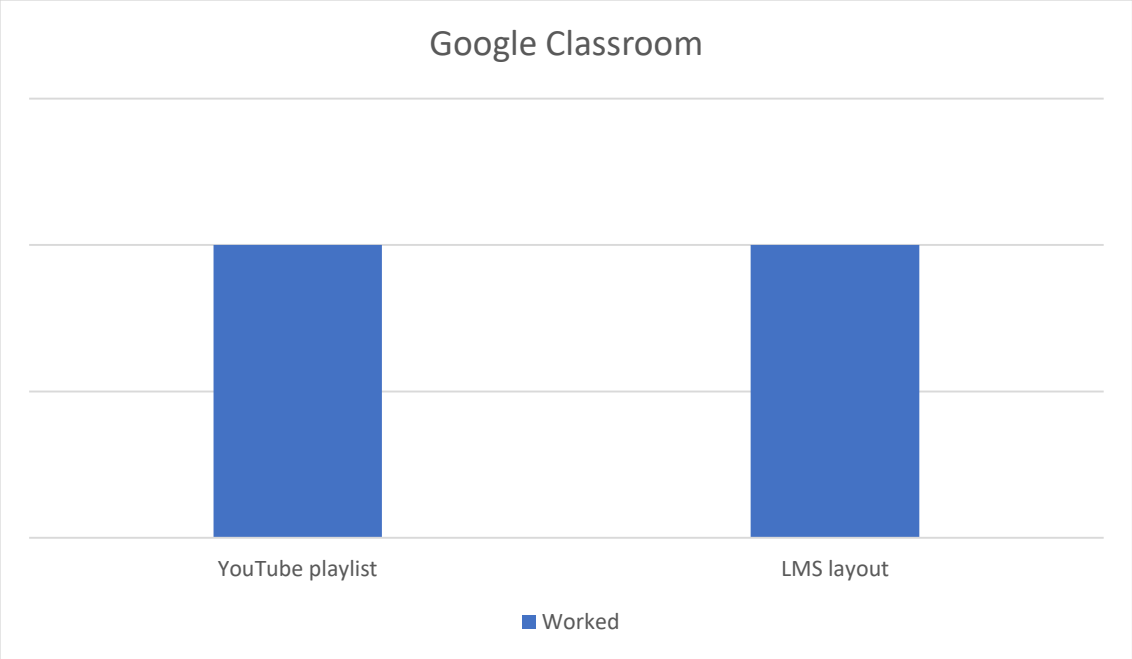


Figure C.28 Google Classroom

All the students felt that the layout of the LMS was easy to navigate. During the interview stage, one student had felt that the LMS was disorganised. It seems that this student had either changed his/her mind, or they did not feel confident enough to voice their opinion in a group environment. The students felt that the categories or topics were clear and easy to follow as it was set in chronological order. The students also enjoyed having access to the YouTube playlist. Some

of the students used the playlist to watch the videos in sequence rather than navigating through the categories on the classroom.

The context of the content (question 4)

The researcher wanted to assess whether the students enjoyed how the processes were presented. For this project they were presented as single pieces of information rather than of a finished garment, like in the skirts. All the students felt that the processes were easier to understand and to apply to their context.

Video content (question 5 to question 10)

The researcher also wanted to know if the students enjoyed the layout of the videos (see Figure C.29).

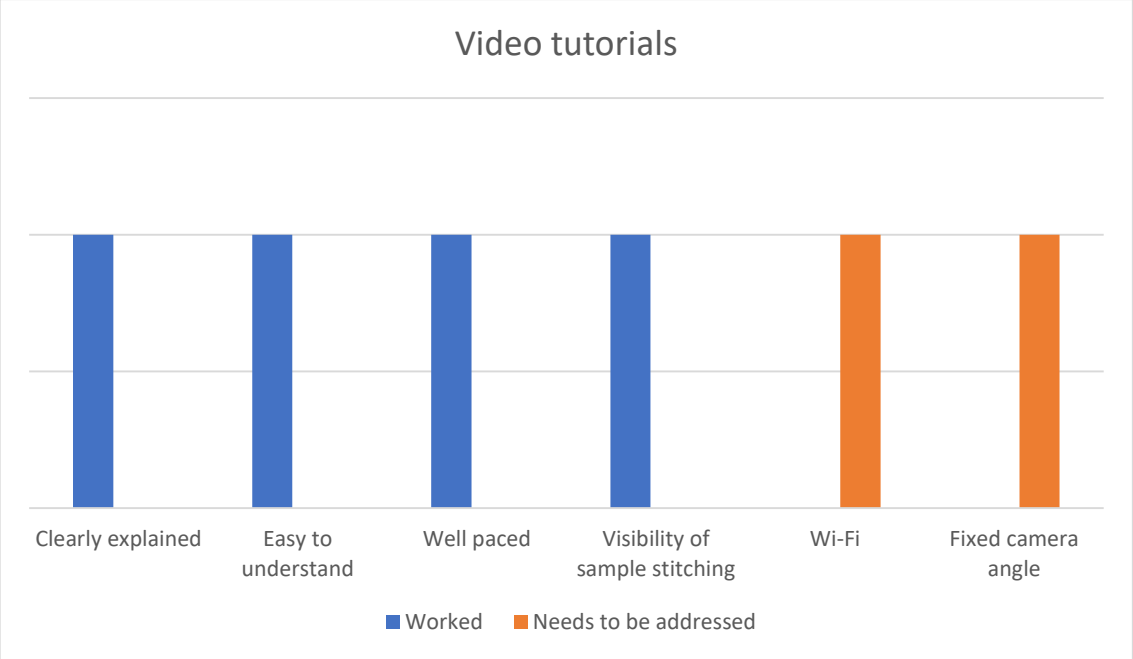


Figure C.29 Video tutorials

The students were asked if they were able to follow along with the videos. All the students agreed that the pace of the videos made them easy to follow and to understand. Some of the students stated that they found that the videos were clearly explained. In the previous project, the students mentioned that the video demonstrations would have been easier to see and follow with contrast thread. During this project, bright pink thread was used to stitch the white samples. The students noted that the brighter thread made it easier to see where to sew and

what it should have looked like. Some of the students still struggled to view the video content when they had poor Wi-Fi connections. Only one student made use of the feature on YouTube to download the content online and to view it offline. The other students continued to stream the content when they needed it. A student noted that she struggled to see the video demonstration of the shoulder seam clearly with the fixed camera angle. The student stated that she would have preferred seeing more difficult processes from a variety of angles. Her classmates agreed with her statement.

Students' engagement with the content (question 11)

The researcher wanted to know if the students had engaged with the content in its entirety to gain the core knowledge of shirts or if they had only watched the areas which were relevant to them. In the previous project, the students had stated that they had only watched what was relevant to their designs and they did not intend to watch the remaining content. For this project, the students did not watch all the content either. They did, however, watch more content, stating that they had watched as much as they could. The students mentioned that they had viewed more content than they had in project one. The students' engagement had shifted for this project as they had stated that they would go back and watch the content they had not covered. The students had started to see the value of learning skills for professional practice rather than learning for the purpose of completing a task.

Face-to-face classroom (question 12 and 13)

In this project the researcher added live demonstrations during the face-to-face class time. The researcher wanted to understand the students' enjoyment of the live demonstrations. All the students noted that the demonstrations helped them to have a basic understanding before sampling the processes.

An understanding of the students' opinion of what they would have preferred demonstrated face-to-face needed to be clarified (see Figure C.30).

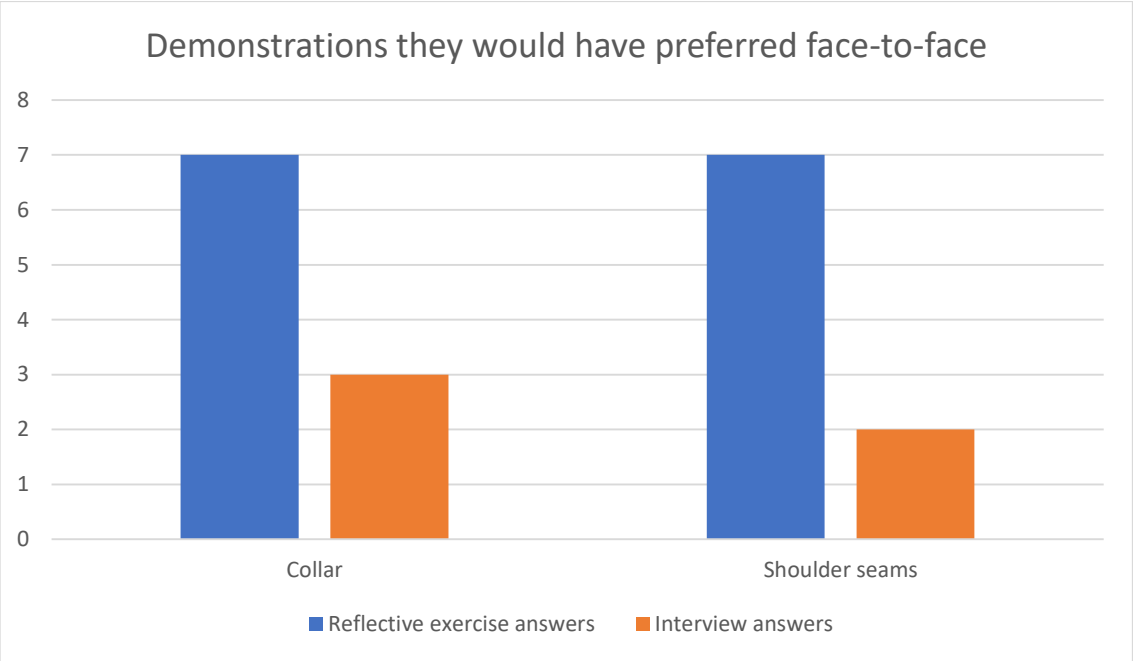


Figure C.30 Demonstrations they would have preferred face-to-face

In the interview stage, students had noted processes which they would have preferred live demonstrations of. The data revealed that three students would have liked the collar and two students would have preferred the shoulder seams. During the reflective exercise, all the students agreed that it would have been easier to complete these processes if they had had live demonstrations.

Blended learning process (question 14 and 15)

Although the researcher had confirmed the students' level of enjoyment of the blended learning approach, she wanted to understand if the approach appealed to them. During this project, all the students stated that the approach did appeal to them because they were able to work at their own pace and catch up on the work they had fallen behind on.

When asked what the value of the sampling process was, all the students said they found it helpful and it sped up the sewing process of their garments because they made fewer mistakes during the construction process.

Collaboration (question 17 and question 18)

The researcher wanted to know if the students enjoyed the collaboration process and learnt from their peers. The students felt that the speed dating exercise allowed them to learn from their classmates. The exposure to each other's processes made the students interested in learning from each other. Most of the students mentioned that (during their own time) they asked each other about the processes they had followed. The students were interested in learning more about the processes associated with the design elements they did not have in their designs. As with project one, the students stated that they valued viewing their classmates' reflective videos and seeing the processes they had followed.

Reflective stage summary

The reflective stage's data collection analysis provided guidelines for future projects based on the students' opinions and experiences.

- The students needed a clear video explaining how to download the content in a Wi-Fi area and how to view the content offline when they were not on campus.
- The researcher needed to film more difficult processes from different angles and in slow motion to ensure that the students could clearly see how to replicate the process themselves. Content could also have been included to show students how to change the playback speed of the videos on YouTube. Additionally, diagrams could also have been added to show the students which parts of the garment were being connected.
- In the future, when doing this project again, the content needed to include live demonstrations showing how to attach a collar and how to sew the shoulder seam.

APPENDIX D: NQF LEVEL DESCRIPTORS

NQF LEVEL 6 DESCRIPTOR

The South African Qualification Authority: Level descriptors for the South African National Qualification Framework

a) scope of knowledge by demonstrating detailed knowledge of the main areas of their field;
b) knowledge literacy by demonstrating an understanding of different forms of knowledge;
c) method and procedure by demonstrating the ability to evaluate, select and apply appropriate methods, procedures or techniques;
d) problem solving by demonstrating the ability to identify, analyse and problem solve in unfamiliar contexts
e) ethics and professional practice by demonstrating an understanding of ethical practice and the implications of one's decisions and actions;
f) accessing, processing and managing information by demonstrating the ability to evaluate different sources of information and select the appropriate information for a task;
g) producing and communicating information by demonstrating the ability to present and communicate complex information;
h) context and systems by demonstrating the ability to make decisions and act appropriately in familiar and unfamiliar situations;
i) management of learning by demonstrating the ability to evaluate performance against the given criteria;
j) Accountability by demonstrating the ability to work effectively within a group and to take responsibility for his or her own actions.

(Excerpt from South Africa 2012: 10)

NQF LEVEL 7 DESCRIPTOR

The South African Qualification Authority: Level descriptors for the South African National Qualification Framework

a) scope of knowledge by demonstrating integrated knowledge;
b) knowledge literacy by demonstrating an understanding of knowledge and to evaluate types of knowledge and explanations specific to the area of study;
c) method and procedure by demonstrating an understanding of methods of enquiry in their discipline;
d) problem solving by demonstrating the ability to identify, analyse, evaluate, critically reflect on and address complex problems;
e) ethics and professional practice by demonstrating the ability to make decisions and act ethically and professionally;
f) accessing, processing and managing information by demonstrating the ability to produce appropriate processes of information gathering;
g) producing and communicating information by demonstrating the ability to express his/her own ideas;
h) context and systems by demonstrating the ability to manage processes in unfamiliar and variable contexts;
i) management of learning by demonstrating the ability to identify, evaluate and address his/her own learning needs;
j) Accountability by demonstrating the ability to take responsibility for his or her own work.

(Excerpt from South Africa 2012: 10)

APPENDIX E: OBSERVATION SCHEDULE, QUESTION-NAIRES, INTERVIEW QUESTIONS AND REFLECTION GUIDELINES

OBSERVATION SCHEDULE

Observation Schedule	
Questions are to be answered at the end of every lesson (Each brief has 10 sessions)	
1	What is the students' response to the online content?
2	How prepared are the students for the lesson?
3	What is the students' attendance like?
4	What evidence have the students shown that they are competent in the objectives set by the online content?
5	What evidence have the students shown that they have not achieved the objectives to a desirable standard?
6	What is the students' engagement like during the lesson?
7	What areas are the students disengaging with?
8	How are the students able to apply the knowledge gained from the online content during the lesson?
9	What kind of progress have the students shown from the previous lesson?
10	Are the students showing steady growth in their knowledge?
11	Are the students showing steady growth in their skill set?
12	Are there any short comings in the online content?
13	What kind of problems have arisen during the lesson?
14	What learning needs need to be addressed?
15	Additional comment

QUESTIONNAIRE – PROJECT ONE

Questionnaire		
Blended learning is defined as the combination of face-to-face learning experiences and online learning experiences (Heinze 2008: 35; Van der Merwe et al. 2015). The pattern making and garment construction class time is considered the face-to-face contact time and your homework, also known as independent study time, will include online learning experiences.		
Baseline Knowledge		
1	Is your personal Wi-Fi login on campus currently working?	Y/N
2	Do you have access to the internet at home?	Y/N
3	Have you used Google Calendar before?	Y/N
4	Have you used Google Classroom before?	Y/N
5	If yes to question 4, have you added an assignment to Google Classroom before?	Y/N
6	If yes to question 4, have you commented on a Google Classroom post before?	Y/N
7	Have you filmed your own video before?	Y/N
8	If yes, please explain what device you used to film your video, e.g. Cell phone, camera, laptop etc.	
9	Have you uploaded a video onto YouTube before?	Y/N
10	What has been your experience of blended learning thus far?	
11	What part of blended learning do you enjoy the most? And why?	
12	What part of blended learning do you enjoy the least? And why?	
13	How many hours do you spend on homework a week for pattern making and garment construction?	
Garment Construction		
14	In your last sewing brief, you constructed a bag. Are there any parts of the construction of the bag that you struggled with?	

15	What construction methods do you feel you need more help with/ to work on?
Pattern making	
16	You just completed your pattern making test on skirts, are there any pattern making principles that you did not understand or feel that you need more help with?
17	Are there any pattern making principles that you have forgotten or feel that you need help revising?
18	Do you have any questions regarding pattern making? If yes, what are your questions?

QUESTIONNAIRE – PROJECT TWO

Questionnaire		
Baseline Knowledge		
1	Is your personal Wi-Fi login on campus currently working?	Y/N
2	Do you have access to the internet at home?	Y/N
3	Did you use the Google Calendar as a reference to guide you doing the brief?	Y/N
4	Did you experience any problems adding an assignment to the Google Classroom?	Y/N
5	If yes to question 4, please describe the problems you experienced.	
6	Did you experience any problems commenting on a Google Classroom post?	Y/N
7	If yes to question 6, please describe the problems you experienced.	
8	Did you submit a reflection video in the skirt brief?	Y/N
	If yes to the question 8, please answer the below questions:	
9	Did you experience any problems filming your own video?	Y/N
10	If yes to question 9, please explain the problems you experienced.	

11	What device did you use to film your video?	
12	Did you experience any problems uploading your video onto YouTube?	Y/N
13	If yes to question 12, please explain what problems you experienced.	
14	Did you experience any problems uploading your YouTube video link to the Google Classroom?	Y/N
15	If yes to question 14, please explain the problems you experienced.	
Garment Construction		
16	In your last sewing brief, you constructed a skirt, are there any parts of the construction of the skirt that you struggled with?	
17	What construction methods do you feel you need more help with/ to work on?	
Pattern making		
18	You just completed your bodice pattern making brief, are there any pattern making principles that you did not understand or feel that you need more help with?	
19	Are there any pattern making principles that you have forgotten or feel that you need help revising?	
20	Do you have any questions regarding pattern making? If yes, what are your questions?	

INTERVIEW QUESTIONS – PROJECT ONE

Interview Guide	
1	Overall, did you enjoy the blended learning process? Please explain your answer.
2	What parts of the blended learning delivery did you enjoy the most?
3	What part of the blended learning delivery did you like the least? Why?
4	How many hours of homework did you do to prepare for a lesson?
5	How many hours of homework did you do to complete your brief?
6	How do you feel about the number of hours needed for homework?
7	What was your experience of the online tutorials?
8	What part of the online tutorials did you enjoy the most?
9	What part of the online tutorials did you enjoy the least?
10	Please describe any problems you had with the online tutorials?
11	Were there any tutorials you did not understand? Please describe which one and why?
12	Were there any tutorials that you found boring? Please describe which one and why?
13	Was there any part of the online learning classroom that you would have preferred to have learnt during the face-to-face contact time?
14	What was it like gaining your knowledge before class and applying it during the face-to-face class time?
15	Please explain your experience on the pace of this brief, was it fast paced, easily achieved, too slow, boring or enjoyable?
16	Do you have any other comments you would like to make about your experience?

INTERVIEW QUESTIONS – PROJECT TWO

Interview Guide	
1	Overall, did you enjoy the blended learning process? Please explain your answer.
2	What parts of the blended learning delivery did you enjoy the most?
3	What part of the blended learning delivery did you like the least? Why?
4	How many hours of homework did you do to prepare for a lesson?
5	How many hours of homework did you do to complete your brief?
6	How do you feel about the number of hours needed for homework?
7	What was your experience of the online tutorials?
8	What part of the online tutorials did you enjoy the most?
9	What part of the online tutorials did you enjoy the least?
10	Please describe any problems you had with the online tutorials?
11	Were there any tutorials you did not understand? Please describe which one and why?
12	Were there any tutorials that you found boring? Please describe which one and why?
13	Was there any part of the online learning classroom that you would have preferred to have learnt during the face-to-face contact time?
14	What was it like gaining your knowledge before class and applying it during the face-to-face class time?
15	Please explain your experience on the pace of this brief, was it fast paced, easily achieved, too slow, boring or enjoyable?
16	Do you have any other comments you would like to make about your experience?
17	Did you prefer the blended delivery approach for project one (the skirt brief) or project two (the shirt brief)? Please explain your answer.

REFLECTIVE GUIDELINE – PROJECT ONE

Discussion Guideline	
1	Looking back on the blended learning approach, how do you feel about it now?
2	How did you feel about the layout of the Google Classroom?
3	Were there too many headings or categories or too few?
4	Did you like that the processes were broken down into shorter videos? Would have preferred a single video?
5	Were you able to follow along with the videos? Was the pace too fast or too slow?
6	Did the videos clearly explain the processes that you needed to follow?
7	Did you source other videos or content to complete your skirt?
8	Could you see the demonstration clearly in the video? Do I need to use brighter pens in the pattern making demonstrations? Do I need to use brighter fabrics or threads in the construction videos?
9	Were there any parts of the videos that you felt did not work?
10	Was there anything related to the videos or Google Classroom that you felt worked very well?
11	Did you watch all the content or only the content that you felt was relevant to your skirt? Do you intend on watching all the content now that the assignment is over?
12	Now that you have experienced the brief, the learning processes that had to take place and the time constraints, is there anything that you wish was demonstrated in the face-to-face contact time.
13	Did the blended learning delivery appeal to you? Do you enjoy digital content?
14	What is the value of the sampling process? Do you find it valuable?
15	Do you feel confident enough in your knowledge to sew a skirt on your own?
16	Was it valuable to you seeing other students' processes in their reflective videos?
17	Did you collaborate with one another, work together and ask each other questions or did you work by yourself?

REFLECTION GUIDELINE – PROJECT TWO

Discussion Guideline	
1	Looking back on the blended learning approach, how do you feel about it now?
2	How did you feel about the layout of the Google Classroom?
3	Were there too many headings or categories or too few?
4	Did you like that the processes were presented as single pieces of information rather than of a finished garment, like in the skirts? Was it easier for you to apply it to your context?
5	Were you able to follow along with the videos? Was the pace too fast or too slow?
6	Did the videos clearly explain the processes that you needed to follow?
7	Did you source other videos or content to complete your shirt?
8	Could you see the demonstration clearly in the video?
9	Were there any parts of the videos that you felt did not work?
10	Was there anything related to the videos or Google Classroom that you felt worked very well?
11	Did you watch all the content or only the content that you felt was relevant to your shirt? Do you intend on watching all the content now that the assignment is over?
12	Did you enjoy the live demonstrations? Did they give you the confidence for the online homework?
13	Now that you have experienced the brief, the learning processes that had to take place and the time constraints, is there anything that you wish was demonstrated in the face-to-face contact time.
14	Did the blended learning delivery appeal to you? Do you enjoy digital content?
15	What is the value of the sampling process? Do you find it valuable?
16	Do you feel confident enough in your knowledge to sew a shirt on your own?

17	Did you enjoy the collaboration with one another (speed dating), did you learn anything new from your peers?
18	Was it valuable to you seeing other students' processes in their reflective videos?

APPENDIX F: ANALYSIS REPORTS FOR BLC MODELS

PROJECT ONE – ANALYSIS REPORT AND SUMMARY

1) Pre-Analysis Report
1.1) Analysis of learner's characteristics:
The cohort's *prior* pattern-making *knowledge* included a basic understanding of pattern manipulation techniques, added fullness and dart manipulation with regards to skirts. The students also had experience in basic garment construction skills or processes including seams, pleats, tucks, gathers, hems, patch pockets and overlocking. The students *learning style* and *learning preference* was limited to their experience. Previously, they had only been exposed to a teacher-centred approach to learning. The researcher had conducted hands on demonstrations during the face-to-face contact time, guiding the students step-by-step through the learning process. Their homework time was spent completing the work they did not complete during the contact time. The students did engage during the face-to-face contact time and were willing to ask questions.

1.2) Analysis of learning objects (knowledge taxonomy), in terms of defining what should be taught based on knowledge taxonomy:
Design Phase - Specification Sheets: • Technical drawings • Annotations • Fabric samples • Trim samples • The construction process document
Pattern making *(what has not been covered)*: • Patch pocket drill holes • Belt loop pattern • Waistband pattern • Notches (the importance thereof) • Laying pattern pieces • Cutting • Fabric marking
Garment construction *(what has not been covered)*: • Sewing darts and panel lines • Zips (lapped, invisible, exposed, open ended) • Fusible interlinings • Waistbands (straight and shaped) • Facing (machine finishing and hand slip stitch finishing)

- Vent and slits
- Hemming (blind hem, rolled hem, double turned up hem, pin hem)
- Belt (bagging and hand slip stitch)
- Order of assembly
- Professional finishing (pressing, clipping lose threads, hook and eye)

1.3) Analysis of the blended learning environment:
Google Classroom features: • Create class announcements • Schedule posts • Respond to student's posts • Create assignments • Create questions • Use topics to organize classroom • Arrange classroom in the desired order • Upload videos • Add links • Create a class Google Drive file • Create a work-flow schedule with Google Calendar • Invite students to a private class • Google Classroom App

Pre-Analysis Summary

The pre-analysis phase gave insight into the student's previous knowledge and what needed to be taught. This brief was their first experience designing their own unique skirt, making the pattern and finally constructing a garment. The design phase included a specification sheet which provided the students with a roadmap to their design. The students had to design a skirt which was their own creative interpretation of their previous knowledge while trying new design elements which they had not been exposed to. Annotating their technical drawings allowed the students to consider the design details and elements of their garment. This information informed the pattern-making process where they had to draw on their knowledge, reinterpret it and applied it to their design. There were some pattern-making techniques which had not been covered and resources needed to be provided to ensure they had the knowledge needed to fulfil the requirements. Before moving onto the garment construction phase the students needed to be taught how to lay, cut fabric accurately and how to mark pattern landmarks onto their garments. The garment construction knowledge that they had gained was general sewing knowledge obtained through making items rather than garments. This brief exposed them to making a garment to fit a figure and a large number of sewing processes as well as professional finishing practices. The information and content provided to the students was done on the LMS platform of Google Classroom. The features of the LMS allowed the researcher to share information with the students, interact with the students and

to organise the online classroom in an order which reflected the work-flow schedule which was broken down on Google Calendar.

2) Design of activities and resources report

2.1) Overall Design of Blended Learning:

2.1.1*) Learning Unit (Activities) Change in behaviour learning something they did not know:*

- Develop a specification sheet for their own unique design
- Make a skirt pattern which represents unique design.
- Construct a skirt which has:
    a) a waistband or facing,
    b) fabric manipulation,
    c) a zip,
    d) a hem,
    e) and any other desired design features.
- Develop a reflection video during the production process expressing their experiences, demonstrating the construction process and how they problem solved any issues that occurred. Using their knowledge they have obtained to articulate what they have learnt and what skills they have gained.

2.1.2) *Blended learning delivery strategy:*

- Constructivism: Learner-centred.
- LMS: Google Classroom with video content and material giving the students the tools necessary to complete their skirt.
- Flipped Classroom: Going through the content at home and sampling new sewing techniques before class and applying their new skills or knowledge in class. Instead of completing the brief at home for homework it is now done in class. During class, the researcher is a facilitator, helping the students navigate their new knowledge. The student is the keeper of knowledge instead of the lecturer.
- Authentic learning adapted from Herrington, Oliver and Reeves (2002: 4) Ten characteristics of an authentic activity:

	Ten characteristics of an authentic activity	How these characteristics are applied in this study
1	Have real-world relevance.	Several skirts will be purchased from local stores. The skirts will show the professional finish required of them. These completed garments will be used to present the information or learning material to the students.
2	Activities are ill-defined. Requiring students to define the tasks and sub-tasks needed to complete the activity.	Each student will have their own unique design which will result in each student having a unique learning process. The students are required to

		complete a design from which they will produce a pattern, which is then used to cut and construct a garment. The students need to draw on their previous knowledge to create a TD and to construct their pattern. The blended learning classroom will be set up to give the class general skirt information and not tailored information for their individual needs. They will need to navigate the content and establish what is relevant to them.
3	Comprise of complex tasks to be investigated by students over a sustained period of time.	This is the first brief that brings together pattern making and garment construction knowledge to make their own garment. The students have to complete a skirt which they have not done before hence considered a complex task and the brief takes place over three weeks.
4	*Provide an opportunity for students to examine the task from different perspectives, using a variety of resources.*	The students need to approach the task from a variety of different perspectives or 'roles'. The student has to approach the task from a designer's point of view, then as a pattern maker, then as a seamstress. The students also require different resources: design, pattern making and garment construction. The students will then reflect on the task and will share what they have learnt. The students will be exposed to each other's perspectives and experiences.
5	Provide the opportunity for collaboration.	Design elements buddy up system. The student will find a partner who has the same design element and they become each other's sounding board for that process.
6	Provide the opportunity for reflection.	The students will make reflection videos to express what knowledge and skills they have obtained. The students will articulate the processes they have followed.
7	Activities that can be integrated and applied across different disciplines.	Through the development of specification sheets the students will learn the importance of accuracy in their technical drawings and annotations. This knowledge can be applied in their design subject.

8	Activities which are seamlessly integrated with assessment.	Assessment criteria is prescribed, and activities will be developed to align to the assessment criteria.
9	Create polished products which are valuable in their own right rather than as preparation for something else.	The students need to create a professionally finished skirt which is complete and wearable.
10	Allow for competing solutions and diverse outcomes.	Students are encouraged to look at their own garments to see how things are constructed and to make their own decisions on which method to use.

2.1.3) Blended learning support:

- The online classroom:
  a) Must provide students with easy to follow material which covers all aspects related to skirt pattern making and garment construction.
  b) Must have thorough time management guidelines to assist the students in succeeding and managing their time.
- Face-to-face contact time used to facilitate the student's learning.

Develop a reflection video during the production process expressing their experiences, demonstrating the construction process and how they problem solved any issues that occurred. Using their knowledge, they have obtained to articulate what they have learnt and what skills they have gained.

Overall design of blended learning summary

The design of activities and resources stage allowed the researcher to determine how to approach the brief. The learning unit (activity) was broken down into three phases, pattern making, garment construction and a reflection video. During the pattern-making phase the students had to interpret their unique design into a pattern. Developing pattern pieces with pattern landmarks and technical information which would result in their intended design. The second phase, garment construction was the assembly phase, where the pattern pieces were constructed together to form a garment. The final stage involved the development of a reflection video by each student. The students were required to share their unique design and construction experience with their peers. This allowed the students to not only learn from one another but to develop a deeper understanding by recalling the information and articulating their processes, using the new terminology they had learned. This stage covered what needed to be taught while the next stage considered how it should be taught.

The blended learning delivery strategy involved the application of teaching approaches which were covered in the literature review chapter. In this stage,

the researcher determined how these approaches would be applied during this study. As mentioned, the researcher previously used a teacher-centred approach, however, during this study the researcher aligned her approach with the constructivist belief that teaching should be learner-centred. The approach allowed the learner to gain knowledge by constructing their own knowledge. The LMS allowed the students to view video content which the researcher developed herself. The content gave the students the necessary knowledge to complete their garments. The flipped classroom approach assisted the students in constructing their own knowledge. The students were required to gain knowledge through sampling new techniques before class. The face-to-face contact time was used to apply their knowledge during the construction of their garment. This allowed the researcher to facilitate the learning process by helping the students navigate their new knowledge during the face-to-face contact time. During the development of the content and classroom style the researcher considered Herrington, Oliver and Reeves (2002: 4) ten characteristics of an authentic activity. This allowed the researcher to develop a learning environment which reflected real world activities.

The final aspect to the design of blended learning was to consider the support. The researcher had to make considerations for both the online classroom and the face-to-face classroom. The online classroom was arranged into topics to allow for easy navigation through the content.

2.2) Design and development of resources:
2.2.1) *Selecting Contents* a) Skirts showing the following design elements: straight waistband, shaped waistband, facing, exposed zip, lapped zip, invisible zip, open-ended zip, beltloops, belt/tie, patch pocket, gathers, sewing darts, pleats, blind hem, rolled hem, pin hem, double turned up hem. b) Technical Drawings (TD): showcasing the above design elements visually on a technical flat with annotations. c) Specification Sheets: Including a TD, annotations, fabric samples, trim samples, technical details. d) Pattern Making: A recap of the pattern making details that had been covered in the previous term. e) Garment Construction: Covering the above design elements construction processes. f) Professional Finishing: Cover the practice of professional finishing, pressing, clipping threads, garment presentation, swing tags.
2.2.2) Developing cases (All presented as online videos) • Purchased skirts from local stores which showcase numerous design elements associated with skirts. • The content is linked by the purchased skirts. The processes and technical information are presented using the purchased skirts as the reference.

2.2.3) Presenting design and development (All presented as online videos)

a) Skirts: explanations of the design elements on the purchased garments.
b) Technical drawings of the purchased skirts: The information is presented based on the purchased skirts showcasing the technical aspects and annotations associated with those design elements.
c) Specification sheet development: an explanation of what a specification sheet is and what it should include.
d) Pattern Making: pattern development of the above designs, recapping skills already learnt and demonstrating new skills.
e) Garment Construction: Demonstrate construction processes associated with those design elements. Covering stitching, pressing, fusing and finishing.
f) Professional Finishing: demonstrate professional finishing techniques and the final presentation of their skirts.

2.3) Design of unit (activity)

2.3.1) Activity Based Blended Learning Model

2.3.1.1) Leading in

The Lead-in stage is the starting point in the activity design. The objective of this stage is to demonstrate the task to the student. There are four sub-components to this stage:

a) Describe the aims of the task to the students. The students should have an understanding of what they are expected to achieve after the completion of the brief.
b) Show the task by examples. This will let the students have a better understanding of the task.
c) Show resources provided. The students need to be provided with the resources that can be used to complete the task.
d) Make arrangements. The instructional arrangements refer to the general planning for how the course will be carried out.

During this study the four subcomponents were carried out in the following manner:

a) The students were given a written brief document in their semester notes describing the outcomes, assessment criteria and brief requirements. This document was copied and uploaded onto the Google Classroom for the students to refer to.
b) Several skirts were purchased from local stores. These completed garments were used to present the expected level of professional finish required of the students.
c) The resources provided to the students were uploaded onto the Google Classroom organised in categories. The video content recorded by the researcher covers numerous pattern making and

garment construction techniques associated with the construction of skirts. The techniques demonstrated are broken down into steps to reduce the length of the videos and to make it easier for the students to follow along and to repeat the processes during their sampling process. The researcher has broken down each video further by providing time stamps of each step covered in a video. A student is able to jump ahead to a step quickly and easily, speeding up their workflow.

d) The brief was broken down lesson by lesson on the Google Calendar. Each lesson was broken down with the activity for the face-to-face contact time and what they were expected to do for homework in preparation for the following lesson.

2.3.1.2) Planning

The objective of this stage was for the students to define the task for themselves. There are three subcomponents in this stage; define the problem, define the steps and to identify classmates to collaborate with.

During this study the three subcomponents were carried out in the following manner:

a) The students were required to define their own design problem by filling in a specification sheet which included a technical drawing of their unique design, annotations, design details, fabric and trim swatches. During this process they broke down their design by identifying their individual design elements.

b) The students were expected to define their steps. This was done on the specification sheet as well, where they were required to specify their construction or assembly process. The students were provided with several videos which broke down the assembly process for the purchased skirts. The students should have been able to analyse the information provided and extract the relevant information to determine their own unique assembly process.

c) The students needed to identify classmates to collaborate with. Using their design elements, the students needed to find a classmate with the same design element. Together in pairs or as a group they were each other's support system while sampling this design element. This collaboration process was included to help the students feel connected during the online homework process.

2.3.1.3) Acting

The objective of this stage was to deal with the task and to fulfil the task related requirements.

During this study the three subcomponents were carried out in the following manner:

a) The students were required to collect information which was applicable to their task. The video content provided gave general information which the students needed to watch and extract what was relevant to their design.

b) The students needed to carry on with the task by making samples of the construction processes which were relevant to their design. They needed to master new skills before applying them to their garment.
c) The students needed to solve the problem by constructing a professional garment using the knowledge they had gained in the previous subcomponent.

2.3.1.4) Reviewing

The objective of this stage was for the learners to share their newly constructed knowledge with their classmates and their lecturer.

During this study the three subcomponents were carried out in the following manner:

a) The students were required to make presentations. This stage was two-fold, firstly, the students had to present their skirts in a professional manner by pressing their garment, clipping lose threads and hanging it on a hanger with a swing tag. Secondly, they had to record a reflection video and upload it to the LMS. The video allows the students to share their newly acquired knowledge with their peers. In the video they needed to explain their pattern-making process and the pattern-making principals that they had applied, the construction and assembly process and lastly an interesting construction process which they had followed.
b) The students needed to review the process or brief they have just completed. During this stage the students took part in one-on-one interviews with a third party to answer questions about the processes and their experiences thereof.
c) During this subcomponent the students received feedback from the lecturer. This was done face-to-face during their hand in. The researcher used this as an opportunity to reinforce the design elements other students have included. Ensuring that they were exposed to their classmate's work. Lastly, each student received an assessment sheet with an indicator of their marks as well as written feedback discussing areas where they had done well as well as areas which needed improving.

2.3.2) Definition of performances

Session	Contact time (face-to-face)	Homework (online)
Week 1: Session 1 *(Lesson 1)*	• Brief introduction • Design your own skirt	• Complete questionnaire • Complete style analysis • Complete technical drawing with annotations
Week 1: Session 2 *(Lesson 2)*	• Fabric shopping	

Week 1: Session 3 *(Lesson 3)*	• Master pattern	• Lay and cut patterns • Sample fabric manipulation
Week 2: Session 1 *(Lesson 4)*	• Sew the fabric manipulation on their skirt	• Sample zips: lapped, invisible and exposed • OR sample waistband (whichever comes first in their assembly process
Week 2: Session 2 & 3 *(Lesson 5 & 6)*	• Insert their zip into their skirt • OR sew their waistband on their skirt	• Sample facings and waistbands • OR sample zips: lapped, invisible and exposed
Week 3: Session 1 *(Lesson 7)*	• Sewing the waistband or facing onto the skirt • OR inserting the zip	• Sample hems: blind, rolled and double turned up hem
Week 3: Session 2 *(Lesson 8)*	• Sew the hem on their garment	
Week 3: Session 3 *(Lesson 9)*	• Professional finishing	• Complete reflection video
Week 4: Session 1 *(Lesson 10)*	• Submit garment • Submit reflection video • Take part in interviews	

2.3.3) Activity Objectives

Session	Contact time learning objectives	Homework time learning objectives
Week 1: Session 1 (Lesson 1)	• Demonstrate knowledge to design a skirt that meets the brief requirements. • Demonstrate the ability to design a skirt which they could construct. • Demonstrate the ability to design a skirt which pushes their creative bounds.	• Demonstrate the ability to create an accurate technical drawing with annotations. • Demonstrate the ability to apply their knowledge and to create a style analysis. • Create a style analysis which fulfils their design, containing all the design elements from their skirt.

Week 1: Session 2 (Lesson 2)	• Given that they students have not completed a textile module yet, the students demonstrate the ability to use their general knowledge gained from their own clothes and choose a fabric appropriate for their skirt design. • Demonstrate aesthetic consideration in trim selection.	
Week 1: Session 3 (Lesson 3)	• Demonstrate the ability to create an accurate master pattern which represents their design. • Demonstrate the ability to add all pattern landmarks. • Demonstrate the ability to apply the correct seam allowances based on their design elements i.e. zips, hems.	• Demonstrate the ability to follow a video and to accurately lay pattern pieces which lie on a straight grainline and cut fabric neatly and accurately. • Demonstrate the ability sample their respective fabric manipulation technique.
Week 2: Session 1 (Lesson 4)	• Demonstrate their new fabric manipulation knowledge and apply it during the session to their garment.	• Demonstrate the ability to sample three different types of zip closures. Understanding the different seam allowance requirements and accuracy. • OR to demonstrate the ability to prepare and sew an accurate waistband or facing sample.
Week 2: Session 2 & 3 (Lesson 5 & 6)	• Demonstrate the ability to apply their new zip knowledge and to sew a neat and professional zip and or waistband and facing.	• Demonstrate the ability to prepare and sew and accurate waistband or facing sample. • OR demonstrate the ability to sample three different types of zip closures. Understanding the different seam allowance requirements and accuracy.
Week 3: Session 1 (Lesson 7)	• Demonstrate the ability to apply their new waistband or facing knowledge or to sew a neat and professional zip.	• Demonstrate the ability to sample three different types of hems neatly and professionally. • Demonstrate the ability to prepare the necessary elements needed to complete their garment.

Week 3: Session 2 (Lesson 8)	• Demonstrate the ability to apply their knowledge to their skirt and to create a neat and professional hem.	
Week 3: Session 3 (Lesson 9)	• Demonstrate the ability to prepare the necessary elements needed to complete their garment.	• Demonstrate the ability to record a video using the medium of their choice • Create a polished professional video • Upload a video to YouTube
Week 4: Session 1 (Lesson 10)	• Demonstrate the ability to articulate their new knowledge in terms of: • pattern making process, landmarks and fabric manipulation. • Garment construction assembly process. • One interesting construction process learnt while making their skirt.	

2.3.4) Activity Organization

The researcher recorded her observations using the observation schedule. The schedule was completed via Google Forms after each lesson.

2.3.5) Assessment of Unit

- Reflection Videos to assess their ability to recall their processes and to articulate their knowledge.
- Professionally produced garments.
- Interviews conducted by a third party to assess their opinion of blended learning.
- Researcher's reflections of her observations

Report Summary

The design and development of resources phase and the design of unit (activity) phase were the final steps to develop the blended learning approach. There were five categories of resources or content that needed to be produced. The researcher had to develop a case which would be the link between all the categories of content. In this instance, the researcher drew on the previous section's authentic activity and used the purchased skirts which gave real-world relevance. The purchased skirts showed the professional standard required of the students and gave context to the online content. All the information provided in the videos linked back to the purchased skirts.

The design of unit (activity) stage started off with an additional model, the activity based blended learning model. This gave deeper insight into the online classroom. The four stages, lead-in, planning, acting and reviewing allowed the researcher to consider each aspect centred around the LMS. Not only the researcher roles as lecturer but the student's roles as active participants in their learning process. From here the researcher was able to break down the ten sessions to define the performances of the students for the face-to-face class time and the homework time. The researcher further broke down each session into objectives to establish what learning outcomes there should be after each lesson session or homework session.

The researcher had to establish how she would analyse the activity. This was done through an observation schedule which was set up on Google Forms. After each session the researcher noted her observations by using a set of questions (as seen in Chapter 3). The questions used the activity objectives table to assess the outcomes for each session.

To assess the success of the unit the researcher needed to review the student's videos as well as the professionalism of their final garment. The researcher also needed to review the student's opinions of blended learning by reflecting on their interviews and her own observations.

PROJECT TWO – ANALYSIS REPORT AND SUMMARY

1) Pre-Analysis Report
1.1) Analysis of learner's characteristics:
The cohort's *prior* pattern-making *knowledge* included a basic understanding of bodice pattern manipulation techniques, dart manipulation, pivotal transfer techniques, added fullness, collars, princess style lines and sleeve manipulation. The students had gained experience in project one on basic skirt construction methods and techniques. Their skills or processes included seams, pleats, tucks, gathers, hems, patch pockets, zips, waistbands, facings and overlocking. The students *learning style* and *learning preference* was explored during project one. The students enjoyed a blended learning approach but wanted a combination of face-to-face demonstrations and online video demonstrations.

1.2) Analysis of learning objects (knowledge taxonomy), in terms of defining what should be taught based on knowledge taxonomy:
Design Phase - Specification Sheets: • Technical drawings • Annotations • Fabric samples • Trim samples • The construction process document
Pattern making *(what has not been covered)*: • Plackets • Cuffs • Collars • Pleats
Garment construction *(what has not been covered)*: • Yokes • Pleats • Collars • Plackets • Cuffs • Cuff placket • Hemming (with internal binding)

1.3) Analysis of the blended learning environment:

Google Classroom features:

- Create class announcements
- Schedule posts
- Respond to student's posts
- Create assignments
- Create questions
- Use topics to organize classroom
- Arrange classroom in the desired order
- Upload videos
- Add links
- Create a class Google Drive file
- Create a work-flow schedule with Google Calendar
- Invite students to a private class
- Google Classroom App

Pre-Analysis Summary

The pre-analysis phase clarified the student's previous knowledge, what needed to be taught as well as their learning preferences. This brief was their next sewing brief after project one. During project one the students did not embrace the design phase. Although they created TDs for their designs, they did not develop specification sheets and as such did not use them to guide themselves through the pattern making and garment construction processes. In this project the researcher insisted that the students completed the specification sheets before they proceeded with their projects.

The students had to design a shirt which was their own creative interpretation of their previous knowledge while trying new design elements which they had not yet been exposed to. The TD needed to be accompanied by annotations which expressed the technical details of their design. The students also needed to supply samples of their fabrications and trims on the specification sheets. The design phase led into the pattern-making phase. The students had to draw on their previous knowledge, assess the provided content and reinterpret the knowledge to suit their individual designs. The students had to construct their garment using their previous knowledge and the new content provided to them.

Some of the information and content provided to the students was done on the LMS platform of Google Classroom. The features of the LMS allowed the researcher to share information with the students, interact with the students and to organise the online classroom in an order which reflected the work-flow schedule which was broken down on Google Calendar.

2) Design of activities and resources report
2.1) Overall Design of Blended Learning:

2.1.1*) Learning Unit (Activities) Change in behaviour learning something they did not know:*

- Develop a specification sheet for their own unique design *(the students did not complete this stage fully in project one)*
- Make a shirt pattern which represents their unique design.
- Construct a shirt which has:
    a) a collar,
    b) a placket,
    c) a pocket,
    d) cuffs,
    e) panel lines,
    f) and any other desired design features.
- Develop a reflection video which demonstrates the processes followed, expressing the ways in which they problem solved any issues that occurred. Use the knowledge they have obtained to articulate what they have learnt and what skills they have gained.

2.1.2) *Blended learning delivery strategy:*

Followed the same processes as project one with exception to the following changes:

Authentic learning adapted from Herrington, Oliver and Reeves (2003: 4) Ten characteristics of an authentic activity:

	Ten characteristics of an authentic activity	How these characteristics are applied in this study
1	Have real-world relevance.	The students were required to find a designer or runway image of a shirt that met the criteria. As a class exercise, the students looked at each other's images and identified what features it had. The students had to then analyse the garments and express how one would get in and out of the shirt and cuffs. The students also had to consider what the design details would be on the areas they could not see. This mimicked real world activities where designers were given a design, which they needed to decipher it to make the pattern and to construct the garment.
2	Activities are ill-defined. Requiring students to define the tasks and sub-tasks needed to complete the activity.	During this project the researcher rather presented the design elements as individual details like puzzle pieces. Each student needed to identify which pieces they needed to build their own unique puzzle by identifying design elements and processes which were relevant to their design and using that information to fulfil their design.
3	Comprised of complex tasks to be investigated by students over a sustained	The students needed to design a well-considered shirt which could be translated into a pattern and finally constructed into a

	period of time.	garment. Each section is dependent on the other hence considered a complex task.
4		
5	Provide the opportunity for collaboration.	The researcher established the same buddy up system as before but in addition to this she also included face-to-face contact time collaboration. During each lesson the researcher establish a ten minute "speed dating" exercise. The researcher paired students up with different design elements and gave them five minutes each to explain their design elements and processes to each other. For example, during the collar construction lesson the students showed each other their different collars, identified the names of the collars, the features and the construction methods. This allowed the students to learn from each other but also exposed them to a variety of design elements.
6	Provide the opportunity for reflection.	The students made reflection videos during the construction process explaining and demonstrating their processes and how they problem solved any issues. The students shared the knowledge and skills they had obtained. The students had to articulate the processes they had followed.
7		
8		
9		
10		

2.1.3) Blended learning support:

- The online classroom:
  c) Must provide students with easy to follow content which covers all aspects as individual processes.
  d) Must have thorough time management guidelines to assist the students in succeeding and managing their time.
- Face-to-face contact time used for live demonstrations, facilitation and collaboration through peer consultations.

Overall design of blended learning summary

The design of activities and resources stage followed the layout set out in project one with a few adaptations based on the findings of project one.

The researcher adjusted the approach to the reflection videos by adding in an additional requirement which resulted in the students developing the video through-out the process rather than just at the end as it was previously. Demonstrating the processes that they followed and expressing the ways in which they problem solved any issues that occurred, allowed the students to learn from one another's experiences.

The researcher also adapted some of the authentic learning activities to align with the student's needs and the researcher's assessment of the previous project. By removing the previous project's real-world relevance through purchased skirts (or shirts), the researcher had to adapt a few approaches. The real-world relevance was adjusted and presented as a class exercise during the introductory lesson. Activities needed to be ill-defined, however, previously in project one the content seemed too ill-defined for the students. The students were seeking more tailored content. The researcher gathered in the previous project that the problem may have been due to the content being presented to them in relation to the purchased skirts. The students struggled to extract the relevant information for themselves from the different skirts. The researcher believed this could have been a result of a student having multiple design elements which were found in different skirts. As a result, the researcher chose to present the design elements as individual pieces of content.

The final aspect to the design of blended learning was to consider the support. The researcher adjusted the face-to-face contact time to include hands on demonstrations at the end of the lesson to prepare them for their homework requirements before the following lesson. The researcher has also added the "speed dating" collaboration exercise which she ran for ten minutes during each session to allow the students to share their knowledge with one another.

2.2) Design and development of resources:
2.2.1) *Selecting Contents* a) Shirts showing the following design elements: shirt collar, convertible collar, mandarin collar, grown on placket, separated placket, concealed placket, placket with tuck, yoke, centre back pleat, cuff, cuff one-piece placket, cuff two-piece placket, patch pocket, panel lines and darts. b) Technical Drawings (TD): showcasing the above design elements visually as individual pieces on a variety of technical flats with annotations. c) Pattern Making: A recap of the pattern making details that had been covered and demonstrations of new pattern-making techniques associated with shirts. d) Garment Construction: Covering the above design elements construction processes. e) Professional Finishing: Recapping the practice of professional finishing, pressing, clipping threads, garment presentation, swing tags.

2.2.2) Developing cases (All presented as online videos)

- Presenting the content as puzzle pieces of individual design elements. Allowing the students to see the elements as pieces that can be put together an anyway to create a variety of unique designs.

2.2.3) Presenting design and development (All presented as online videos)

a) Shirts: explanations of the design elements.
b) Technical drawings: of design elements and technical aspects and annotations associated with those design elements.
c) Pattern Making: pattern development of the above designs, recapping skills already learnt and demonstrating new skills.
d) Garment Construction: Demonstrate construction processes associated with those design elements. Covering stitching, pressing, fusing and finishing.
e) Professional Finishing: recap professional finishing techniques and the final presentation of their shirts.

2.3) Design of unit (activity)

2.3.1) Activity Based Blended Learning Model

2.3.1.1) Leading in

The Lead-in stage is the starting point in the activity design. The objective of this stage is to demonstrate the task to the student.

Followed the same processes as project one with exception to the following changes:

a) Same as previous project.
b) The researcher brought in shirts for the introductory lesson allowing the students to see the level of finish expected of them.
c) Same as previous project. However, content was presented as individual elements.
d) Same as previous project.

2.3.1.2) Planning

The objective of this stage was for the students to define the task for themselves. There are three subcomponents in this stage; define the problem, define the steps and to identify classmates to collaborate with.

Followed the same processes as project one with exception to the following changes:

a) *Same as previous project.*
b) *Same as previous project.* However, the information was provided to them as individual elements in this project. The students had to analyse

the information provided and extract the relevant information to determine their own unique assembly process.

c) The students were asked to collaborate in two ways, during the online homework and during the face-to-face contact time. The online homework collaboration was done in the same way as the previous project. During the face-face contact time the researcher identified students who would collaborate with each other on a by lesson basis. The students were required to share their knowledge with their classmates.

2.3.1.3) Acting

The objective of this stage was to deal with the task and to fulfil the task related requirements.

Followed the same processes as project one with exception to the following changes:

a) The students were required to collect information which was applicable to their task. The video content provided was presented as individual design elements. The students needed to identify what was applicable to them for their unique design.
b) Same as previous project.
c) Same as previous project.

2.3.1.4) Reviewing

The objective of this stage was for the learners to share their newly constructed knowledge with their classmates and their lecturer.

Followed the same processes as project one with exception to the following changes:

a) *Same as previous project.* However, the students also had to complete a video which demonstrated the processes they followed while they were constructing their garment.
b) *Same as previous project*.
c) *Same as previous project*.
d) In addition, the students had to share their newfound knowledge with their classmates by teaching each other about design elements they did not have.

2.3.2) Definition of performances

Session	Contact time (face-to-face)	Homework (online)
Week 1: Session 1 *(Lesson 1)*	• Brief introduction • In class exercise discussing designer or runway images • Refinement of design	• Complete questionnaire • Complete style analysis • Complete spec sheet

Week 1: Session 2 *(Lesson 2)*	• Style analysis class review • Spec sheet review • Begin master pattern	
Week 1: Session 3 *(Lesson 3)*	• Master pattern completion • Speed dating exercise: pattern making principles • Live placket demonstration	• Lay and cut fabric • Sample placket • Sample yoke and pleats • Film a one-minute reflection video
Week 2: Session 1 *(Lesson 4)*	• Sew placket • Sew patch pocket • Live sleeve insertion demonstration	• Sample cuff placket • Sample inserting a sleeve • Sample Hem • Film a one-minute reflection video
Week 2: Session 2 *(Lesson 5)*	• Speed dating exercise on placket pattern and construction • Assemble garment (panel lines, yoke, pleats, side seams and shoulder seams)	
Week 2: Session 3 *(Lesson 6)*	• Sew cuff placket • Sew and insert sleeves • Hem the garment	• Sample collar • Film a one-minute reflection video
Week 3: Session 1 *(Lesson 7)*	• Sew collar • Live cuff demonstration	• Sample cuff • Film a one-minute reflection video
Week 3: Session 2 *(Lesson 8)*	• Speed dating exercise on collar pattern and construction • Sew cuff • Live demonstration sewing on a button	
Week 3: Session 3 *(Lesson 9)*	• Professional finishing	• Complete reflection video
Week 4: Session 1 *(Lesson 10)*	• Submit garment • Submit reflection video • Take part in interviews	

2.3.3) Activity Objectives

Session	Contact time learning objectives	Homework learning objectives
Week 1: Session 1 (Lesson 1)	• Demonstrate the ability to analyse designs and identify design elements of a shirt. • Demonstrate the understanding of how a shirt functions. • Demonstrate knowledge to design a shirt that meets the brief requirements. • Demonstrate the ability to design a shirt which they could construct. • Demonstrate the ability to design a shirt which pushes their creative bounds.	• Demonstrate the ability to create an accurate technical drawing with annotations. • Demonstrate the ability to apply their knowledge and to create a style analysis. • Create a style analysis which fulfils their design, containing all the design elements from their shirt.
Week 1: Session 2 (Lesson 2)	• Demonstrate the ability to handle critique maturely and apply the critique to their style analysis. • Demonstrate the ability to create a master pattern from their style analysis.	
Week 1: Session 3 (Lesson 3)	• Demonstrate the ability to create an accurate master pattern which represents their design. • Demonstrate the ability to add all pattern landmarks. • Demonstrate the ability to apply the correct seam allowances based on their design.	• Demonstrate the ability to lay pattern pieces and cut their fabric accurately. • Demonstrate the ability sample a placket. • Demonstrate the ability to sample a yoke and pleats. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.
Week 2: Session 1 (Lesson 4)	• Demonstrate their ability to apply their knowledge of the placket to their garment. • Demonstrate the ability to draw on their previous knowledge to sew a patch pocket.	• Demonstrate the ability to sample a cuff placket. • Demonstrate the ability to insert a sleeve into an armhole • Demonstrate the ability to sample an internally bound hem. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that

		have occurred and solutions that have been found.
Week 2: Session 2 (Lesson 5)	• Demonstrate the ability to apply their knowledge by assembling a garment with panel lines, yokes, pleats, side seams and shoulder seams.	
Week 2: Session 3 (Lesson 6)	• Demonstrate the ability to apply their new knowledge on cuff plackets to their garment. • Demonstrate the ability to apply their new knowledge and to insert their sleeves into their garment. • Demonstrate the ability to apply their new knowledge on hems to their garment.	• Demonstrate the ability to sample a collar. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.
Week 3: Session 1 (Lesson 7)	• Demonstrate the ability to apply their new collar knowledge to their garment.	• Demonstrate the ability to sample a cuff. • Demonstrate the ability to reflect on the processes followed so far, articulating the process and problems that have occurred and solutions that have been found.
Week 3: Session 2 (Lesson 8)	• Demonstrate the ability to apply their new cuff knowledge to their garment.	
Week 3: Session 3 (Lesson 9)	• Demonstrate the ability to prepare the necessary elements needed to complete their garment.	• Demonstrate the ability to record a video using the medium of their choice • Create a polished professional video • Upload a video to YouTube
Week 4: Session 1 (Lesson 10)	• Demonstrate the ability to articulate their new knowledge in terms of: • pattern making process, landmarks and fabric manipulation. • Garment construction assembly process. • One interesting construction process learnt while making their skirt.	

2.3.4) Activity Organization
The researcher recorded her observations using the observation schedule. The schedule was completed via Google Forms after each lesson.
2.3.5) Assessment of Unit
• Reflection videos: to assess their ability to problem solve and their ability to articulate their new knowledge. • Professionally produced garments. • Interviews conducted by a third party to assess their opinion of blended learning. • Researcher’s reflections of her observations

APPENDIX G: OBSERVATION, QUESTIONNAIRE, INTERVIEW AND REFLECTION RESPONSES

OBSERVATION SCHEDULE ANSWERS – PROJECT ONE

Questions were answered at the end of every lesson (Each brief had 10 sessions)

1. What is the students' response to the online content?	
Week 1: Session 1	Positive and enthusiastic
Week 1: Session 2	They did not engage and re-watch the content for technical information. They designed out of their heads and it resulted in inaccurate technical drawings.
Week 1: Session 3	Most of them did not watch the online content for homework. When I made them watch it in class, they did engage with it and were able to remind themselves of skirt pattern making skills.
Week 2: Session 1	Poor, most did not watch the content.
Week 2: Session 2 & 3	More positive this lesson. The students were using the online content to fulfil their assignment.
Week 3: Session 1	It seems better this lesson. The students have made progress.
Week 3: Session 2 & 3	More positive this lesson. They have engaged with the content and are applying what they have learned.
Week 4: Session 1	More positive as they had to use the online content to finish their garment and to meet today's deadline.
2. How prepared are the students for the lesson?	
Week 1: Session 1	N/A No preparation was required for this lesson as it was the first lesson for this brief.
Week 1: Session 2	They were not prepared. Although they had emailed me their designs the evening before they had not made corrections. They had not filled in their spec sheets and therefore did not bring them shopping with them.

Week 1: Session 3	None of them had completed their style analysis as their homework had required.
Week 2: Session 1	6 out of 7 were not prepared at all. I had to leave them for an hour to catch up and used the remaining 45 minutes to facilitate their learning.
Week 2: Session 2 & 3	They were still not up to date with their homework and resulted in them not being ready to complete the lessons objectives. They were however trying to catch up. They still did not have their completed spec sheets. Some students were still sampling in class rather than sewing their skirts in class.
Week 3: Session 1	Still not where they needed to be based on the calendar and lesson objectives.
Week 3: Session 2 & 3	Still not at the point where they should be based on the calendar, but a large amount of progress has been made and they are able to work on their own with their new knowledge.
Week 4: Session 1	Everyone was ready to submit their garments but only 3 out of 7 students had completed their reflection videos.

3. What is the students' attendance like?

Week 1: Session 1	All 7 present
Week 1: Session 2	6 Present, 1 absent
Week 1: Session 3	6 Present, 1 absent
Week 2: Session 1	6 present- 1 absent
Week 2: Session 2 & 3	All 7 present
Week 3: Session 1	5 present, 2 absent

Week 3: Session 2 & 3	6 present, 1 absent
Week 4: Session 1	All 7 present

4. What evidence have the students shown that they are competent in the objectives set by the online content?

Week 1: Session 1	N/A
Week 1: Session 2	Very little. They had designed skirts but all of them had corrections to complete before the lesson. They did not have their spec sheets with them.
Week 1: Session 3	They have not shown competence because they did not complete their homework.
Week 2: Session 1	one student was able to complete her fabric manipulation on her own, I was able to step in and show her a few corrections but overall, she could implement it on her own. The other 6 showed no competence because they had not sampled fabric manipulation yet. A few completed their sampling during the lesson but did not have time to apply it to their skirts during the lesson.
Week 2: Session 2 & 3	At this point the students are still looking for hand holding. Although they were watching the online content and sampling, they still wanted to be told what to do. I referred them to the online content and their sampling and told them to do the same process on their garments. 5 out of 7 students were able to apply themselves when they were not given the option of being told exactly what to do. 2 of the students were unable to follow the videos and to sample what they were watching. One of the students is not interested in engaging with the learning process, she was absent for a week and has made no effort to catch up. The other student struggles to understand the processes involved in sewing and struggles to follow instruction whether face-to-face on via video content.
Week 3: Session 1	• Blake was able to sew her skirt together and hem her skirt on her own. • Harley was able to sew her skirt together.

	• Hayden was able to sew his belt, facing and D-rings. • Parker was able to box her facing and blind hem her skirt by only using the online content. • Sawyer showed no competence in the objectives that were set.
Week 3: Session 2 & 3	They have not met the lesson objective and are still catching up on the work they have fallen behind in. They are able to apply their knowledge based on what they have learned from the online content. • Amari showed no competence in the objectives that were set. • Blake has completed a neat and professional invisible zip, has closed her straight waistband neatly with a sunken stitch. She watched the hook and eye video in class and was able to complete her skirt within the given time. • Harley had inserted an exposed zip successfully. • Hayden was unprepared for the lesson and used the lesson time to do his homework. • Jordan showed no competence in the objectives that were set. • Parker Had completed her blind hem neatly and accurately. She proceeded to complete her facing with hanger loops neatly.
Week 4: Session 1	• Amari had completed her skirt in a professional manner. She filmed a reflection video and uploaded it to the Google Classroom. • Blake had completed her skirt within the lesson sessions and handed in a neat and professionally finished garment. She filmed a reflection video and uploaded it to the Google Classroom. • Parker had handed in a completed skirt but did not complete her reflection video. • Harley had handed in a completed skirt but did not complete her reflection video. • Hayden had handed in a completed skirt. He filmed a reflection video and uploaded it to the Google Classroom. • Jordan handed in a skirt but did not complete her reflection video. • Sawyer handed in a skirt but did not complete her reflection video.

5. What evidence have the students shown that they have not achieved the objectives to a desirable standard?

Week 1: Session 1	N/A
Week 1: Session 2	They had not done their spec sheets and therefore had not made full design considerations.
Week 1: Session 3	Their style analysis was incomplete which meant they fell behind in completing their master pattern which was supposed to be completed during the lesson. Some students showed little confidence in applying their pattern-making knowledge however, these students also did not watch the online content, they did not gain knowledge prior to the lesson.
Week 2: Session 1	6 out of 7 had not done their homework.
Week 2: Session 2 & 3	• Amari was not sewing and then pressing. She would sew a section and then stop rather than finishing with pressing. She was watching the video content but not sampling. She asked if I could "just show her how to do it" I referred her back to the videos and made her do a sample. While sampling I intervened to correct her slip stitch techniques. • Blake did a very small gathers sample and did not sample gathers on a curve and how to overlock on a curve. As a result, she cut her skirt on the over locker three times. Once she used the basting techniques learnt in the dart video, she was able to overlock without catching her garment. • Harley did a quick sample of her slits but when it came to sew and applying this knowledge she struggled. Step one she sewed too far, and I helped her problem solve but when it came to pressing and turning up 5mm seam she ironed up 8mm. When I explained to her where she had gone wrong and how to correct it, she was able to do so. • Hayden, although he said he had watched the videos, he was not working in circles and he overlocked all the raw edges before beginning. There was no content which made mention to overlocking all the edges first. He was not sampling and as a result he treated his garment as the sample. He sewed his belt incorrectly and had to restart and he sewed his facing on incorrectly. Because he had not sampled anything, he had to sew his facing three times. Each time he tried; he made a new mistake.

	• Jordan was unable to lay right sides together, as a result she first sewed her invisible zip to the outside of her sample and used the invisible zipper foot as a normal foot, resulting in a fuller exposed zip. Nor did she prepare a seam for the zip to go into, rather she just cut a slit. I sat with her at the sewing machine with the video playing and asked her to show me what is happening on the video. And to make her sample look like mine. She could not identify the right and the wrong side of the invisible zipper nor her fabric, so she was unable to put right sides together. She said she watched the video which explains the different types of zips, but she did not gain any knowledge from watching the video. With a lot of assistance, she was able to sample one side. When I asked her to repeat it on the other side she could not. When sewing a dart, she sewed a pleat instead, again when asked if she had samples one, she said yes. It was clear she had not sampled it. When she eventually sewed the dart, she did not use her drill hole and sewed an 8-inch dart instead of an 8cm dart. • Parker said she had watched the pattern making videos but still did not understand the importance of notches. As a result she could not line up her asymmetrical wrap skirt. Without a spec sheet it was very difficult to assist the student. • Sawyer had not watched the pattern videos nor the cutting and laying videos. Her patterns had no grainlines nor information and she cut her asymmetric panel with ride side down instead of right side up. When laying right sides together she kept laying right to wrong side. She did this several times.
Week 3: Session 1	• Blake sewed on a completed waistband before inserting her zip. She had to unpick it and start again so that she could sew her zip in. Her zip notch was in the wrong place, she did not take into account the width of her waistband. • Parker inserted her zip right up to seam allowance leaving no space to sew her facing on even though she sampled the zip leaving the seam allowance and the online content mentioning how important it is. • Harley tried to do her gathers but tried to baste her gathers in place which did not work. She restarted her gathers but did not consider how much she should have gathered her skirt. I explained to her

	that she needed to measure the piece the gathers had to fit into- her waistband. Once she realised it had to go into her waistband, she started preparing the waistband. • Hayden sewed all his seams as open seams and as a result had to unpick his overlocking to correct his seams. He hemmed his skirt with the wrong type of hem for his flare and resulted in an uneven, untidy hem. He again did not sample it and he has not been sewing in circles. Again, he did not watch the videos which explains hemming, and when it happens in the assembly process. • Sawyer did not watch any online content and did not do anything this lesson except for overlocking her facing. She was unable to articulate the difference between a closed seam and an open seam.
Week 3: Session 2 & 3	• Amari, although she had sampled an exposed zip, she inserted her zip to the edge of her seam allowance on her skirt, leaving no room to sew on her facing. She had to move her zip down and was unable to sew her zip closed at the bottom due to the metal teeth being in the way. She also used the incorrect single toe zipper foot resulting in her edge stitch being a foot stitch. She did not watch the video on rolled hems and rather asked a third year how to do it. The result was not what the video showed. She also did not prepare for the lesson and had not sampled her elements. During the lesson she watched the videos and applied what she was learning directly to her garment. • Blake did not sample a slip stitch and was resistant to watching the online content and sampling one. She sampled it and I was able to correct her stitching before she sewed her waistband down. • Harley had not pressed her garment at all during the construction process and was resistant towards the idea of pressing it before inserting the waistband. She did not finish her skirt by the end of the lesson. • Hayden did not sample his waistband and as a result prepared and cut it incorrectly. The waistband did not fit his garment and the processes he followed were long winded because he skipped the sampling stage. In class he sampled the lapped zip although he was confusing the lapped zip processes with the exposed zip processes. His final insertion of the zip looked nothing like his sample. In trying to do things too quickly he made more work for himself by having to redo elements several

	times. He did not complete his skirt by the end of the lesson. • Jordon ripped her darts while unpicking and rather than sewing 1cm wide darts increased her darts to 3cm wide darts. This resulted in her skirt being too small to fit her fitted waistband. She was unable to watch the video and follow along which meant she did not sample anything and used her garment as the sample. Rather than sewing her waistband and interlining separately in circles, then together and then to the skirt she sewed segments together and attached them to the skirt in pieces trying to figure out how to make it fit. In the end her waistband did not lie flat at all and she missed the stay stitch step. She also did not press her garment at any point. She did not complete her skirt in the lesson. • Parker as prepared for class but worked too slowly to complete her garment.
Week 4: Session 1	• Amari, no evidence. • Blake, no evidence. • Harley did her top stitching on her waistband was done with the inside of her garment facing her while closing the waistband. Although her internal seam was straight the outside seam was very skew. Little evidence that she had sampled a waistband before sewing. Her exposed zip was black and her stitch thread white. She did not change her bobbin thread to match her zip. • Hayden did not sew in a hook and eye. His zip was inserted differently to his sample and the zip was sewn skew revealing the zip teeth. His waistband stay stitch was unevenly stitched which resulted in holes in his waistband closure. • Jordan did not press her skirt at all. The invisible zip was inserted after the shaped waistband was inserted which resulted in raw edges being visible under the zip, no overlocking. The zip was sewn incorrectly so the zip teeth were visible on the outside of the skirt. The zip was longer than she needed so the teeth were forced over the top edge and sewed down in the raw seam left on the inside. The hem was not pressed which resulted in an uneven seam line alone the hem with points and pleats. She could not follow the blind hem video and rather did her own style stitch every 2cm along. She did not submit a reflection video nor could she talk about the processes which she followed.

	• Parker did not watch the slip stitch video to finish off her facing rather did a blind hem stitch to close it off. She did not seek further information rather assumed the blind hem stitch would be the stitch to use. • Sawyer caught a seam on her wrap and instead of unpicking it she left it there. She was absent during the pattern-making week and the final session. Her back facing included the dart suppression and because she was so behind every lesson, I never had an opportunity to facilitate her while producing a skirt. She only did her facing on her wrap and made two straps during the lesson time provided for this skirt. In problem solving the now too big facing she tucked in the excess and the bulk made her sew her wrap lower, which resulted in the hem on the wrap panel being longer than the side seam. She proceeded to tuck the excess under and catch it into her hem. It has resulted in untidy bulk. It does not seem like she sampled the zip at all. For her exposed zip she cut the tape at the top of the zip off instead of tucking it under the facing like the videos demonstrate.

6. What is the students' engagement like during the lesson?

Week 1: Session 1	A bit distracted, some students went ahead and started designing before all the content was presented to them.
Week 1: Session 2	Positive, focused on selecting a fabric they liked and one that fulfils the brief requirements.
Week 1: Session 3	They were engaged and worked hard on trying to complete as much as possible during the lesson.
Week 2: Session 1	Disengaged and panicked due to their lack of preparation.
Week 2: Session 2 & 3	They were engaged
Week 3: Session 1	4 out of 5 students worked hard during the lesson. One student had no interest in learning nor engaging.
Week 3: Session 2 & 3	They were engaged but stressed because they were behind.
Week 4: Session 1	They were in high spirits because they were handing in.

7. What areas are the students disengaging with?	
Week 1: Session 1	Watching the videos as a class. It would possibly have worked better had they each watched the content on their own.
Week 1: Session 2	The amount of homework.
Week 1: Session 3	The homework.
Week 2: Session 1	Homework.
Week 2: Session 2 & 3	Homework- watching the videos and sampling.
Week 3: Session 1	I still believe the amount of homework because they have not caught up yet.
Week 3: Session 2 & 3	Homework and the value of sampling.
Week 4: Session 1	They did not do their reflection videos.

8. How are the students able to apply the knowledge gained from the online content during the lesson?	
Week 1: Session 1	The students were able to start to design a garment which fulfilled the brief requirements.
Week 1: Session 2	It seemed like they were able to make better fabric selection decisions because we watched the skirt videos in class.
Week 1: Session 3	This lesson was hard to judge as most of them did not engage in the online content and therefore had little knowledge to apply to their pattern.
Week 2: Session 1	The one student showed confidence in her new skill set. She went ahead on her own and completed what was required of her. She worked consistently in the lesson and finished her darts and moved on to the next step, facing.

Week 2: Session 2 & 3	They are managing to complete processes on their skirts without me telling them what to do which means they are able to apply it.
Week 3: Session 1	Most of the students worked in class and were able to complete processes with little assistance.
Week 3: Session 2 & 3	Majority of them are able to apply it with little assistant. A few students are resisting the process of pre-gaining knowledge before class and applying it in class. One student is unable to obtain knowledge from the video content nor is she able to apply it.
Week 4: Session 1	We watched the reflection videos during the lesson, the students who did the video were able to articulate the processes they had followed and use some new terminology. The students who did not record a video were asked to do an impromptu presentation, they were not able to articulate themselves very well, nor could they remember the processes they had followed.

9. What kind of progress have the students shown from the previous lesson?

Week 1: Session 1	N/A
Week 1: Session 2	A lack of sufficient progress as they did not complete their homework.
Week 1: Session 3	Their design is starting to come to life from design to pattern.
Week 2: Session 1	They had worked on their master patterns. They still had to cut and sample. Insufficient progress was made.
Week 2: Session 2 & 3	Some had sampled and sewn their fabric manipulation. Not enough progress was made through for them to align with the calendars' requirements.
Week 3: Session 1	Most of the students have a skirt with seams which has been sewn together.
Week 3: Session 2 & 3	They have made progress. They have inserted their zips and are working on finishing their zips and waistbands.

Week 4: Session 1	They completed their skirts for homework.

10. Are the students showing steady growth in their knowledge?

Week 1: Session 1	N/A
Week 1: Session 2	At this point no.
Week 1: Session 3	Not at this point.
Week 2: Session 1	1 out of 7 has. But majority have shown no new knowledge.
Week 2: Session 2 & 3	I think so. With the little bit that they have sewn they are able to articulate what they are doing.
Week 3: Session 1	The students are able to articulate themselves and apply their knowledge with little assistance.
Week 3: Session 2 & 3	There has been growth, I would not define it as steady growth but there has been more growth this week than in the previous week.
Week 4: Session 1	Most of them who had to complete elements on their own were not able to apply their knowledge accurately.

11. Are the students showing steady growth in their skill set?

Week 1: Session 1	N/A
Week 1: Session 2	At this point no.
Week 1: Session 3	Not at this point.
Week 2: Session 1	1 out of 7 has. But majority have shown no evidence of new skills.
Week 2: Session 2 & 3	I think so. Some are able to sew their fabric manipulation neatly.

Week 3: Session 1	They seem to be improving.
Week 3: Session 2 & 3	Some students are and they are improving their skillset. Others are resistant of sampling and are only sampling certain things. They seem to sew some things quite well and then the next process really badly. There is little consistency.
Week 4: Session 1	The processes completed for homework without facilitation were not up to standard. All of the students made some kind of mistake during the processes.

12. Are there any short comings in the online content?

Week 1: Session 1	N/A
Week 1: Session 2	Yes, I need to add assembly process videos to give them insight into some of the purchased skirts assembly processes. They would need to extract the relevant content for themselves.
Week 1: Session 3	Not at this point.
Week 2: Session 1	Not at this point
Week 2: Session 2 & 3	A student needed to do a mitred corner on her facing. I did not have a video on how to mitre a corner. How to unpick over locking.
Week 3: Session 1	Although we covered gathers in a previous assignment, a gathering video would have been helpful as a recap for the students with gathers on their skirt.
Week 3: Session 2 & 3	The finishing of the facing by tacking it down should have been a separate video rather than combined with the hanger loop insertion. The hanger loop insertion happens too early on in the process for them to realise the importance of stitching the facing down. No students with facing had done this step.
Week 4: Session 1	No.

13. What kind of problems have arisen during the lesson?

Week 1: Session 1	N/A
Week 1: Session 2	The students do not know the difference between polyester fabrics and cotton fabrics, given they have not completed their textile module yet.
Week 1: Session 3	The students are still writing information on their style analysis even though it should only be on master pattern. Those who have done so have not engaged with the online content.
Week 2: Session 1	A lack of homework is making the students be unprepared for the lesson which means the flipped classroom cannot work. They have not come to class with knowledge which means they cannot use the face-to-face contact time as they should be. Instead they are using it to do their homework and using their homework time to do their class work.
Week 2: Session 2 & 3	The only problem is that they are behind with their timeline
Week 3: Session 1	None
Week 3: Session 2 & 3	There are some students who come to me and ask me to teach them the next step rather than watching the video content because they feel it is easier that way. They have not done their homework and are not prepared and feel overwhelmed and unsure. I have to force them to watch the content, try it out and then come to me with questions.
Week 4: Session 1	The students did not complete what was required of them. This could be because the video only formed part of a low valued mark.

14. What learning needs need to be addressed?

Week 1: Session 1	N/A
Week 1: Session 2	Technical drawing annotations and technical details need work. Written feedback has been given to each student but at this point they have not made the corrections.

Week 1: Session 3	Pattern information problems. Knowing what to write on each piece.
Week 2: Session 1	Pressing needs to be addressed.
Week 2: Session 2 & 3	None this lesson.
Week 3: Session 1	None.
Week 3: Session 2 & 3	I need to work on explaining the value of sampling and the value in doing homework. Perhaps explain the concept of lifelong learning.
Week 4: Session 1	The importance of pattern accuracy and that students cannot make their garments smaller in areas which they feel is appropriate to make a garment fit themselves. Two students adjusted their waistbands to make the skirt fit themselves (not a requirement) but it resulted in the hip area bulging because it had not been taken in correctly in all the right places.

15. Additional comment

Week 1: Session 1	
Week 1: Session 2	Were they able to select aesthetically appealing trims: In most part yes, a select few needed more guidance than others.
Week 1: Session 3	One student has not engaged in any content yet nor has she attended class since receiving this brief.
Week 2: Session 1	
Week 2: Session 2 & 3	A student said she finds the content confusing as it was not well defined for her specific needs. She struggled to navigate the knowledge to extract what was relevant to her personal design. When asked how many videos she had watched at this point, she admitted to only watching 6 so far. Instead of watching the videos to explore its relevance she was stuck looking at the title. She also mentioned that she preferred being taught step by step exactly what to do. She preferred the

	teacher-centred environment rather than the student-centred.
Week 3: Session 1	A student asked to just be shown what to do. She wanted to be taught exactly what to do rather than learning from the online content and applying her knowledge. A student asked if we are still doing the video thing. She has not made use of the online classroom at all and in turn does not know what is going on and what is required of her.
Week 3: Session 2 & 3	A student has expressed to me that "it's easier" if I just show her what to do. She prefers the teacher-centred way of learning from the previous brief.
Week 4: Session 1	

OBSERVATION SCHEDULE ANSWERS – PROJECT TWO

Questions were answered at the end of every lesson (Each brief had 10 sessions)

1. What is the students' response to the online content?	
Week 1: Session 1	N/A
Week 1: Session 2 & 3	Many of the students did not watch the online content.
Week 2: Session 1	This lesson was a bit of a mix up. The students used the online content to prepare for the wrong lecture. A student posted a screen shot of the calendar to their What's app group. Unfortunately the student posted the wrong day. None of the other students checked the calendar and all followed the students post instead of using the LMS which they all had access to.
Week 2: Session 2 & 3	The students were engaging, they had sampled processes.
Week 3: Session 1	The students were engaging, they were using the content to gain knowledge.
Week 3: Session 2 & 3	Good, they were using it to guide them without any complaints or resistance.
Week 4: Session 1	The students were very positive and enthusiastic.

2. How prepared are the students for the lesson?	
Week 1: Session 1	The students came to class with their Spec sheets ready but only two students came to class with their fabric.
Week 1: Session 2 & 3	The students were underprepared. They had not completed their style analysis for review at the start of the lesson. Many students came with questions which was covered by the online content. When asked if they had watched the videos, they said no. The researcher directed them to the video content to get their answers.
Week 2: Session 1	The students were not prepared at all for the lesson.

Week 2: Session 2 & 3	They had fallen behind from the previous lesson, so they were no longer on track with the workflow schedule.
Week 3: Session 1	More prepared but still not up to date with the workflow schedule.
Week 3: Session 2 & 3	Better, still not up to date with the workflow schedule.
Week 4: Session 1	The students had completed their patterns and garments however only three students had filmed their reflection videos.

3. What is the students' attendance like?

Week 1: Session 1	6 present, 1 absent.
Week 1: Session 2 & 3	6 present, 1 absent.
Week 2: Session 1	5 present, 2 absent.
Week 2: Session 2 & 3	6 present, 1 absent.
Week 3: Session 1	6 present, 1 absent.
Week 3: Session 2 & 3	6 present, 1 absent.
Week 4: Session 1	All present.

4. What evidence have the students shown that they are competent in the objectives set by the online content?

Week 1: Session 1	The students were able to produce a digital technical drawing with most of the shirt details they needed.
Week 1: Session 2 & 3	They were able to make a placket pattern.

Week 2: Session 1	No evidence. Their fabric, however, was cut. three students had cut 2 X lefts instead of a left and right pair.
Week 2: Session 2 & 3	They were behind. • Amari was able to sew a concealed placket and grown on, on her own. • Blake was able to sew her separate placket by herself. • Harley was able to sew a grown-on placket by herself. • Jordon showed no evidence. • Parker was able to sew her separate placket.
Week 3: Session 1	• Amari had sewn her garment together and was able to sew her pocket on. • Blake had sewn her CB pleats, back yoke, side seams and pocket, she had also sampled her sleeve, cuff and peplum. • Hayden showed no evidence • Harley had sewn her back yoke. • Jordan Showed no evidence • Parker had worked hard. She was on track with the workflow schedule. Her placket with gathered trim had been inserted. She sewed her pocket on, had sewn her yoke, side seams. She was working on her sleeves.
Week 3: Session 2 & 3	• Amari understood how to insert her sleeve and managed to insert one. • Blake completed her sleeve and cuff insertion. Harley: managed to attach her sleeves and cuffs with little assistance. • Jordan did not check her right and wrong sides, so she sewed the wrong side facing out on her CB and in turn sewed her yoke on backwards. She was unable to correct her yoke but corrected her CB. • Parker sewed her sleeve placket and cuff. • Sawyer first lesson she had attended. She was working on her own and seemed to be able to apply her knowledge, she shared her knowledge with Jordan.
Week 4: Session 1	They were able to hand in a completed pattern and garment.

5. What evidence have the students shown that they have not achieved the objectives to a desirable standard?	
Week 1: Session 1	The students' annotations need work.
Week 1: Session 2 & 3	They were unable to make their collars, sleeves, cuffs, patch pockets and did not know what to do with their darts. Again, all this information was available on the Google Classroom.
Week 2: Session 1	They were not prepared for the lesson.
Week 2: Session 2 & 3	• Blake sewed two left sides instead of a left and a right, this was due to her cutting her fabric incorrectly. She also used permanent marker to mark her fuse instead of chalk. As a result the chalk showed through her placket. • Hayden was so far behind, he still had not cut his fabric. He did not have the confidence to cut his design by himself, unlike the other students. • Harley sewed two rights, twice. She did not make a left and right pattern as I had demonstrated and advised. She needed to flip her pattern, when she had finally cut it correctly, she sewed it upside down and again had a right. She had to unpick and rescue that piece of fabric as she did not have any more fabric to recut. • Jordan's placket pattern had been done incorrectly, she spent the lesson correcting her pattern and trying to sew her grown on plackets. She sewed a foot stitch stay stitch twice before doing it as an edge stitch (the videos and my instruction in person was to do an edge stitch). • Parker had cut two separate plackets instead of one separate and one grown on. She had to remake her pattern and recut one piece.
Week 3: Session 1	• Amari had not done her sleeves or cuff. • Blake struggled with her pattern. Her shoulder seams were not equal and as a result she could not sew her shoulder seams together. As a result she had not sewn her sleeves onto her garment. She had not sewn on her pockets. • Hayden had sampled a placket however had not read the instructions on the LMS nor the Calendar

	of how to start sewing his placket. He had not sewn his seams together first. • Harley had not completed her bodice, nor had she sewn her sleeves in. She had not sewn on her pockets. • Jordan had not sewn anything other than her plackets. Her side seams did not match. Her CB was 5cm longer than her front and her shoulder seams were different lengths. She spent the lesson reworking her pattern and re-cutting her fabric. • Parker tried to overlock her shoulder seams which were unnecessary given she had a yoke.
Week 3: Session 2 & 3	• Amari her second sleeve, did not fit as easily. With her dropped shoulders, she lost her notches and the armhole was bigger than the sleeve head. Once she did an easing stitch, she managed to insert it nicely. • Blake when closing her cuff she sewed down her peplum, she had to unpick, lift her peplum out the way and close the cuff. • Jordan struggled sandwiching her shoulder seams, she managed to do it but did it very badly, seams were sticking out and pieces that should not have been caught in were. • Parker did not fold back her sleeve placket and as a result her sleeve could not lie flat. She had to unpick her cuff to adjust how the placket interacts with the cuff. • Sawyer she was very behind in terms of the workflow schedule. She did not have any questions for me.
Week 4: Session 1	4 students did not film their reflection videos. Their professional finishing needs a bit of work. Lots of lose threads and some pressing issues.

6. What is the students' engagement like during the lesson?

Week 1: Session 1	The students were engaged. They all participated in the class exercise and were able to contribute to the exercise, identifying features and considering features they could not see in the shirt picture.
Week 1: Session 2 & 3	They worked hard during the lesson, but they felt the pressure because they were behind.

Week 2: Session 1	The students did not engage well because they were unprepared.
Week 2: Session 2 & 3	Better this lesson, some of them became frustrated with their errors. The students seemed to enjoy the hands-on demonstration of how to insert a sleeve.
Week 3: Session 1	Very positive, students worked well. They enjoyed the cuff demonstration, particularly the sleeve pressing demo.
Week 3: Session 2 & 3	They were engaged and worked hard. The speed dating exercise went well, and they were able to share their knowledge with their peers. They enjoyed the sewing on a button demonstration.
Week 4: Session 1	They engaged.

7. What areas are the students disengaging with?

Week 1: Session 1	None yet.
Week 1: Session 2 & 3	Their homework.
Week 2: Session 1	Using the Google Calendar.
Week 2: Session 2 & 3	Using the Google Calendar.
Week 3: Session 1	Time management.
Week 3: Session 2 & 3	Time management.
Week 4: Session 1	The reflective videos.

8. How are the students able to apply the knowledge gained from the online content during the lesson?

Week 1: Session 1	N/A
Week 1: Session 2 & 3	Not initially because they did not use the online content. Once they started referring to it, they seemed to fair quite well.

Week 2: Session 1	There was no knowledge to apply.
Week 2: Session 2 & 3	The students were able to sew their plackets however they were not ready for this lessons objectives.
Week 3: Session 1	The students were able to apply their knowledge and assist one another. I was able to provide clarity, but they were able to guide themselves.
Week 3: Session 2 & 3	Yes, they were able to apply themselves with little assistance.
Week 4: Session 1	Those who filmed a reflection video were able to articulate their knowledge.

9. What kind of progress have the students shown from the previous lesson?

Week 1: Session 1	N/A
Week 1: Session 2 & 3	Many students had not printed out their specification sheets.
Week 2: Session 1	They had sampled elements for Lesson 5 & 6 but not for lesson 4.
Week 2: Session 2 & 3	Very little. It seems no homework was done. The lack of progress meant that the students could not do the speed dating exercise.
Week 3: Session 1	Again still not in line with the workflow schedule but they have shown a fair amount of progress from the previous lesson.
Week 3: Session 2 & 3	They are still not up to date, but they had shirts that could be hung up on hangers by the end of the lesson.
Week 4: Session 1	They had completed their shirts.

10. Are the students showing steady growth in their knowledge?

Week 1: Session 1	The students were able to articulate shirt vocabulary.

Week 1: Session 2 & 3	Not at this point.
Week 2: Session 1	No.
Week 2: Session 2 & 3	Not at this point.
Week 3: Session 1	Yes, they are able to follow the processes easily and are able to apply their knowledge and understanding of construction.
Week 3: Session 2 & 3	Yes, they are. They also seem more confident in trusting their knowledge.
Week 4: Session 1	Yes, they are.

11. Are the students showing steady growth in their skill set?

Week 1: Session 1	N/A
Week 1: Session 2 & 3	Not at this point.
Week 2: Session 1	No
Week 2: Session 2 & 3	Not at this point
Week 3: Session 1	Yes, they are producing better quality items as they are learning more. With sampling they are making fewer mistakes.
Week 3: Session 2 & 3	Yes, they are. Although none of them had finished their shirts by the end of the lesson they were able to make a shirt without my step to step guidance. They took ownership of their knowledge.
Week 4: Session 1	Yes, they are. Still a few finishing issues, some problem solved their issues professional manners, others left their issues as is.

12. Are there any short comings in the online content?

Week 1: Session 1	None.
Week 1: Session 2 & 3	Not at this point.
Week 2: Session 1	Not at this point.
Week 2: Session 2 & 3	Some of the students needed a video on how to prepare and attach a cuff when it does not have a placket. I provided the students with a diagram and explanation of the process. During the next lesson I sampled it for them.
Week 3: Session 1	Not at this point.
Week 3: Session 2 & 3	One student needed a video of hand embroidered belt loops. I sourced a YouTube video and uploaded it onto the classroom for her to follow.
Week 4: Session 1	

13. What kind of problems have arisen during the lesson?

Week 1: Session 1	Some students had not purchased their fabric which made it difficult for the lecturer to answer their questions.
Week 1: Session 2 & 3	Students' lack of engagement with their homework.
Week 2: Session 1	The students were looking for an easy way out instead of using the calendar to follow what was required of them.
Week 2: Session 2 & 3	Laying fabric and cutting- first project where they needed to cut fabric as a single layer and not on fold. Some students ended up with two of the same sides instead of a left and a right.
Week 3: Session 1	Time management issues.
Week 3: Session 2 & 3	None

Week 4: Session 1	The students did not read the Google Calendar and what was expected of them, so they did not film their videos.

14. What learning needs need to be addressed?

Week 1: Session 1	None.
Week 1: Session 2 & 3	Students had forgotten that they have to trace out an entire block when starting a pattern. For some reason students were only tracing bits of the block.
Week 2: Session 1	None.
Week 2: Session 2 & 3	Preparing and attaching a cuff when it does not have a placket.
Week 3: Session 1	Some pattern issues which stems from their blocks. Their shoulder seams were uneven which meant they could not sew those seams together.
Week 3: Session 2 & 3	None.
Week 4: Session 1	Pressing and finishing. Many students had areas they needed to problem solve but instead of considering how to finish off those areas they left them as is. As a result their garments were not of a professional standard.

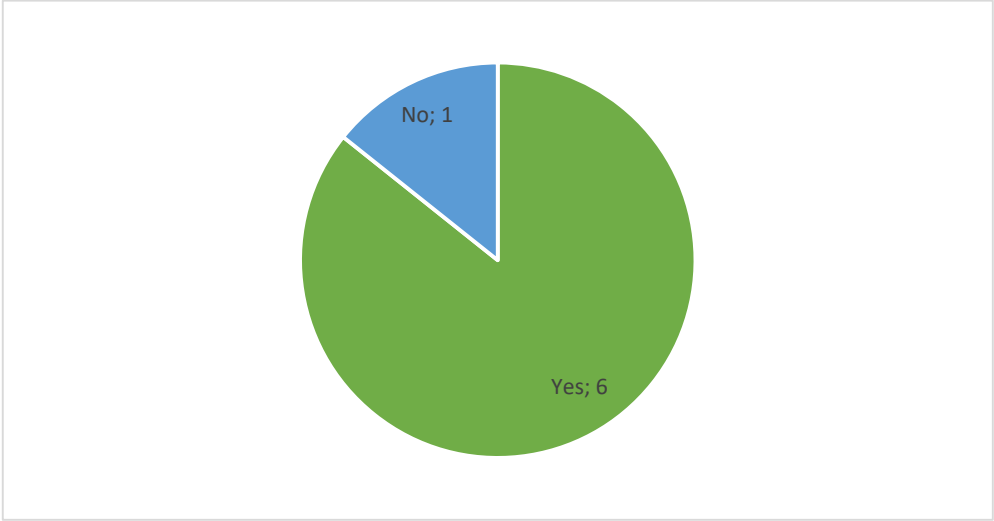
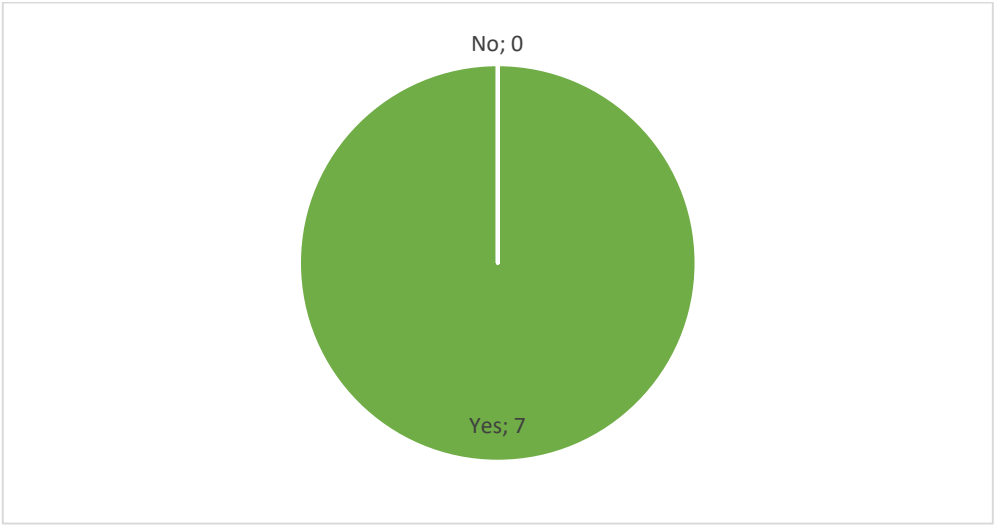
15. Additional comment

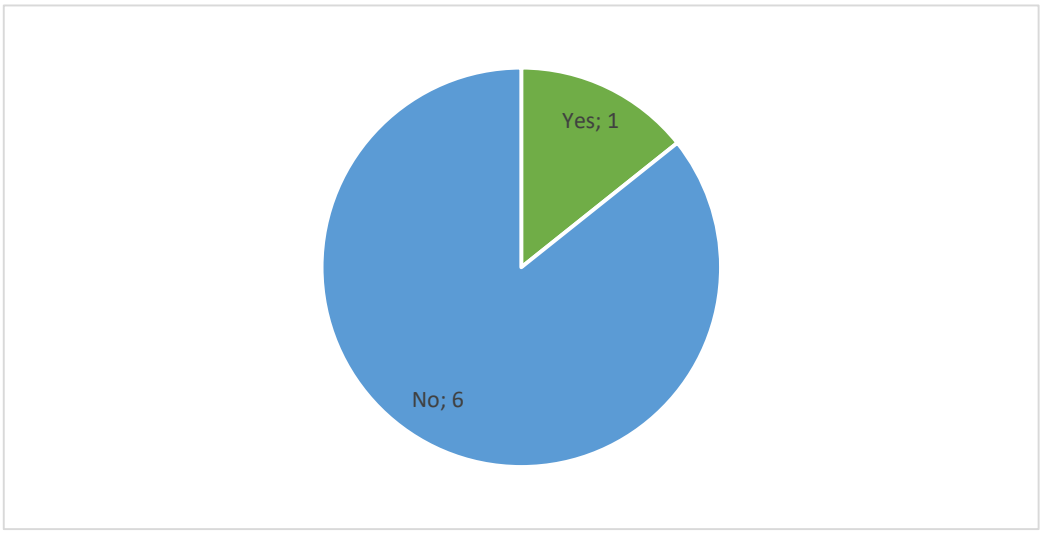
Week 1: Session 1	None.
Week 1: Session 2 & 3	None.
Week 2: Session 1	None.
Week 2: Session 2 & 3	None.
Week 3: Session 1	None.
Week 3: Session 2 & 3	None.
Week 4: Session 1	None.

QUESTIONNAIRE ANSWERS – PROJECT ONE

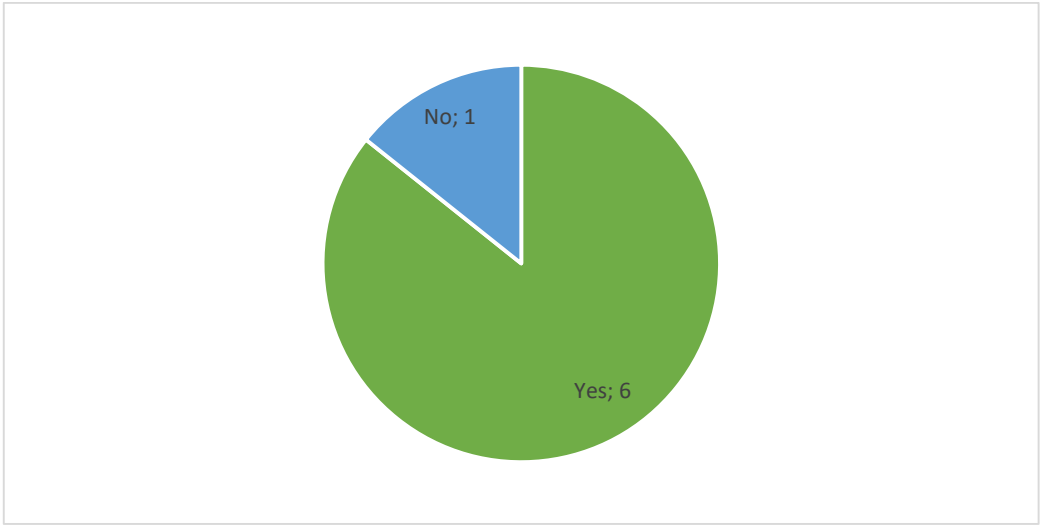
(Anonymously completed by seven out of seven students, using Google Forms.)

Blended learning is defined as the combination of face-to-face learning experiences and online learning experiences (Van der Merwe et al. 2015: 11; Heinze 2008: 35). The pattern making and garment construction class time is considered the face-to-face contact time and your homework, also known as independent study time, will include online learning experiences.

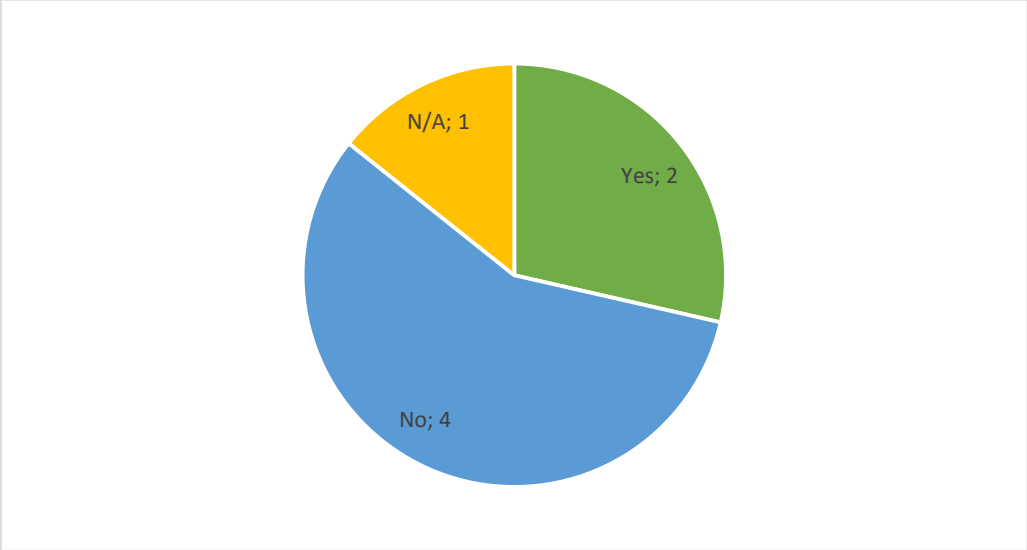
Baseline Knowledge
1. Is your personal Wi-Fi login on campus currently working?

2. Do you have access to the internet at home?

3. Have you used Google Calendar before?



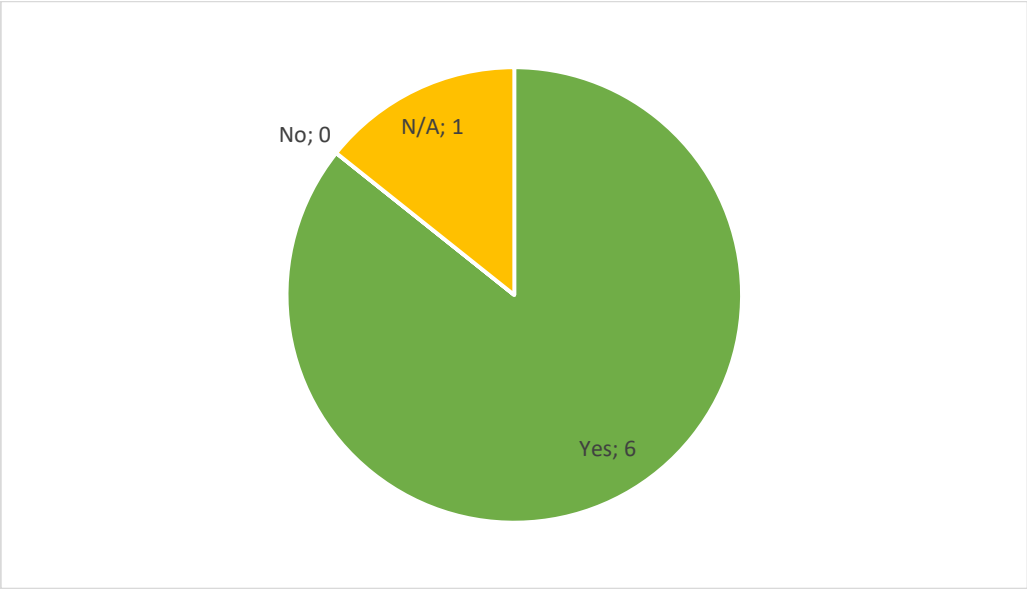
4. Have you used Google Classroom before?



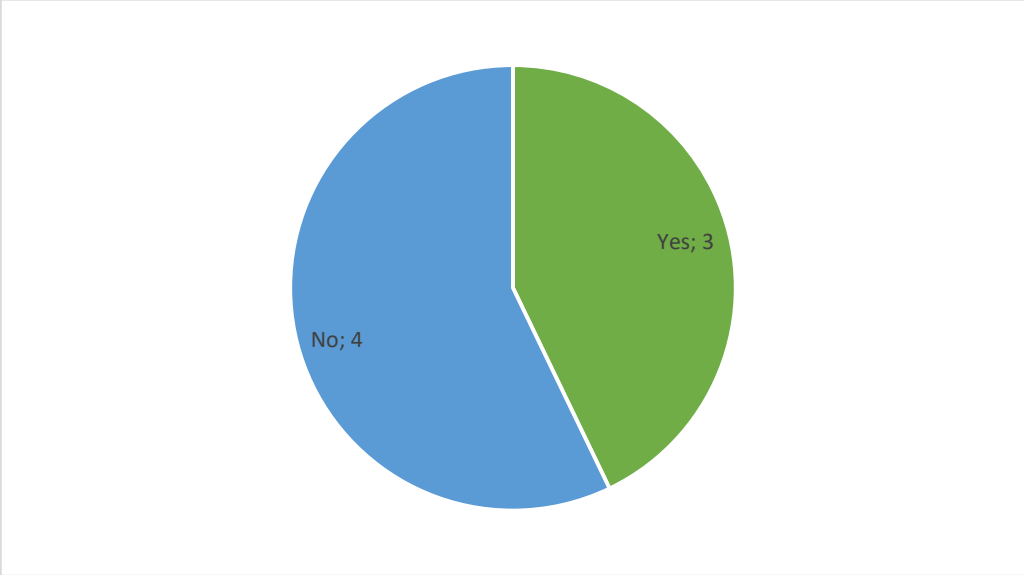
5. If yes to question 4, have you added an assignment to Google Classroom before?



6. If yes to question 4, have you commented on a Google Classroom post before?



7. Have you filmed your own video before?



8.	If yes, please explain what device you used to film your video, e.g. Cell phone, camera, laptop etc.
1.	*Cell phone*
2.	*Camera*
3.	*Cell phone and Camera*
4.	*N/A*
5.	*N/A*
6.	*N/A*
7.	*N/A*

9.	Have you uploaded a video onto YouTube before?
1.	No
2.	No
3.	No
4.	No
5.	No
6.	No

7.	Yes

10.	What has been your experience of blended learning thus far?
1.	Have not experienced blended learning yet.
2.	I am enjoying it.
3.	Do not really know what blended means.
4.	I have not really experienced blended that much.
5.	I feel as though it is really helpful to have videos on what to do and how to do it.
6.	Really enjoy it!
7.	Watching videos and applying the knowledge.

11.	What part of blended learning do you enjoy the most? and why?
1.	Have not experienced blended learning yet.
2.	Gain a variety of different information, certain methods of teaching do not go into my head but the information that we are learning is.
3.	Not having to attend because everything is online.
4.	Face-to-face. I feel it is more interactive and I learn better that way.
5.	The videos, I feel like I am learning more.
6.	I feel more prepared and ready from watching the videos.
7.	It really helps with concentration and working by myself.

12.	What part of blended learning do you enjoy the least? And why?
1.	Have not experienced blended learning yet.
2.	How it is online, when we do not have access to the internet it makes it harder to complete the assignments.
3.	Attending lectures.
4.	Google Classroom. Old Fashioned I guess.

5.	Nothing yet.
6.	That we have to buddy up, I prefer to work through things alone.
7.	Time management and multi-tasking.

13. How many hours do you spend on homework a week for this subject?

1.	Have not experienced blended learning yet.
2.	2-3.
3.	Too many hours, maybe 10.
4.	3 hours depending on the briefs due.
5.	Depending on what brief is due 3/4 hours
6.	About 3-4/ more if there is a project due.
7.	3.

Garment Construction

14. In your last sewing brief, you constructed a bag, are there any parts of the construction of the bag that you struggled with? Please explain your answer.

1.	I only struggled with forgetting to change the stitch size and then having to unpick and re-sew.
2.	The only thing I struggled with was lining up the flap of the pocket with the pocket.
3.	The edge stitching.
4.	I only struggled with the embroidery. I had never done it before and was battling to find helpful tutorials online and had to settle for a simple stitch / pattern.
5.	I enjoyed everything about the bag although doing the embroidery was hard as I have never done it before.
6.	The machine I worked with was hard and it caused a lot of time constraint.

7.	Yes, the sewing of loops, turning a curve and cutting at a third to get the bag to not fully be a square.

15. What construction methods do you feel you need more help with/ to work on?

1.	Gathers.
2.	Pattern making.
3.	Using the sewing machine in general.
4.	Majority.
5.	Pleating.
6.	General sewing etiquette.
7.	Back sticking.

Pattern Making

16. You just completed your pattern making test on skirts, are there any pattern making principles that you did not understand or feel that you need more help with? Please explain your answer.

1.	I feel that I could use more help with making a waistband and how to calculate it.
2.	Pattern making in general has been hard for me to really understand, but I am working on it. When I look at a technical drawing, I have to really think about how to make the pattern, the skill does not come naturally to me.
3.	Yes, how to represent added parts of the skirt on the pattern.
4.	I just need more practise however time constraints work against me to fully delve myself into pattern making.
5.	Flaring the skirt and waistband.
6.	Seeing the TD in Pattern form is what takes the longest, once I know what the pattern needs to look like the process is fun.

7.	the seam allowance not being exact the measurements off by slight and the waistband I find really hard because I do not understand it fully which I have to go back and recap as well as my Grain line information.

17. Are there any pattern making principles that you have forgotten or feel that you need help revising?

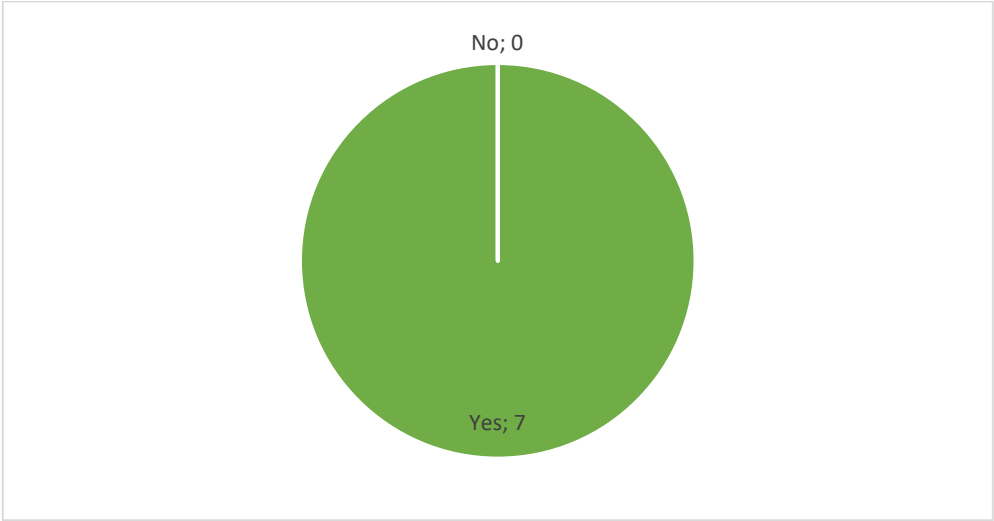
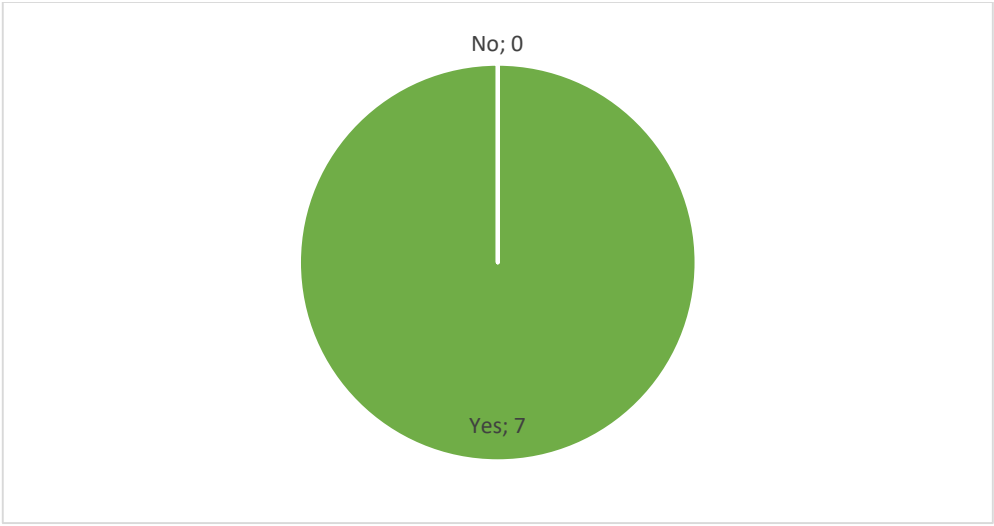
1.	I have forgotten how to make a flounce.
2.	No.
3.	How to create a neat and "tidy" master pattern.
4.	Would be ideal to revise all.
5.	Practising to make patterns from TD.
6.	Pattern making technical details.
7.	Gussets.

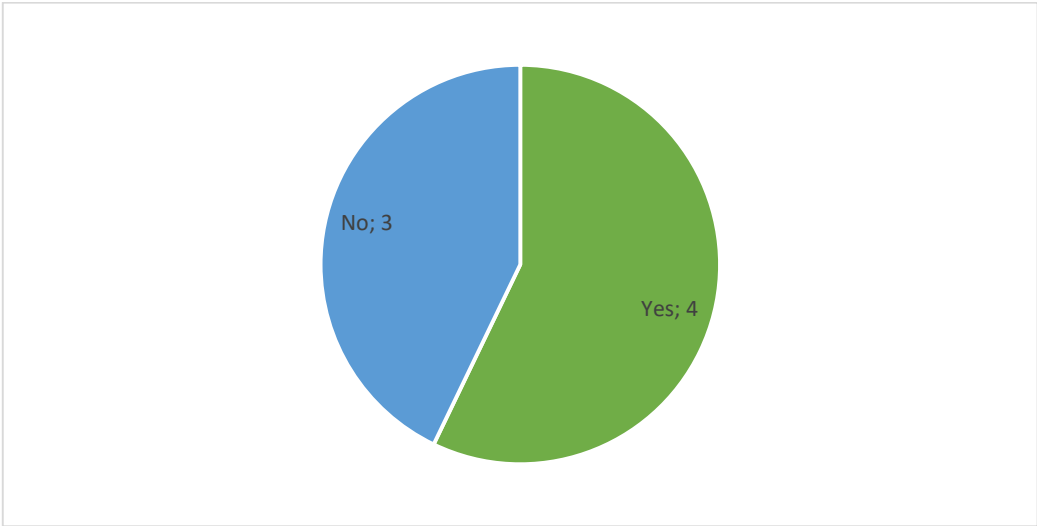
18. Do you have any questions regarding pattern making? If yes, what are your questions?

1.	No.
2.	No.
3.	I would love to go over facing and waistbands. I felt as though that section was rushed.
4.	What are the marking requirements for pattern making? It would be helpful if the lecturer gave us the marking sheet before a brief, so we know what is expected of us (and that is regarding all briefs including pattern making).
5.	Could we have more DAT lectures in which we can revise the weeks work / practise.
6.	Not at the moment.
7.	(Question left unanswered)

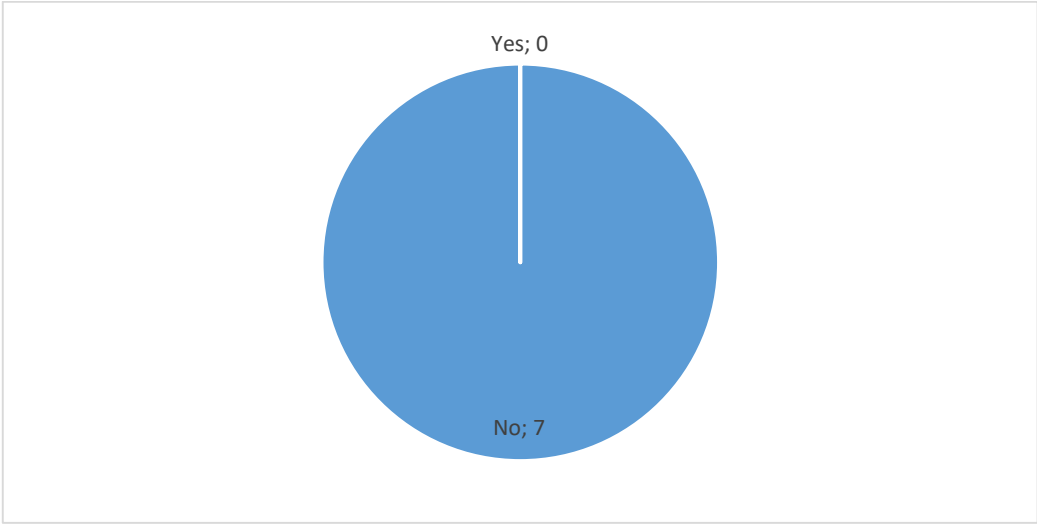
QUESTIONNAIRE ANSWERS – PROJECT TWO

(Anonymously completed by seven out of seven students, using Google Forms.)

Baseline Knowledge
1. Is your personal Wi-Fi login on campus currently working?

2. Do you have access to the internet at home?

3. Did you use the Google Calendar as a reference to guide you doing the brief?

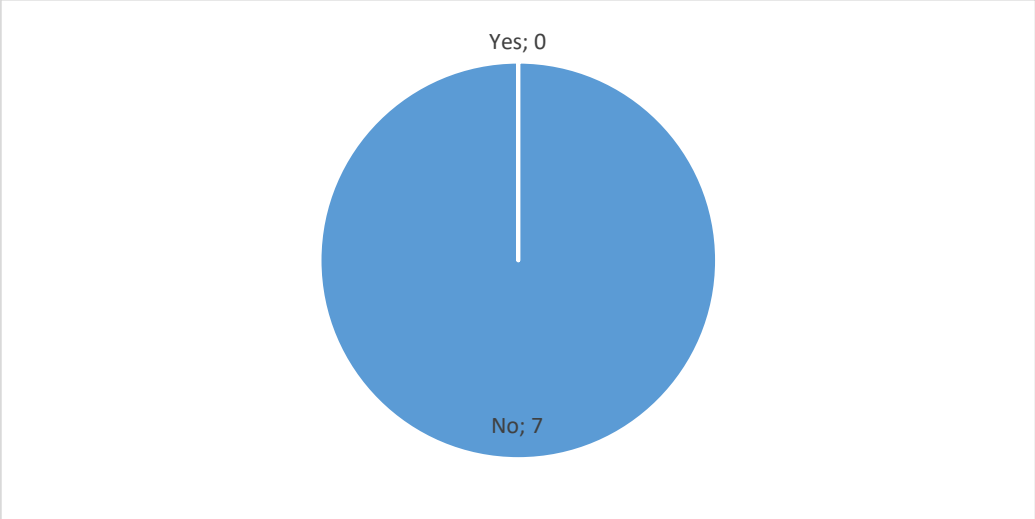


4.	Did you experience any problems adding an assignment to the Google Classroom?



5.	If yes to question 4, please describe the problems you experienced.
N/A	

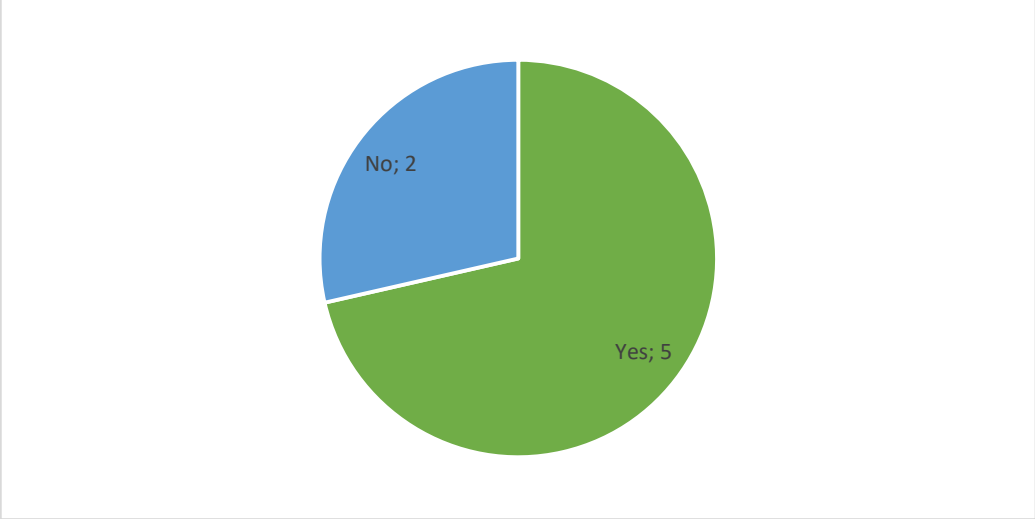
6.	Did you experience any problems commenting on a Google Classroom post?



7.	If yes to question 6, please describe the problems you experienced.

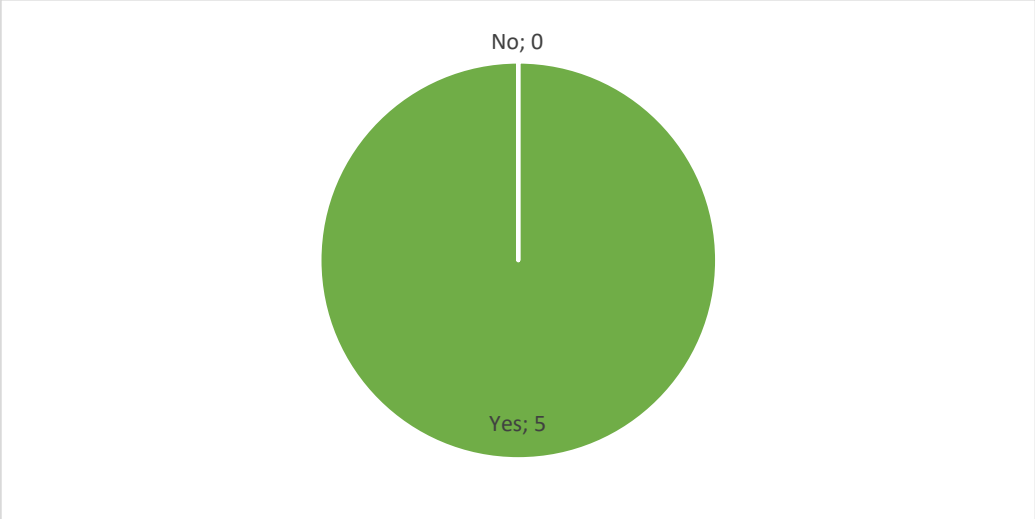
N/A

8.	Did you submit a reflection video in the skirt brief?



If yes to the question 8, please answer the below questions:

9.	Did you experience any problems filming your own video?



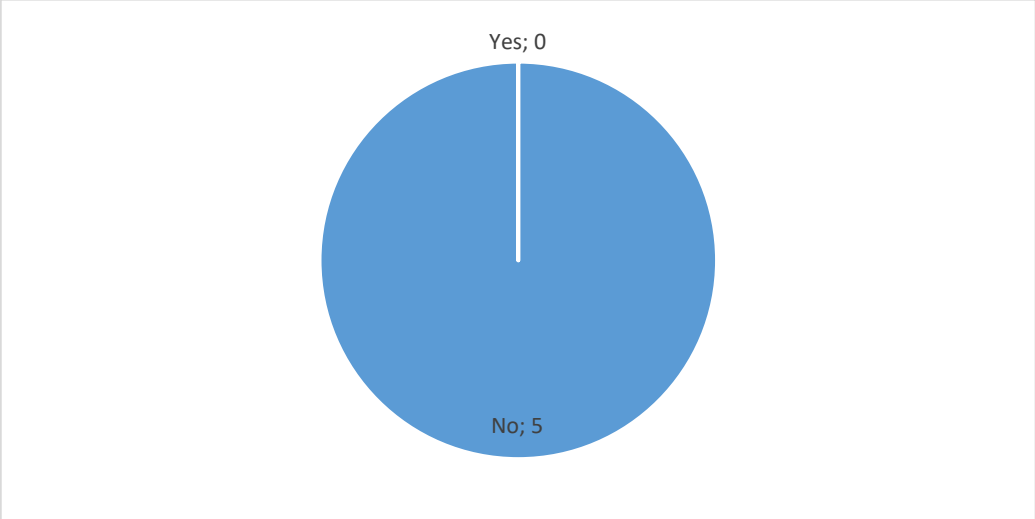
10.	If yes to question 9, please explain the problems you experienced.

1.	Took too much time.
2.	Editing time.
3.	Did not know what the video should explain.
4.	I kept having to refilm myself.
5.	Time pressures.

11.	What device did you use to film your video?

1.	Phone.
2.	Phone.
3.	Phone.
4.	Phone.
5.	Phone.

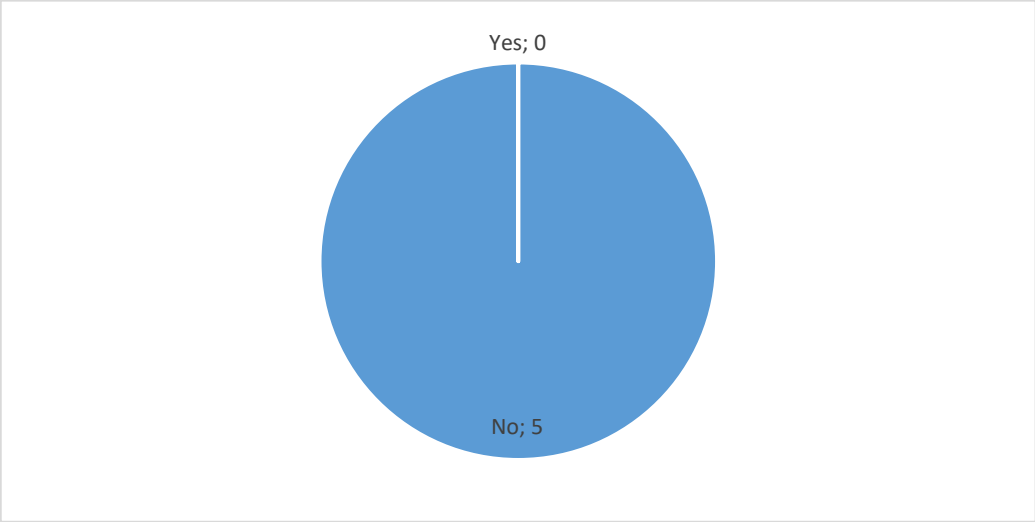
12.	Did you experience any problems uploading your video onto YouTube?



13.	If yes to question 12, please explain what problems you experienced.

N/A

14.	Did you experience any problems uploading your YouTube video link to the Google Classroom?



15.	If yes to question 14, please explain the problems you experienced.

N/A

Garment Construction

16.	In your last sewing brief, you constructed a skirt, are there any parts of the construction of the skirt that you struggled with?

1.	General understanding is minimal which makes it harder.
2.	Hem.

3.	Gathers.
4.	The zip.
5.	Fitting a zip and waistband
6.	Yes. Sewing a gathered panel onto a normal panel. (fabric was too thick and cut holes in the skirt with the over locker because gathers got caught).
7.	Sewing a waistband and invisible zip.

17. What construction methods do you feel you need more help with/ to work on?

1.	General construction direction and tips.
2.	Hem.
3.	General.
4.	Other than the zip, I think the slit was quite difficult.
5.	Waistband and zip.
6.	Inserting a zip into CB seam (mine was into a waistband but inserting a zip into anything is what I feel I need help with).
7.	Sewing zips.

Pattern making

18. You just completed your bodice pattern making brief, are there any pattern making principles that you did not understand or feel that you need more help with?

1.	I feel that I grasp the concept.
2.	Drill holes.
3.	Peplum.
4.	Not at the moment.
5.	Moving darts.
6.	Pivoting darts.

7.	Closing of the darts.

19.	Are there any pattern making principles that you have forgotten or feel that you need help revising?

1.	The finer details.
2.	Translating TDs to patterns.
3.	Just small details and notches.
4.	Not at the moment.
5.	N/A
6.	Yes. I forgot that the style analysis needs to have the entire block traced out.
7.	Sewing darts and opening and closing darts.

20.	Do you have any questions regarding pattern making? If yes, what are your questions?

1.	No.
2.	Are drill holes only on a master pattern?
3.	No.
4.	No.
5.	Yes.
6.	Yes. Where do notches go?
7.	(Question left unanswered)

INTERVIEW ANSWERS – PROJECT ONE

(Interviews were conducted by a third-party interviewer; all seven students were interviewed.)

Interview Questions	
1.	Overall, did you enjoy the blended learning process? Please explain your answer.
1.	Yes, because it helped us learn new things like getting things for myself instead of being told.
2.	No, Because I was not able to understand the tutorials. I would have preferred to do it with her.
3.	Yes, because as a student you can take your time to watch the lesson online as many times as you want and thoroughly understand the process of making a garment.
4.	Yes, because it was really helpful to have videos in front of us to show us exactly how to do everything.
5.	Yes, I did, it was very informative, and it help by doing work for yourself.
6.	No, because I do not learn better when I use videos, and I feel videos were out of context.
7.	Yes, I think it a good idea to learn prior to the class and was helpful to know the skills before doing it on the skirt.
2.	What parts of the blended learning delivery did you enjoy the most?
1.	Videos.
2.	The fact that we have videos on hand.
3.	The pattern making videos because it is the fundamentals of sewing and technicalities of pattern making needs to be learned properly to get to the next level of sewing.
4.	Having the videos at hand every time.
5.	The videos, you could always refer to them if you want.
6.	Enjoyed seeing the finished product.

7.	Learning the video and doing it myself was really nice.

3. What part of the blended learning delivery did you like the least? Why?

1.	Referring to videos, instead of explaining to us face-to-face.
2.	I did not like sampling before seeing how it is done properly. I would have enjoyed doing it with the lecturer before watching videos.
3.	Not being able to get feedback from your lecturer as you did your work to confirm that you are following the process of sewing correctly.
4.	Sometimes it would be hard if the lecturer wasn't present to show us how to do things.
5.	Time management. The internet connection.
6.	Over locking the gathers of the skirt.
7.	The fact that it was a lot of pressure coming into class with processes which might not have been done the right way.

4. How many hours of homework did you do to prepare for a lesson?

1.	2-3 hours.
2.	30 min to an hour.
3.	3 hours to prepare before lesson as I had to come to classes prepared as I am a student who does not have a machine at home.
4.	Roughly half an hour on each sample and 4 hours.
5.	An hour.
6.	1 hour each lesson.
7.	Approximately 10 hours. *(Assuming this student is referring to a week's worth of homework, 10 hours divided over 3 lessons is approximately 3 hours of homework before each lesson)*

5. How many hours of homework did you do to complete your brief?

1.	6 hours

2.	10 -15 hours.
3.	20 hours, but because am a beginner in sewing as I had to sample first before I work on my own fabric.
4.	Achievable, but would have liked more time earlier on the term to focus on how to sew certain items of garment.
5.	3 hours extra.
6.	5 lessons and 4 hours by myself.
7.	6/7 hours.

6. How do you feel about the number of hours needed for homework?

1.	Fair, because the work you put in is equal to the results.
2.	Fair.
3.	I feel it was too much as there are other courses we had to put time into, including sewing the garment itself.
4.	I feel like we need more time to practise.
5.	Good amount of hours.
6.	It very time consuming and you need to set a lot of hours to finish it on time.
7.	They are fine, depends on how a person works on it.

7. What was your experience of the online tutorials?

1.	Really good and helpful.
2.	Very helpful.
3.	They were great but lighting and sound needs to be improved.
4.	I enjoyed it because I like working online.
5.	I enjoyed it, very informative.
6.	Difficult. Because I prefer face-to-face learning.

7.	Very helpful and I enjoyed watching them and learning from them.

8. What part of the online tutorials did you enjoy the most?

1.	Step by step tutorials.
2.	The Google Calendar, like that it was all organised and easy to view.
3.	Pattern Making and darts.
4.	The sewing videos.
5.	I enjoyed watching a darts, the blind hem and waist bands.
6.	I did not enjoy any of it.
7.	Watching the sewing video.

9. What part of the online tutorials did you enjoy the least?

1.	How some of the videos were out of context.
2.	None.
3.	The Silence behind the lecture speaking makes the video boring, would have been better if there was music in the background.
4.	That we had to watch it at my own time.
5.	The invisible zip.
6.	The fact that it was out of context to my skirt.
7.	The pattern making.

10. Please describe any problems you had with the online tutorials.

1.	Hard when there is no access to Wi-Fi.
2.	If you did not have a strong Wi-Fi network, it difficult to view videos.
3.	Not having internet at home makes it difficult to watch the tutorials. It would be helpful if the videos were downloadable to watch them at home.

4.	The Wi-Fi was slow.
5.	I did not have any problems.
6.	I did not experience any problems.
7.	There were no problems.

11. Were there any tutorials you did not understand? Please describe which one and why?

1.	There was not any.
2.	Yes, could have been a bit more in-depth.
3.	No, but wish there was an invisible stitch video for adjustable straps.
4.	No, they were all straightforward.
5.	The blind him and the invisible zip, because it was very tricky and not that informative on how to do.
6.	Understood all of them.
7.	They were explained really well and everything I needed to know was there.

12. Were there any tutorials that you found boring? Please describe which one and why?

1.	No.
2.	None.
3.	All of them, because of the silence in the background.
4.	No, I did not find anything boring.
5.	None.
6.	(Left unanswered)
7.	I did not find any tutorials boring because I enjoyed the experience.

13. Was there any part of the online learning classroom that you would have preferred to have learnt during the face-to-face contact time? If so, which part?	
1.	No.
2.	Yes, all of them.
3.	Assembling of the garment pieces.
4.	Pattern making tutorial.
5.	The darts and the hem.
6.	All of them.
7.	No.

14. What was it like gaining your knowledge before class and applying it during the face-to-face class time?	
1.	It was hard because if you did not have much time to prepare for a lesson it holds you back.
2.	It was not as good because it gave me more work to do.
3.	It was helpful because you came prepared for class.
4.	It was really helpful because it means we could have sewn it quicker without many mistakes.
5.	It helped to be more prepared for class.
6.	It was nerve wrecking because I was not sure if it was correct or not
7.	It was very nice to be able to come to class with the knowledge as I get quite anxious about not doing this right the first time.

15. Please explain your experience on the pace of this brief, was it fast paced, easily achieved, too slow, boring or enjoyable?	
1.	Fast pace and slow paced.
2.	Fast paced for the amount of work required, would have been great if they had more allocated time to practise. An additional hour a week for practising.

3.	It was well paced out because it was 3 weeks and we had studio time.
4.	It was an enjoyable pace.
5.	Fast paced.
6.	Very slow, but achievable.
7.	I think I was given a right amount of time to do things and was enjoyable.

16. Do you have any other comments you would like to make about your experience?

1.	I wish we could be able to ask further questions and not be referred to the video.
2.	No comments.
3.	Videos should be uploaded at the beginning of the year, so that students get time to understand them.
4.	It really went out well and I am happy with the outcome.
5.	No comments.
6.	I am very happy with how my skirt came out; however the process was very stressful and frustrating.
7.	No comment.

INTERVIEW ANSWERS – PROJECT TWO

Interview Questions	
1. Overall, did you enjoy the blended learning process? Please explain your answer.	
1.	Yes, it was nice having the videos available to us at any time.
2.	Yes, I did because I understood the blended learning process of watching, sampling and making.
3.	Yes, because it was very helpful.
4.	Yes, because it made us think outside of the box.
5.	Yes, it is really nice to have videos on hand all the time.
6.	Yes, because I like to learn from videos.
7.	Yes, I found it better than last time because I had more experience, I found it easier.
2. What parts of the blended learning delivery did you enjoy the most?	
1.	We had the opportunity to prepare before the lecture.
2.	The pattern making videos.
3.	The videos of the construction processes.
4.	Learning from the videos and knowing that we can retrieve them again.
5.	The videos.
6.	I like the fact it is on Google Classroom. I get notifications about the work due and it is in a good viewing order.
7.	The YouTube playlists.
3. What part of the blended learning delivery did you like the least? Why?	
1.	None.

2.	Some of the videos were fuzzy.
3.	The collar videos because they were not clear enough.
4.	Finding the videos that were needed.
5.	The fact that I had to make reflection videos because I feel insecure about filming.
6.	None.
7.	None.

4. How many hours of homework did you do to prepare for a lesson?

1.	It varied, 45 minutes to an hour.
2.	Two hours, excluding sampling because I could only do sampling on campus.
3.	6 hours.
4.	An hour.
5.	1-2 hours.
6.	2-3 hours.
7.	2 hours.

5. How many hours of homework did you do to complete your brief?

1.	10 Hours.
2.	36 hours.
3.	28 hours.
4.	14 hours.
5.	5-6 hours.
6.	10 hours.
7.	6 hours.

6.	How do you feel about the number of hours needed for homework?
1.	They are okay.
2.	I feel that some of it could be done in class.
3.	Feel like I need more time.
4.	More hours are needed.
5.	Fair, because whatever you put in you get out.
6.	I feel fine with it.
7.	It is quite a lot but doable.

7.	What was your experience of the online tutorials?
1.	Fun, good experience just that some of the videos were fuzzy.
2.	They were really good this time around and I got to the post easily.
3.	I really enjoyed it. It's a really good way to learn.
4.	Very nice.
5.	Really good and informative.
6.	Successful and enjoyable.
7.	I find the tutorials very easy to follow.

8.	What part of the online tutorials did you enjoy the most?
1.	Plackets and yokes.
2.	The sub-titles.
3.	The pattern making videos.
4.	Re-watching the videos to understand it properly.
5.	How you could work whenever you wanted to.

6.	The way that there was a you tube playlist so you could easily select any video you want to watch.
7.	Preferred these tutorials as there was more of a contrast between the thread and the fabric so I could see more clearly.

9. What part of the online tutorials did you enjoy the least?

1.	None.
2.	None.
3.	Attaching the collar and cuffs.
4.	None.
5.	Sampling the plackets.
6.	If you didn't have Wi-Fi you couldn't watch the videos.
7.	The videos were a bit blurry towards the end.

10. Please describe any problems you had with the online tutorials.

1.	I battled to see which side the fused side was.
2.	They were disorganised.
3.	I didn't know how to upload the reflection video.
4.	Had no problems.
5.	None.
6.	Internet.
7.	Did not encounter any problems.

11. Were there any tutorials you did not understand? Please describe which one and why?

1.	None.
2.	None.

3.	No.
4.	Not sure which one but the hand would cover the fabric and I wouldn't know what she is doing.
5.	Shoulder seam video was hard to understand and as well as the collar. I feel we need a practical demonstration for hard construction processes.
6.	The shoulder seams. It was explained in a difficult way.
7.	Sewing on the cuff. I didn't understand how to sew a cuff without a placket, however later on when she explained it to me in person it helped.

12. Were there any tutorials that you found boring? Please describe which one and why?

1.	None.
2.	None.
3.	None.
4.	None.
5.	None.
6.	I didn’t find anything boring.
7.	When sewing the silence of video was boring.

13. Was there any part of the online learning classroom that you would have preferred to have learnt during the face-to-face contact time? If so, which part?

1.	None.
2.	None.
3.	No.
4.	Collar videos.
5.	The collar videos.

6.	The shoulder seams.
7.	The collar.

14. What was it like gaining your knowledge before class and applying it during the face-to-face class time?

1.	It helps you to be more prepared.
2.	It was productive.
3.	Was really helpful and made the process go really quicker.
4.	It was a good experience. It allowed me to be prepared before I went to class.
5.	It was good because you knew what was expected from you in class.
6.	Enjoyed it and I felt like I knew what I was doing.
7.	I felt very prepared for the lesson.

15. Please explain your experience on the pace of this brief, was it fast paced, easily achieved, too slow, boring or enjoyable?

1.	Enjoyable.
2.	It was too fast. I feel like we needed more time to practise.
3.	It was fair; however sampling took too long, I should have started sewing earlier.
4.	Enjoyable.
5.	Very fast.
6.	Fast paced.
7.	Fast paced.

16. Do you have any other comments you would like to make about your experience?

1.	No comments.

2.	Sleeve tutorial was good when you did it in front of us. I would have loved the collar to be done also.
3.	Really enjoyed making my shirt.
4.	Good experience, I knew what was expected.
5.	No comment.
6.	No comment.
7.	No comment.
17. Did you prefer the blended delivery approach for project one (the skirt brief) or project two (the shirt brief)? Please explain your answer.	
1.	Project two, because we had already done the blended lessons and understood the process and we knew how to approach this one.
2.	Project two, because I gained understanding on how to do it from the first project.
3.	Project two, because the videos are more clear and I have a better understanding of blended learning as a whole.
4.	Project two. The components for the shirt was easier to understand compared to components of the skirt.
5.	Project two, the videos were easy to understand.
6.	Project two. I understood what was expected because I had experience from project one.
7.	Project two, because I felt I had more experience and I didn't make as many mistakes as the first project.

REFLECTION EXERCISE ANSWERS – PROJECT ONE

All seven students took part in the discussion

Discussion Guideline	
1	Looking back on the blended learning approach, how do you feel about it now?
	Helpful, helped them focus, really enjoyed it. Some enjoyed the flipped classroom because it gave them a better understanding and more confidence in their skillset. Others did not enjoy the flipped classroom in terms of preparations requirements.
2	How did you feel about the layout of the Google Classroom?
	Very helpful, in order.
3	Were there too many headings or categories or too few?
	More than enough
4	Did you like that the processes were broken down into shorter videos? Would have preferred a single video?
	Enjoyed the broken up the videos
5	Were you able to follow along with the videos? Was the pace too fast or too slow.
	Pace was good for the students.
6	Did the videos clearly explain the processes that you needed to follow?
	Overlocking explanations lacked.
	Watched the videos in full and then re-watched and sampled.
7	Did you source other videos or content to complete your skirt?
	No
8	Could you see the demonstration clearly in the video? Do I need to use brighter pens in the pattern making demonstrations? Do I need to use brighter fabrics or threads in the construction videos?
	Rather some neon threads to enhance the contrast.
9	Were there any parts of the videos that you felt did not work?

	None.
10	Was there anything related to the videos or Google Classroom that you felt worked very well?
	No, but some of the students struggled to view the online content at home due to a lack of internet or lack of quick enough internet connection to view the videos as good quality, clear videos. A student suggested sharing a YouTube playlist with the class, allowing them to download the content in a Wi-Fi zone and watching the content offline at home.
11	Did you watch all the content or only the content that you felt was relevant to your skirt? Do you intend on watching all the content now that the assignment is over?
	Six out of seven only watched what was relevant at the time. One watched all of them. When asked if they would go back and watch all of them now. They said only if they need to sew a new process would they go watch that process.
12	Now that you have experienced the brief, the learning processes that had to take place and the time constraints, is there anything that you wish was demonstrated in the face-to-face contact time.
	Demonstrating the zips, but time was limited therefore a demonstration of one zip in class and then sample their individual zips at home.
13	Did the blended learning delivery appeal to you? Do you enjoy digital content?
	Mixed opinions. Some struggle if they do not see it hands on but most of them really enjoyed having video content to refer to.
14	What is the value of the sampling process? Do you find it valuable?
	It is necessary, does not ruin your garment fabric. Speeds up the workflow. Preparation is key.
15	Do you feel confident enough in your knowledge to sew a skirt on your own?
	Yes, they do
16	Was it valuable to you seeing other students' processes in their reflective videos?
	Yes, they did
17	Did you collaborate with one another, work together and ask each other questions or did you work by yourself?

	A limited amount. A student felt that if it was easy enough, they did not need want to collaborate with a student. Some students did feel isolated during the homework time.

REFLECTION EXERCISE ANSWERS – PROJECT TWO

All seven students took part in the discussion

Discussion Guideline	
1	Looking back on the blended learning approach, how do you feel about it now?
	The students stated that the loved the blended learning approach. The students felt that the brief was fast paced, and the approach gave them the knowledge they needed to work through the project, and they could refer back to the content as they needed to.
2	How did you feel about the layout of the Google Classroom?
	The students liked the access to the YouTube playlist. Some of the students used the playlist to watch the videos in sequence rather than navigating through the topics on the classroom.
3	Were there too many headings or categories or too few?
	All the students agreed that the layout was good.
4	Did you like that the processes were presented as single pieces of information rather than of a finished garment, like in the skirts? Was it easier for you to apply it to your context?
	Yes, all the students felt that the processes were easier to understand and easier to apply.
5	Were you able to follow along with the videos? Was the pace too fast or too slow.
	The students were able to follow along expect when their Wi-Fi connections were slow. Only one student downloaded the content online to view offline. The other students streamed the content when they needed it.
6	Did the videos clearly explain the processes that you needed to follow?

	Some of the students struggled with the process of “sandwiching” the shoulder seams and attaching the collar. They felt the videos explained the processes clearly but doing them took a few tries.
7	Did you source other videos or content to complete your shirt?
	No.
8	Could you see the demonstrations clearly in the video?
	Yes, the bright stitching made it easy to see where to sew and what it should look like.
9	Were there any parts of the videos that you felt did not work?
	Some students felt that the shoulder seam was tricky to see. The camera angle needed to show the turning out process from the side rather than the top view camera angle.
10	Was there anything related to the videos or Google Classroom that you felt worked very well?
	The students felt the videos were really easy to understand this time as they had experienced the blended learning approach previously.
11	Did you watch all the content or only the content that you felt was relevant to your shirt? Do you intend on watching all the content now that the assignment is over?
	The students did not watch all of the content rather they watched as much as they could. They noted that they watched more videos during this project than in project one. The students stated that they would go back and watch the content they had not watched during the brief.
12	Did you enjoy the live demonstrations? Did they give you the confidence for the online homework?
	The demonstrations helped a lot by providing them with a basic understanding before doing their homework.
13	Now that you have experienced the brief, the learning processes that had to take place and the time constraints, is there anything that you wish was demonstrated in the face-to-face contact time.
	Attaching a collar and “sandwiching” the shoulder seams.
14	Did the blended learning delivery appeal to you? Do you enjoy digital content?

	Yes, because it was easy to catch up on the work and work independently at my own pace.
15	What is the value of the sampling process? Do you find it valuable?
	The process was very valuable as it made sewing the garment quicker.
16	Do you feel confident enough in your knowledge to sew a shirt on your own?
	Yes.
17	Did you enjoy the collaboration with one another (speed dating), did you learn anything new from your peers?
	Yes, as I learnt from my classmates. The students also asked each other to show them the processes they had followed as they were interested in each other's design elements.
18	Was it valuable to you seeing other students' processes in their reflective videos?
	Yes.

APPENDIX H: REFLECTIVE JOURNAL EXTRACTS

REFLECTIVE JOURNAL EXTRACT - PROJECT ONE

4) What evidence have the students shown that they are competent in the objectives set by the online content?

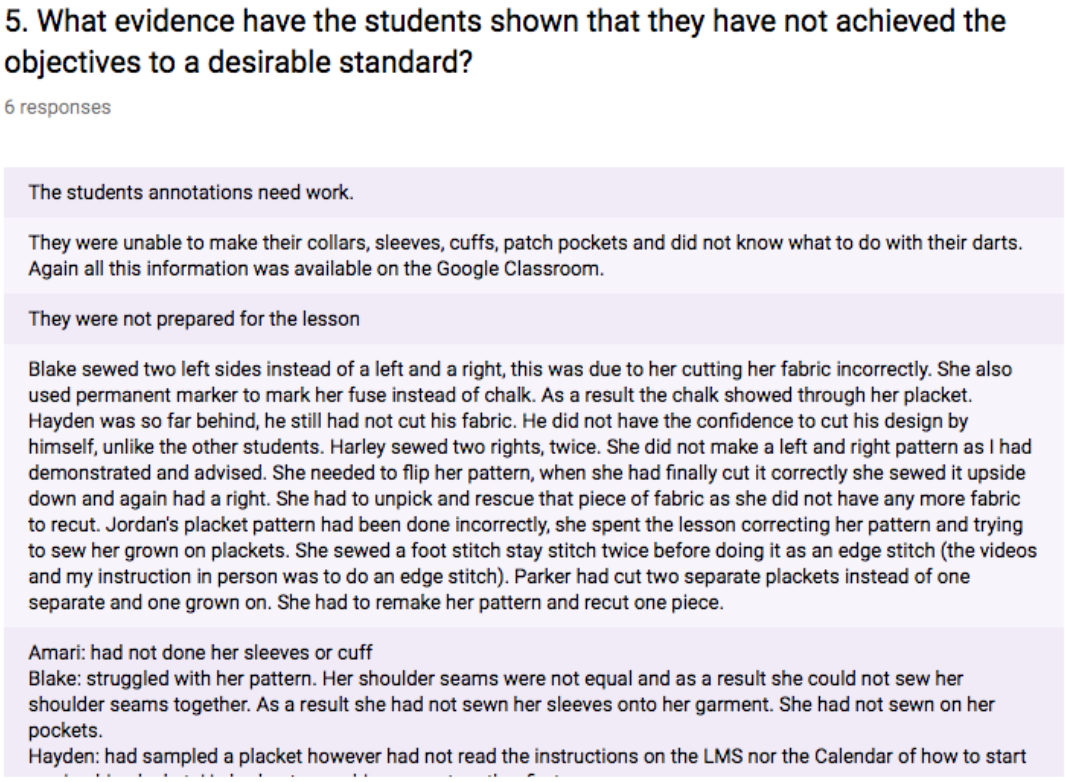
8 responses

Student 5 showed no competence

They have not met the lesson objective and are still catching up on the work they have fallen behind in. They are able to apply their knowledge based on what they have learned from the online content.
Student 1: Has completed a neat and professional invisible zip, has closed her straight waistband neatly with a sunken stitch. She watched the hook and eye video in class and was able to complete her skirt within the given time.
Student 2: She showed no competence.
Student 3: Was unprepared for the lesson and used the lesson time to do his homework.
Student 4: Had inserted an exposed zip successfully.
Student 5: Had completed her blind hem neatly and accurately. She proceeded to complete her facing with hanger loops neatly.
Student 6: She showed no competence.

Student 1: Had completed her skirt within the lesson sessions and handed in a neat and professionally finished garment. She filmed a reflection video and uploaded it to the Google Classroom.
Student 2: Has completed her skirt in a professional manner. She filmed a reflection video and uploaded it to the Google Classroom.
Student 3: Has handed in a completed skirt. He filmed a reflection video and uploaded it to the Google Classroom.
Student 4: Has handed in a completed skirt but did not complete her reflection video.
Student 5: Has handed in a completed skirt but did not complete her reflection video.
Student 6: Handed in a skirt but did not complete her reflection video.
Student 7: Handed in a skirt but did not complete her reflection video.

REFLECTIVE JOURNAL EXTRACT – PROJECT TWO



5. What evidence have the students shown that they have not achieved the objectives to a desirable standard?

6 responses

The students annotations need work.

They were unable to make their collars, sleeves, cuffs, patch pockets and did not know what to do with their darts. Again all this information was available on the Google Classroom.

They were not prepared for the lesson

Blake sewed two left sides instead of a left and a right, this was due to her cutting her fabric incorrectly. She also used permanent marker to mark her fuse instead of chalk. As a result the chalk showed through her placket. Hayden was so far behind, he still had not cut his fabric. He did not have the confidence to cut his design by himself, unlike the other students. Harley sewed two rights, twice. She did not make a left and right pattern as I had demonstrated and advised. She needed to flip her pattern, when she had finally cut it correctly she sewed it upside down and again had a right. She had to unpick and rescue that piece of fabric as she did not have any more fabric to recut. Jordan's placket pattern had been done incorrectly, she spent the lesson correcting her pattern and trying to sew her grown on plackets. She sewed a foot stitch stay stitch twice before doing it as an edge stitch (the videos and my instruction in person was to do an edge stitch). Parker had cut two separate plackets instead of one separate and one grown on. She had to remake her pattern and recut one piece.

Amari: had not done her sleeves or cuff
Blake: struggled with her pattern. Her shoulder seams were not equal and as a result she could not sew her shoulder seams together. As a result she had not sewn her sleeves onto her garment. She had not sewn on her pockets.
Hayden: had sampled a placket however had not read the instructions on the LMS nor the Calendar of how to start

Note: All names used in both extracts are pseudonyms

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