

Analyzing the Understanding of Pattern-Making Techniques: A Comparative Study Before and After Self-Reflection Activity Implementation

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ABSTRACT

This action research aims to investigate the impact of the self-reflection activity of flat pattern-making techniques among the students. The study centers on a comparative examination, analyzing the capability of participants in Flat pattern-making before and after the execution of self-reflection exercises. The participants consist of students studying flat pattern making, who are engaged in specially designed self-reflection activities which will ultimately enhance their understanding of pattern-making techniques. The Study aims to analyze the effectiveness of the implementation of research in their learning process, to uncover the improvements in the participant's skills, knowledge, and overall approach towards pattern making. Through a systematic comparative study, the research will try to contribute to giving valuable insights into the potential benefits of reflective practices in the education of pattern-making techniques. This investigation adjusts with the broader objective of improving academic methodologies within the field of fashion design, with a particular focus on pattern making. Data was collected throughout the semester, and the focus group discussion technique was used in qualitative analysis. The outcomes of the textual context revealed that students recall their past learning process. How they learn and what they learn. They talked about it and compared themselves after self-reflection and research implementation. When they are considered collectively, the investigation shows that when students reflect both on the methods and research process of their learning it does lead to their better academic performance.

Keywords:

Flat Pattern making, Pattern-making analysis, Reflection in/on Action Research, Construction, and observation

INTRODUCTION

Pattern-making Framework

As Human Beings we all are pattern makers naturally. We always look for the order of the pieces of information we receive. We always try to make patterns that are known to us and inspired by the World we live in. Patterns are appreciated and are recognized in nature, language, and society. Conventionally, the educational process is extensive training. The experienced and qualified skilled craftsmen passed

on information, knowledge, and technical skills to the trainees. Knowledge was tested through a theoretical exam. Physical and technical skills were developed through structured practice and observation, and tested with practical demonstrations (Alder, 2016). In garment production, a pattern is made according to illustration and its pattern may differ from sketch or illustration depending on the pattern maker's accuracy and pattern-making skills (Fujii et al., 2017). The art of designing patterns by making blocks to sew clothing together is known as pattern making (Datta & Seal, 2018). Pattern-making is the process of making a blueprint of a garment (Armstrong, 2014). It is used as a template to cut out the fabric that is required for sewing. *“A system of pattern-making that depends on measurements to create basic foundation blocks that will be used further is known as **Pattern drafting**”* (Armstrong, 2014). *“A system of pattern-making that is dependent on previously developed patterns is known as **Flat pattern-making**”*. The basic pattern set consists of 5 pieces basic bodice front, basic bodice back, skirt, and long Sleeve, representing the standard size and figure (Armstrong, 2014).

Pattern drafting is a fundamental aspect of the garment manufacturing process and serves as a blueprint for producing garments that fit smoothly and follow the desired design. It's a systematic approach to creating templates, called patterns that serve as guides for cutting and assembling fabric to create finished garments. This method relies heavily on accurate measurements to ensure the final product fits seamlessly with the intended wearer. The process of pattern design involves creating the basic building blocks that form the building blocks of various clothing styles. These basic blocks serve as templates for various components of the garment, including tops, sleeves, skirts, and pants as discussed above (Armstrong, 2014). Each block is created based on the exact measurements of the person wearing the garment or standard measurements are used to create the blocks and then using the grading technique they can be customized. This personalized approach ensures that the final product not only conforms the standard sizes but also fits the wearer's unique body shape and proportions. To begin the pattern design process, measure key areas of the body, including the bust, waist, hips, and various lengths such as the torso and arms. These measurements are transferred to a paper or digital platform to create the basic building blocks finalizing the garment for stitching. Pattern design not only has the ability to create closely fitted garments that improve the silhouette of the wearer. At first the blocks are made according to the person measurements, which minimizes the major requirements for modifications, which gives more accurate, and efficient garment making process. This process is very important in fashion industry, where items are being produce in large numbers of same sizes. This process helps the designer to sketch their imagination till the end product (Datta & Seal, 2018).

A block is a two-dimensional representation of a section of a garment without seam allowances or style details. Once you have created the basic blocks, you can modify them to create different styles and designs (Armstrong, 2014). By designing a pattern, you can customize it by adjusting dimensions and incorporating design elements such as pleats, darts, gathers, and seam placement.

This flexibility makes pattern design a versatile technique that can accommodate a wide range of design tastes and fashion trends. Pattern design is a skill that requires a deep understanding of garment structure, anatomy, and design principles. The pattern maker checks the lightness (adding space for comfort and ease), focuses on grain lines (fabric weave direction), and cut lines (design features).

It is important to observe and measure every body shape for mass production of the clothes (Cho, et al., 2005). Moreover, observation on every detail is very important to make sure that every panel of a pattern fits accurately during finalizing the garment for stitching. Pattern design not only has the ability to create closely fitted garments that improve the silhouette of the wearer. At first the blocks are made according to the person measurements, which minimizes the major requirements for modifications, which gives more accurate, and efficient garment making process. This process is very important in fashion industry, where

items are being produce in large numbers of same sizes. This process helps the designer to sketch their imagination till the end product (Datta & Seal, 2018).

For the design and construction of any garment, creation of flat pattern is very important. Pattern maker not only make a sketch of a garment but also sometimes they make different sheets known as specification sheet or easy Tech pack which helps them to understand the making of a garment. This process of pattern making is now a days more common in Garment industry(Rissanen, 2007). This process involves 2-dimensional patterns that becomes the base for cutting and assembling the garment. The process requires these essential skills in the fashion industry that provide systematic approach of translating designs in well-fitted garments to the pattern users and the designers. To start creating flat pattern, measurements of the body is required. These measurements are used for creating basic blocks of the measurements. When basic blocks are created, the designer can convert that pattern into any design. This includes the addition of seam allowances, darts, pleats and gathers for the adjustments of style according to the wearer liking(Matthews-Fairbanks, 2018). Pattern maker always make sure that created patterns with modifications and adding design elements always have proper fit and accurate proportions in the silhouette. Another important step in pattern making is grading technique that helps in making multiple sizes of original design. The pattern maker adjusts the dimensions that cover different body sizes. This plays a crucial role in mass production of any garment in different sizes covering different ranges of body types (McKinney et al., 2012).

Prototype Making

Prototypes are made from inexpensive fabrics like muslin and calico for testing the fitting and design for final fabric cutting(Kristensen & Ræbild, 2016). This trying process to fit model helps to identify the problems and if any adjustments required. The process not only ensures the matching with original design but also shows that the garment fits well and looks perfect on the body. The moment the pattern is created it completes the process. Now the pattern maker is able to cut the main fabric to create a final garment. The final pattern includes all details like seam allowances, notches and every detail that is mandatory for creation of a garment. Flat pattern production is very important in the apparel production cycle for several reasons. First, we ensure precision and fit by adjusting the pattern to individual body measurements, resulting in a garment that is not only stylish, but also comfortable and well-fitting. Then, increase production efficiency by optimizing the cutting process, minimizing fabric waste, and streamlining the entire manufacturing process. The flexibility of flat pattern creation allows designers to experiment with different styles, shapes, and design elements.

This allows you to create unique and innovative garments while maintaining a consistent and precise fit. Additionally, the creation of flat patterns facilitates the adaptability of designs to changing fashion trends, allowing designers to stay current and meet consumer demands.

Tools for Pattern making

For proper working the pattern maker needs proper tools. To minimize the errors occurred due to misunderstanding and for suitable communication, the pattern maker should know and understand the basic terminologies. Tools that are important in Flat pattern making and Pattern drafting are as follows straights pins, straight pin holder, scissors (Paper and Fabric), pencil pens, Rulers (Flex general ruler, tailors square, triangular scale), Curve Rulers (French Curve, hip curve ruler, hemlapels), Hanger hooks, push pins, stapler and remover, Simple transparent tape, twill tape, Notch

marker, tracing wheels, Awl, Metallic weights, measuring tape, tailors chalk(Stanley, 1991). Despite the numerous advantages, fabrication of flat samples presents many challenges. Creating advanced sewing patterns can be complex and requires a deep understanding of garment construction, fabric properties, and design principles. The success of flat pattern creation often depends on the skill and

expertise of the modeler, developed through experience and training in fashion design. With technology integration, many modelers are using computer-aided design (CAD) tools to increase accuracy and streamline the model creation process. These digital tools not only provide opportunity for saving the patterns but also offers the level of efficiency that a traditional craftsman cannot achieve to some extent.

Action Research in Pattern Making

According to Researchers reflective approach in teaching is about collecting data, analyzing the behaviors, beliefs, assumptions and teaching methodology. All the collected information is use to set ground for evaluating reflection activity about teaching. The action research as described by Donald Schon that reflection in both during and after the action adds another concept by differentiating between them (Schön, 1991 updated 2013).

When it comes to pattern making, action research serves as when applied to pattern making, an interactive and engaging method that helps in improving skills and all the activities that a pattern maker passes through (James, 2007). The method includes the continuous planning, for taking action after observing all the aspects that aims to refine and improve the practicing skills. It starts with the identification of participant's current skills and knowledge and provides the starting assessments areas. An organized research plan is developed that identifies the loop holes (James, 2007). This consists of trainings, workshops, new techniques and technology introduction. This will involve active participation of participants in all planned activities by introducing advance practices in pattern making.

The action research application, specifically reflection in and on action, becomes an important aspect of learning process in pattern making. This learning process that fosters continuous improvement and development (Norton, 2009).

Self-Reflection in Pattern making

Practical reflection for pattern making students: When pattern making students actively participate in professional activities such as: when participating in workshops or training courses; Reflection is a basic skill that challenges to think critically and adapt in real time as they experiment with new pattern design techniques and incorporate innovative techniques into practice (Seifert & Chattaraman, 2016).

It is an important skill to reflect on our own learning procedures and it helps to improve learning, in both work and general based education (van Velzen, 2015). This self-reflective learning is divided in knowledge and execution process and there is difference in having knowledge about it and applying the self-reflection activity (van Velzen, 2015). Two basic models for reflection are established known as conventional and leading models. Four stages are included in the conventional model with includes, experience, analysis, and learning outcomes for future use. On the other hand, the leading model involves facilitator-led instruction to guide teaching and self-reflection (Seifert & Chattaraman, 2016).

Reflection in education has developed an interest in both students and researchers to think critically and differently after Dewey's cutting-edge work, which has played an important positive role in students' self-reflection, critical thinking, and in professional development skills. There are different definitions of self-reflection in different literature (Lew & Schmidt, 2011). According to Dewey, self-reflection is a thoughtful and continuous examination process of knowledge that is considered by supporting evidence and its possible conclusions. Mann et al and Dewey's definition of self-reflection share similarities. As Boud et al explain self-reflection is one's personal experience referred to as Cognitive and expressive activities that one is involved in to explore the way that leads to their new understandings and admiration. According to another researcher Moon, self-reflection is more about a continuous process of learning. As defined, thinking more about something and trying to figure it out is not an easy task. All the

above definitions focus on different environments but share similarities which focus on a purposeful thinking process (Lew & Schmidt, 2011).

This continuous reflective process not only improves the ability to adapt but also develops problem-solving skills when actively performing (Lew & Schmidt, 2011). In problem-based learning, students collaborate in small groups addressing the problem related to their field of study. Students engage themselves in self-reflected activities and invest their time in the critical thinking process and their learning experience (Lew & Schmidt, 2011).

Thinking over the connection between problem-solving and learning is the most important part and need of problem-based learning to assist in comprehensive and adaptable knowledge (Lew & Schmidt, 2011).

After completing a task or project, Pattern Maker Students enter the action-reflection phase. This retrospective analysis is conducted after conducting research activities such as workshops and the integration of new methods and technologies (Bengtsson, 2003). During this stage, students engage in reflective discussions and document their experiences, insights, and evaluations of the implications for their pattern-making practice. This retrospective analysis, including both successes and challenges during the process, helps provide a deeper understanding of the effectiveness of the implemented changes. This serves as a basis for informed decision-making in future pattern-building efforts and helps students refine their approaches and methods. Powerful learning tailored for pattern-maker students a loop is created. They can adapt and learn in real-time by actively engaging with pattern-making tasks and applying reflection in practice. Then, after completing the task, move on to a reflection session where you more fully analyze your experience through behavioral reflection. This consistent integration allows students to improve their pattern-making practices over time as insights from real-time experiences are systematically captured. This continuous improvement loop fosters a culture of continuous learning and development among pattern-making students, improving skills and contributing to the overall quality of pattern-making results.

The overall goal of this research initiative is to assess the underlying pattern knowledge of participating students and evaluate the impact of targeted research interventions. This study begins with a pre-study assessment aimed at determining participants' initial understanding of pattern-making techniques. Participants will experience an immersive learning experience through a structured research intervention that incorporates a variety of teaching methods and resources.

A qualitative study is an engaging and collaborative process in which the investigator gets a chance to learn and reflect the life experiences because In a qualitative study, the researcher is involved directly and closely with the participants and the collected data which includes their personal experiences, perceptions, and their understanding (Sword, 1999).

After the study, thorough analysis and comparison of data collected before and after the intervention will allow us to identify significant improvements, changes, and gaps in participants' knowledge and skills. A conceptual understanding based on the reflective aspects of the study, the final aim is to summarize the conclusions and recommendations. This includes not only insights into the effectiveness of research interventions to improve understanding of pattern-making, but also the need for adaptations, additional support mechanisms, or further research to optimize learning outcomes in the field of pattern-making techniques Includes practical recommendations for opportunities.

Motivation

My motivation for this research is to find the loopholes in Flat pattern-making and analyze the before and after effects of self-reflection and learning. This will help to identify the difference while observing the participants working and understanding the concepts of pattern-making among the participants.

Objectives

- a) To evaluate the existing knowledge of pattern-making among students experiencing it after research implementation.
- b) Evaluate and compare the collected data before and after the research performed to see the main improvements, changes, and loopholes in participants.
- c) To measure the status of understanding at the starting phase of pattern pattern-making technique.

METHODOLOGY AND MATERIALS

As part of this comprehensive, ongoing research initiative, each week, 98 participants enrolled in the Bachelor in Design major in Fashion and textiles, consisting of 11 boys (11.2%) and 87 girls (88.7 %) documented their evolving understanding of creating an unwind pattern or pattern design through a series of 11 tasks over four months as shown in Figure 01 and 48 students participated in focus group discussions as shown in Figure 02. The evolving nature of the submissions reflects the depth of understanding as participants grapple with the complexities of various pattern-making tasks. A notable observation has increased curiosity and questions among the participants. Delving into the theoretical background of each task reveals a deeper understanding of the topic.

The trial-run method is used to extract a basic understanding of pattern-making in participants. The reason behind this assessment is to evaluate the participant's current knowledge and skills including conceptual understanding regarding pattern making. The qualitative data collection method is used by doing written exams, giving demonstrations, and conducting interviews. As soon as the base is established, the second phase of the study starts.

This phase includes different teaching methods, resources, and tools for the improvement of the participant's learning process regarding pattern making. Engaging in workshops, hands-on exercises, multimedia resources, and learning in groups has refined the needs of the participants.

After the study, a focus group discussion is conducted to evaluate the knowledge and pattern-making skills learned by participants. This activity is shown in Figure 03. Participants do more than just perform tasks. Actively seeking to understand the why and how behind each technique reflects a deeper level of learning and critical thinking. This activity allows the students to learn the unlearn areas of pattern-making techniques. Multiple tasks varying from trousers to collars to various adaptations of women's clothing create an opportunity for in-depth analysis. The intent of the examination and exploration of the scope of shallow patterns targets the identification of patterns in the learning curves and simultaneously it unveils the areas of potential changes alongside consistent strength. The multifarious varied approach assists in a better understanding of how to maneuver the complexities of pattern-making for multiple types of garments. For inquisitiveness, Research intervention specifically set apart by theoretical documentation and structured tasks proves to be the incentive. Not only does it provide the basis to be a beneficial platform for skills training, but it also intrigues and sparks interest in the theatrical basis of the payment pattern creation. After weekly working on reflections, participants explain their experiences, thought processes, and challenges for further work. Discussions between the researcher and students create a continuous feedback process which adds more value to the learning process of pattern-making.

As the study progresses, analysis of the data collected digs deeper to identify specific trends, challenges, and areas of significant improvement among participants. The aim is not only to measure the effectiveness of the research intervention in improving technical skills but also to understand the underlying factors that contribute to a deeper conceptual understanding of flat patterning.

The university allowed to conduct the research on Humans and Human subjects were selected after the approval of the University.

Activity Assignments

A total of 11 topics were selected for the self-reflective exercise which includes band/mandarin collar, One-piece collar, Two-Piece Collar, Reglan Sleeve, Kimono Sleeve, Women's and Men's Trouser, Men's T-shirt, Men's Basic Sleeve, One-piece Dress, and Women dress shirt (Self Sketch). Each week students were asked to make flat patterns of different topics. Once they completed their task, they were supposed to inquire about it, finding its history and its functionality. This activity encouraged deep exploration and understanding. This process of making patterns served as a hands-on learning experience, allowing students to apply theoretical knowledge in practical.

During this activity, students learned more about the historical and functional importance of the specific patterns that are used with different cut lines with different importance. Researching about them also helps the students to understand how flat patterns changed over time and due to which problem, they were changed as a solution. Every student's thinking process helps them understand what they learn and how it is making a difference in their past understanding of specific patterns. They not only acknowledge pattern-making learning but also why they are important in our society. Working on similar tasks helps everyone learn differently from each other's understanding.

In conclusion, this week-after-week action not only sharpened students' and their abilities in pattern-making but also developed an all-encompassing understanding of its verifiable, social, and utilitarian measurements. It served as a stage for collaborative learning and individual development, empowering students to lock in fundamentally with the subject matter and determine significant bits of knowledge from their encounters.

Data collected from Focus group discussions

For qualitative analysis, focus group discussions were conducted by naming every group as Alpha 1, Alpha 2, Bravo 1, Bravo 2, and Charlie 1, Charlie 2. Every group consisted of 8-10 participants and they were asked 10 questions which included their self-reflection activity experience and a comparison of their understanding before and after research implementation.

Table 1.1

Background Information of Focus Group Participants

Sr No	Age Group	Gender Focus	OccupationPlace
1	21-23	Females Alpha 1	Student Gujranwala
2	21-24	2 Male, 6 Alpha 2 Females	Student Gujranwala
3	21-25	7 Females, Bravo 1 1 male	Student Gujranwala
4	22-25	Females Bravo 2	Student Gujranwala

5 22-25 1 Male, 7 Charlie 1 Student Gujranwala

Females

6 23-26 4 Females, Charlie 2 Student Gujranwala

4 Male

Additional personal details of participants are shown in Table 1.1. All the Discussion group members took part in a written activity and completed the personal information form. One of our research team members recorded the discussion and took notes during the discussions and each discussion lasted for 10-18 Minutes. All discussions were conducted in Urdu and they were later translated into English.

The discussion group focuses on the following questions:

- a) Did you learn more about making patterns after engaging in a self-reflection activity?
- b) Can you describe any specific insights about pattern making that you gained after the self-reflection activity?
- c) In what ways did your pattern-making approach change after this activity?
- d) What kind of obstacles have you faced before, which is solved by the implementation of the self-reflection activity?
- e) How would you characterize the impact of self-reflection on your overall confidence and proficiency in pattern-making?
- f) Did this activity make you try new ways of making patterns? If yes, how did it change your understanding?
- g) After this activity did you notice any improvements?
- h) Did this activity make you notice the more in-depth details of patterns?
- i) Did you find any new ways of making patterns by doing this activity?
- j) Compare your interest in Flat pattern making before and after the self-reflection activities.

DATA ANALYSIS

Focus group discussion data was transcribed carefully, and for a better understanding, we constantly analyzed the data by comparison procedure. Before we examined the data, we analyzed the textual content to define the important concepts by using coding techniques. Codes were assigned to every concept and then we moved towards the categorization of the concepts. An external researcher was involved to establish our research's reliability and trustworthiness.

FINDINGS

Four core themes emerged in our research, which include (a) Thinking about yourself helps you learn better, (b) Doing Research is important for better understanding (c) History, functionality, theoretical and practical, (d) More ideas to explore.

Thinking about yourself helps you learn better

The first theme explains that understanding oneself plays a vital part in improving the learning experience within the domain of flat-pattern-making method activity. This investigation looks into self-reflective activities which allows participants to clarify their special learning inclinations and forms. When connected to the complexities of flat-pattern making, this reflective approach includes inquiring related questions about ease, challenges, and favored strategies. This self-awareness changes the learning travel into a dynamic investigation, associated with creating a personalized outline of one's association with the subject. Within the setting of activity inquire about, where dynamic experimentation is key, understanding oneself gets to be a powerful instrument. It enables

people to deliberately select activities and strategies adjusted to their particular learning styles, turning self-awareness into an important resource for optimizing the adequacy of flat-pattern-making procedures. It was noticed during the discussions that participants were more confident about making patterns of any sketch in their minds. Some participants agreed that a similar method of activity is fine but on the other hand, some participants believe that theoretical work comes first before practical. Participants stated that this activity not only urged them to find research articles but also moved them to the library to clear their understanding.

“Firstly, we thought what this activity is about and how it will help us in pattern making as it is a practical subject not the theoretical but it started helping in better understanding.” (Alpha group 2)

They went on to explain that at the beginning of this activity, they were unaware of how to find articles and required information about the particular topic but they went to the library to find books on pattern making and started reading it. As they started reading, they discovered that each part of clothing, such as collars, pants, and shirts has a specific purpose and they serve accordingly. As they continued reading and exploring the group not only observed and absorbed new information but also began to actively share their views and thoughts to another idea as well. They all started giving their input and second the statements of their peers. This process helps them transform themselves from knowing nothing to exploring, and how to approach the task of creating and learning patterns for clothing. In the crux, their journey of 4 months evolved from an initial state of confusion to a combined passion for the art and science of fashion design.

“We can’t imagine that flat pattern-making will be so easy and we will be able to make patterns of any sketch.” (Alpha Group 1)

They are shocked after performing these activities they are now able to make patterns so easily. They feel a sense of accomplishment as these activities were initially found challenging and they became stepping stones in their learning journey.

“Initially we only make patterns as instructed by the instructor but by the last 4 months it has been a changed and new journey for us it has urged us to open books and articles and find what is required. After doing one research it has created a curiosity in us to research more about its further variations.”

(Alpha Group 1)

“The first step was a bit difficult but once it was done it was easy for us and then practicing the same activity over four months has made us more pro in it.” (Charlie Group 2)

Moreover, they added and compared themselves to the previous way of learning patterns. The experience they got has motivated them to seek more knowledge about the pattern’s transformation throughout the years and what was the need for change. That helps them to understand the proper

functionality with comfort of the clothing. Now they don't just follow the instructions but try to learn and explore independently to create innovative patterns for their continuous improvements.

All the members seem to be excited to learn more about the flat pattern making techniques. Doing Research is important for better understanding. Active participation in research, a wealth of knowledge is unlocked that is beyond the surface of flat pattern making. This helps in understanding the basic principles. This makes us think about our techniques and how they be done in a better way. It's like looking in a mirror to observe what happening and what can be done more for more improvements. Hence self-reflection becomes an important and valuable tool for improvements, in troubleshooting challenges and experimenting with new innovative ideas. Research always acts as a guiding light, which moves us towards the path of mastery of flat pattern making.

"Research should be an important part of every assignment not for specifically pattern making but in every subject. That broadens our thinking ability, and develops our interest to explore more." (Bravo Group 1)

The members further explain that it has added more to their understanding and helps them feel more confident. Expression of confidence regarding pattern making has blown them away, the sense of knowing the facts and functionality has helped them make new pattern and has developed the understanding of how to make patterns of their sketch. They came to know that every pattern consists of several pieces and all pieces are made separately for better execution of making a pattern. This not only helps to convert patterns into a garment but it also helps to reduce fabric wastage.

"Research helps us to find the background or history of the specific piece of cloth. Previously we did pattern making with no previous knowledge of that assignment but now we have come to know its purpose of existence like why Reglan sleeve came and what its need was then." (Charlie Group 2)

Moreover, they added that by this we came to know how functionality is added in a garment because the pattern is all about functionality.

"Before research, we were unaware of the evolution of the particular part of clothing and how it has changed in few decades and we started comparing the latest form we are havin with it." (Charlie Group 1)

History, functionality, theoretical and practical When we think of Flat pattern making, it's vital to reflect on distinctive viewpoints. We should look at how designs have evolved, and what was its needs and functionality and discover how we can do it by reading about it and finally create a final pattern of it.

"Previous pattern making was all about basics and now we are exploring all the patterns in new ways of its historical background, their functionality, and applying the gained knowledge during performing the practical. Now we are more confident that we ca transform any sketch into a pattern" (Charlie Group 2)

"We believe that whatever we are doing we must be aware of its history for better understanding. We came to know that many pieces of clothing are originated from Asia and are changed with time." (Charlie Group 1)

More ideas to explore;

After considering the historical and utilitarian perspectives, one may dig into individual inclinations and elaborate choices. Experimentation with different materials, examination of social impacts on patterns, and an evaluation of individual learning forms are all worthy areas of thought.

“We have also explored that for one pattern there are different ways of doing that pattern.” (Charlie Group 2)

“The last activity of converting our sketch into a pattern is not only working on one sketch, if 30 students have 30 sketches, we are working on 30 different patterns and learning from them too, and their different ways of doing the pattern. We have an overview of every sketch that this is how it can be done also.” (Alpha Group 2)

“If we take an example of collars, we don’t know much about it but by trying them with different methods we came to know how we can change basic patterns to different variations. We came to know which collar suits better with which outline. By this, we can read the sketch.” (Bravo group 2)

RESULT AND CONCLUSIONS

In conclusion, self-reflection activity develops a better understanding of Flat pattern-making. After doing these activities participants gain a deep knowledge of the exercises, empowering them to explore the other challenges of pattern-making techniques. Continuously involved in reflective exercises, participants created their personalized understandings and the idea-developing procedures. These self-reflection activities make them able to adjust their approaches towards flat-pattern making. Hence, this activity not only helps them to learn in a better way but it has created their interest in what they are learning practically and theoretically.

DISCUSSIONS

The importance of Reflective activities has increased the understanding of flat-pattern making in the finest way as compared to their past experiences. This helps them to be specific to their progress and they know what to do and where to improve. Also reflecting on their learning and understanding motivates them to find new challenges and improve their skills with time. Strengthening participants is basically to assess their self-awareness learning level and it shows their interest in researching certain topics. This has increased their clear understanding and they know the purpose of it. This has upgraded their ability to do flat-pattern making and has created a culture of change, where they are motivated to look at the modern challenges and refine the previous methods too. By making this activity a major part of their learning process teachers can help students to take control of their learning, and can successfully develop their skills accordingly.

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Declaration of interest statement

I declare we have no conflict of interest regarding the research presented in this paper.

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