

CAN TAILORING SKILLS BE DELIVERED THROUGH E-LEARNING PLATFORM; PERSPECTIVE OF THE THREE-LEARNING DOMAINS (COGNITIVE, AFFECTIVE AND PSYCHOMOTOR DOMAIN)

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ABSTRACT

E-learning is a process of learning where we use the electronic-based platform through the internet. Nowadays, e-learning has become very essential for academia and vocational skills training through the use of the internet. During the ongoing lockdown, the Ministry of Education of Bangladesh is conducting online classes through various e-learning platforms. Education activities have been completed through e-learning but technical education is lagging in Bangladesh in the new-norm situation. With this backdrop, the study has developed a model for teaching tailoring curriculum to train the tailors' course to participants in selected areas of Bangladesh. The approach of this research is classroom action research in e-platform involving teachers to examine common issues. Teachers have followed the three learning domains (Cognitive, affective & psychomotor domains) to make the students skilled in tailoring via e-platform. The study will show how the new teaching method was applied using e-platform and the impact of the proposed teaching method in the gradual improvement of the psychomotor skill in the tailoring of the students. This study implies the NSD program of the Ministry of Education. It is expected that the study will help to improve psychomotor skills by a proposed teaching system using an e-platform in the new-norm situation.

Keywords: E-learning, Lockdown, NSD Program, Online Class, Tailoring Skill.

INTRODUCTION

E-learning is a new method of learning for the students of Bangladesh. During the Covid-19 outbreak, when physical distancing is recommended, E-learning is welcome. E-learning has become a widely accepted concept mostly in the developed countries. Distance e-learners are

expected to participate in an e-learning environment and interact with the content, colleagues, and facilitators through distance education technologies (Aboderin & Laleye, 2019). Being a developing country with limited access to the current advanced technologies, Bangladesh is not an exception. As of 1 June 2020, globally, 1.2 billion learners (68% of the world's total enrolled learners) were affected due to the education institute closure in 144 countries, according to UNESCO data. Since 17 March all the educational institutes in the country have remained closed to prevent the spread of COVID-19 among the student. In this situation, e-learning has gained priority in the education sector. The learning activities refer to using electronic technologies for learning and teaching. Vocational skill is a crying need for educating people to bring them a profession which is needed in all areas of life. Though tailoring is a psychomotor skill, it needs proper knowledge and also motivation to be a professional tailor. That's why teachers have developed a new teaching method that combines 3 domains of learning e.g. Cognitive, affective, and psychomotor domains using E-platform.

Problem Statement

A large number of students are availing the benefits of E-learning and it is expected to be an effective and efficient mode of the teaching e-learning process in days to come. While starting the corona pandemic Bangladesh Government has conducted an on-line class in different sections. In this situation, Gausal Azam Maizbhandari Technical Institution (GAMTI) of Fatickchari Upazilla of Chattogram District has been conducting online classes since April 2020. The teachers have prepared a new teaching method for tailoring via e-platform.

Objectives of the Study

The objectives of the study are given below:

- To build up a new model for teaching and learning tailoring skills using e-platform in the new-norm situation.
- To ensure the different methods and tools for applying the three domains of teaching and learning.
- To find out students' psychomotor skill performance in tailoring according to psychomotor domain theory.

An Introduction to the Method

Teachers have made a new model for teaching tailoring skills using an e-platform. Teachers applied the proposed teaching systems which include cognitive, affective, and psychomotor learning system action by three learning domains. At first, teachers have started their class with an affective learning system to them motivated and willing to tailoring skills. Then they have given the basic knowledge of tailoring following cognitive learning and lastly applied psychomotor domain. While applying the psychomotor domain, teachers have assessed students' psychomotor skills to evaluate the performance in tailoring assessments of psychomotor skills.

Research Questions

- How can a new teaching method be build-up for tailoring skills in the new-norm situation?
- How can the proposed method of tailoring skill learning be applied?
- How the performance of the students in psychomotor skills can be assessed via e-platform?
- What is the outcome after applying the proposed teaching and learning method?
- Is it possible to deliver the tailoring skill through via an e-platform?

LITERATURE REVIEW

E-Learning: E-learning can be defined to be the use of electronic devices and technology for learning new information and skills (Moubayed et al., 2018). Creation, dissemination, managing data, and strong information are some of the activities performed in the academic institution through different information and communication tools called e-learning (Muhammad et al., 2016).

Learning Domains: Benjamin Bloom had developed a taxonomy of Educational objectives. It consists of three domains namely cognitive, Affective and psychomotor. The cognitive domain is related to the thinking process. The affective domain is connected with feelings and attitudes and the psychomotor domain includes motor skills. The selected teaching strategies must enhance knowledge (cognitive), skills (psychomotor), and attitudes (affective) (Ahmad et al., 2018). Learning is not a solitary task of memorizing information, but an interactive process of refining one's understanding and developing one's skills (Omoniyi & Torru, 2019).

Cognitive Learning: Cognitive domain deals with how a student acquires processes and utilizes the knowledge that focuses on intellectual skills and is familiar to educators (Kasilingam & Chinnavan, 2014). Bloom's taxonomy (*knowledge, comprehension, application, analysis, synthesis, and evaluation*) is frequently used to describe the increasing complexity of cognitive skills as students move forward from a beginner to a more advanced level in their knowledge (Kasilingam & Chinnavan, 2014).

Affective Learning: Affective learning relates to values, attitudes, and behaviors and involves the learner Emotionally (Renner, 2008). Affective It can ensure a gradual growth in feelings or emotional areas (attitude) which helps the students to be confident and active to perform the psychomotor skill. The Affective learning domain includes 5 steps *Receiving* (willing to listen), *Responding* (willing to listen), *Valuing* (willing to be involved) *Organizing* (willing to be advocate) *Characterization* (willing to change one's behavior, lifestyle, or way of life) (Kasilingam & Chinnavan, 2014).

Psychomotor Learning: Practical teaching requires paying attention to the application of all teaching strategies in the psychomotor domain (Ahmad et al., 2018). Without applying the psychomotor domain psychomotor Dave (1970) develops a psychomotor theory that represents 5 degrees of competence while performing a psychomotor skill. The 5 stages of this theory are *Imitation, Manipulation, Precision, Articulation, and Naturalization*.

METHOD & MATERIALS

Participants: The total population is 30 who were the participants of the paper. All the students are regular students of "Gausul Azam Maizbhandari Technical Institute".

Table 1. Participants according to their gender and age

Gender	Age in year						Total participants	
	16-18	19-21	22-24	25-27	28-30	31-33	F	(%)
Female	1	1	3	5	0	1	11	100
Male	0	2	1	3	5	8	19	0
Total	1	3	4	8	5	9	30	100 %

The Overall Framework of the Study: A proposed teaching method for e-platform was applied to the participants including three domains of learning for tailoring skill learning. Teachers have chosen the **Zoom Cloud Platform** for a collaborative teaching and learning system. After applying the new teaching method in the online platform, the psychomotor skill assessment of the participants was performed according to “Dave psychomotor theory”. For assessment of participants’ performance, teachers have followed 5 points Likert scale from very good to very bad.

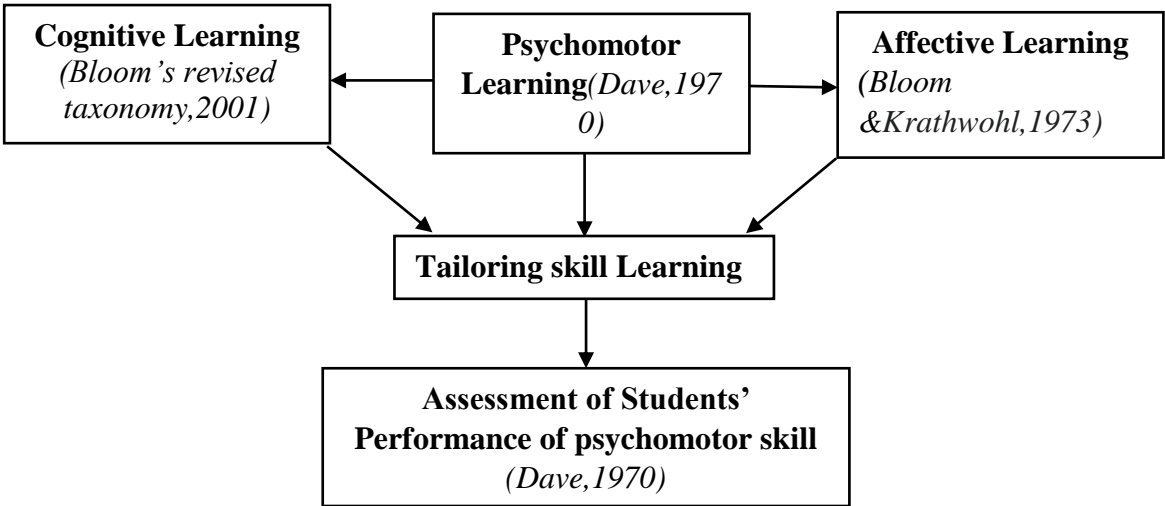


Figure 1. Proposed Teaching framework for tailoring skill learning

Affective Domain: Though tailoring is a psychomotor skill but to make the students properly skilled with awareness, belief, willingness, motivation, the affective domain is effective. For instance, when a student believes in his/her ability or capability to successfully perform a task, he or she may be successful in the task (Olusegun et al., 2020). Motivation is a fundamental element in students' learning to achieve success point (Nijat, 2019). So teachers have decided to make the students aware of, motivated so that they can be skilled in tailoring to build a good profession in tailoring.

Table 2. Proposed teaching method for Affective learning using e-platform

Domain	Teaching method	Tools and Platforms
Receiving	Teachers tried to motivate and make the students aware of learning tailoring skills.	Slide sharing in zoom platform
Responding	Teachers discussed with the students about their opinion, willingness about tailoring learning and made them co-operative in the class.	Question-Answer segment& Group Discussion
Valuing	Teachers made the students understand why they are learning tailoring skills.	Slide share in Zoom platform.
	Teachers asked to share their preferences, choice, and valuation about tailoring skill learning.	Question-Answer segment
	Students were asked to make a justification about the learning.	Short presentation.
Organizing	Teachers and students made a discussion by sharing their new ideas by modifying the existing theme of tailoring or designing dress patterns.	Group-discussion & Question-answer.
Characterization	The teacher asked the students to describe how the tailoring skill can be a profession or can change the way of life.	Group-discussion & Question-answer.

Cognitive Domain: Tailoring skill is not only psychomotor-based learning but also knowledge-based learning. The students should have basic knowledge about tailoring, sewing machine parts, different types of equations for the specific types of dress, different dress design, etc.

Table 3. Proposed teaching method for Cognitive learning using e-platform

Domain	Teaching method	Tools and Platforms
Remembering	Teachers asked the students to remind them what they had learned in the previous class And gave a short overview about what they learned.	Collaborative discussion & slide sharing.
Understanding	Teachers gave a presentation showing different types of functions & equations of dress patterns for sewing.	Power-point slide sharing in Zoom platform.
	Teachers made the students familiar with the parts of the sewing machine.	3-D drawing & 3-D animated video by screen sharing in Zoom platform.
	Teachers showed different patterns of sewing, different types of stitches, thread, etc.	Power-point slide sharing & providing e-books in Google Classroom
Applying	Teachers showed the application of the different equations, patterns in different dress patterns.	Power-point slide sharing & tutorial video.
	Teachers taught the way to choose the right thread, stitch, etc. for specific dress patterns.	
Analyzing	The teachers analyzed the tailoring knowledge and made comparative analysis in a different type of fashion sense and dress design.	Power-point slide sharing & tutorial video.
Evaluating	The teacher asked students to make a judgment about what they learned from the class.	Collaborative discussion between teachers & students.
Creating	Teachers asked the students to give a presentation & viva.	Micro-soft Power-point slide sharing.
	Teachers asked the students to Conduct quizzes.	“Google-form submission” in Google class-room

Psychomotor Domain: After gaining proper knowledge about tailoring, teachers have followed the psychomotor domain to make the students skilled in tailoring. Teachers have followed Dave's psychomotor theory because they wanted to make the students skilled gradually. While

performing the psychomotor skill, teachers also applied affective learning system to keep the students motivated and active.

Table 4. Proposed teaching method for psychomotor learning using e-platform

Domain	Teaching & Learning method	Tools and platforms
Imitation	Teachers performed tailoring skills like cutting cloths or sewing and the students tried to do by imitating their teachers.	Using Webcam in Zoom platform
	Teachers advised them to practice at home.	Providing tutorial video in “Google classroom”
Manipulation	The next day, students tried to do the skills by themselves. The teacher guided to perform the skill.	Using Webcam in Zoom platform
	Students were asked to perform cutting clothes by taking measurements using equations or sewing cloths part by part by following the direction of teachers.	
	Teachers gave pieces of advice to practice at home by themselves with the help of tutorial videos made by teachers.	Providing tutorial video or recorded class in “Google classroom”
Precision	After practicing for 2 days, teachers asked them to make the machine ready, cut cloths or sew it without giving any direction. At this level, they got precision level by practicing a lot at their home before.	Using Webcam in Zoom platform
	Teachers gave home-task so that the students can practice themselves at home	Uploading assignment in Google Classroom
Articulation	The next day, students were asked to perform sewing from first to last which means they have to integrate all the skills. They had to make the machine ready, take the body measurement, cut the cloths, and then sewing the cloths and make the dress ready to wear.	Using Webcam in Zoom platform
	Teachers gave pieces of advice to practice at home by themselves with the help of tutorial videos made by teachers.	Providing tutorial video in “Google classroom”
Naturalization	After practicing for 2 days, students perform the same skill naturally without thinking more.	Using Webcam in Zoom platform
	Teachers also ask them to solve similar types of problems like sewing a similar type of dress.	

RESULTS

After applying the proposed teaching method for tailoring, teachers wanted to evaluate the performance in tailoring as a psychomotor skill. The proposed teaching method was followed from the first week to last week and the result is the mean value of the total weeks of the course. Because the learning domain is repeated each week as it takes a week to complete a dress-making. Their performance was monitored in the live class using a webcam in the Zoom cloud platform.

Assessment Of Psychomotor Skill: For the assessment of participants’ performance,5points Likert scale as very good to very bad was used according to their performance.

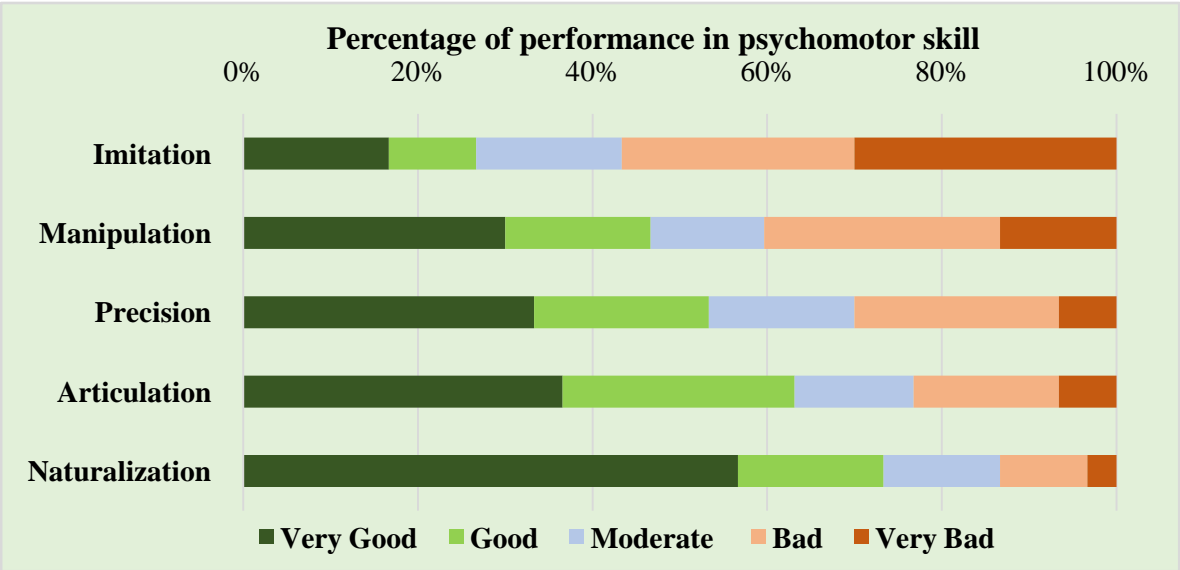


Figure 1. Percentage of performance in perspective of “Dave psychomotor theory”

From figure 1, it can be found that in imitation level only 16% students’ performance very good and 10% students’ performance was good. A large number of students’ performance was bad at the initial level. But the students were able to improve their performance gradually. It shows that in the final stage of the psychomotor domain, which is called Naturalization, the percentage of good performance had increased. Around 56.67 % of students performed very well, 16.67 % performed good, only 10% were very bad and 3.4 % were very bad at their performance. In each level, the percentage of good performance has increased in comparison to the previous phase of the Psychomotor Domain.

Rate of Improvement of Psychomotor Skill: The rate of improvement of the psychomotor skill has been found from imitation level to naturalization level. So, a graph a has been drawn according to the percentage of the students at a very good and good level based on their performance. This graph will show how the level of performance develops with each level of competence of Dave's theory.

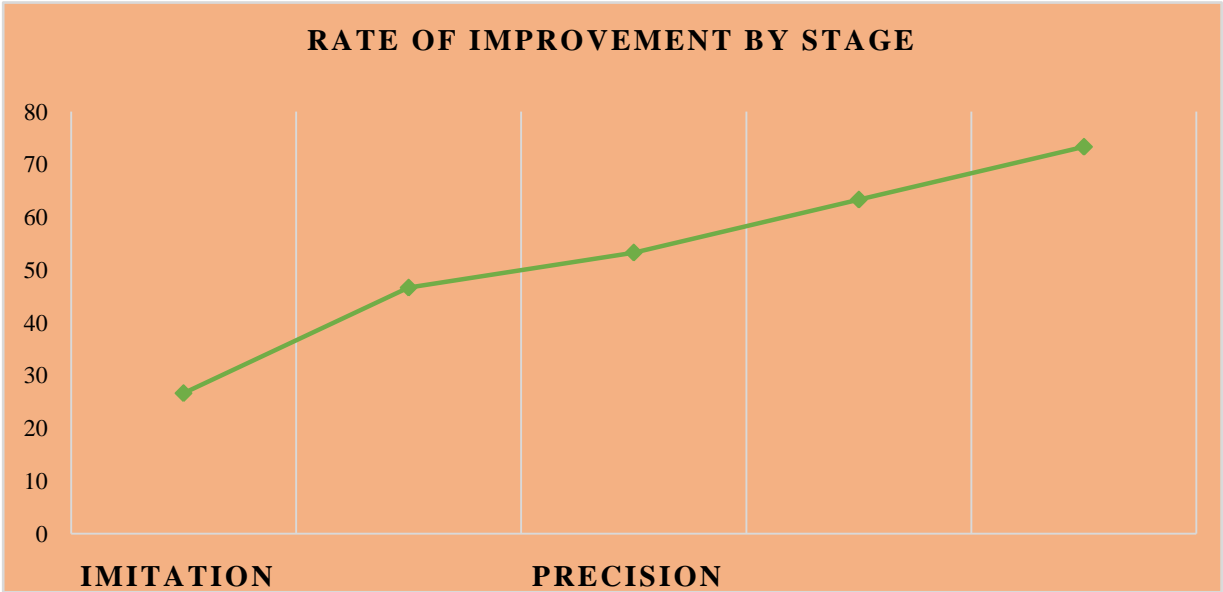


Figure 2. Improvement of performance by phases of Dave theory

The figure 2 shows that the percentage of students at a good level has increased in each step of the Dave theory. At the imitation level, the percentage of good performance was lowest where at the naturalization level, the percentage of good performance is highest. That means, we can say the level of performance in tailoring has been improved according to the stages of Dave's theory. The cognitive domain is needed for having proper knowledge before starting tailoring skill and the affective domain is applied from first to last week to make the students motivated, interested, and active in the class always.

DISCUSSION

The proposed teaching method was fruitfully applied and has a good outcome in the students' performance in tailoring skills. It is expected that the new teaching method will be beneficial for learning vocation skills via e-platform. E-platform is a good opportunity to ensure

“Collaborative and Face-to-Face” teaching and learning systems for the students and the teachers. In this new-norm situation, as the e-platform is the best way for teaching and learning, the proposed method can be applied.

Some limitations found while applying the action. As the study is e-platform based, the network is a big issue for the rural areas of Bangladesh as a developing country. Few students have a lacking of ICT efficacy. Some students are discouraged by their families as parents are not aware of vocational learning. They have failed to improve their skills. Some following measures will be taken to overcome the barriers faced by the students so that tailoring can be delivered through e-learning in the future perfectly for all of the students. There is the need to assist students to go through their academic, psychosocial and financial life with less stress so that they can perform greatly and not become drop-out in life (Ojewola, 2020). The measures are:

- The students who have lack ICT efficacy will be trained so that they can continue with the tailoring class via e-platform.
- Those who have financial problems buying devices or sewing machines will be provided a soft loan so that they can remove the barriers to continue with the learning process.
- The parents who are discouraging their children will be inspired by showing the possibility of learning via this system.
- Finally, a concern can be created for the government to ensure sufficient network facilities in rural areas.

At last, we can say the customized skill like tailoring can be delivered through e-platform in the perspective of the proposed teaching method. By using psychomotor domain theory, a vocational skill can be perfectly assessed. According to the study, we can decide to continue the tailoring skill learning program of the institution in the online platform which is a crying need in this new normal situation.

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