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**IMPROVING STUDENTS' PERFORMANCE  
EXAMINATIONS ON THE KEYBOARD THROUGH  
SELECTED PEDAGOGICAL APPROACHES: A STUDY  
OF THE DEPARTMENT OF MUSIC, FEDERAL  
COLLEGE OF EDUCATION, EHA-AMUFU**

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**Abstract**

The teaching and learning of keyboard pieces involves complex processes and multiple factors. This is to say that performing keyboard pieces especially during the individual performance examinations is the most difficult aspect of music examination that upset the students of music in a great way. Therefore, this study attempts to identify the causes of students' challenges and difficulties in their keyboard learning. Through the adoption of some effective pedagogical approaches, the researcher hopes to minimize their challenges and maximize their individual performance examinations on the keyboard. The Department of Music, Federal College of Education, Eha-Amufu was a reference point. The researcher adopted a survey research design. The population for the study comprised thirty (30) students selected through simple random sampling. Data were gathered through the use of questionnaire which was designed to find the causes of students' difficulties in keyboard learning. The results show that the students of the above named institutions have three kinds of problems as regards keyboard learning such as practicing without setting up a goal, practicing without engaging in chordal analysis, and practicing only when they have spare time. These are

unhealthy attitudes in keyboard learning. Different pedagogical approaches were proposed by the researcher to address the challenges such as engaging in goal setting, engaging in chordal analysis and constant practice. Based on these findings, the researcher recommends that keyboard instructors should emphasize the importance of goal setting, chordal analysis and frequent practice to their students.

**Keywords:** Keyboard playing, Individual performance examination, Pedagogical approaches, Music students' evaluation.

### **Introduction**

When we talk about improving students' individual performance on the keyboard, we are indirectly referring to the best teaching pedagogical approaches to be adopted by music educators in order to impart on the learner qualitative keyboard skills that are germane in producing a competent keyboard virtuoso performer to meet up with the global musicological challenges. It should be kept in mind that in teaching keyboard "one of the essential skills of a good instructor is to diagnose problems accurately and to solve them effectively for the student (Tomita and Barber, 1996, p. 135). This is to say that teaching and learning are indispensable in keyboard learning. To enable the reader have a clear focus on the researcher's direction or frame of thought before delving into the identification of the causes of the students' difficulties in keyboard learning, teaching and learning need to be defined and explained in details.

## **Teaching**

Izuagba (2009) asserts that teaching refers to the various activities undertaken by a more experienced and knowledgeable person to enable the other to learn. This concept of teaching is from the faculty theory that emphasizes the cultivation of the intellect. Alabeke (2010) also defined teaching as a conscious and deliberate effort by a mature and experienced person to impart information, knowledge and skills to an immature or less experienced person with the intention that later, the learner, will learn or come to believe what he is taught on good grounds. Olatunji (1996) posits that teaching is a social function that aims at necessary growth in others. Oyekan (1994) saw it as all purpose profession engaged in human resources development for individual and economic growth.

The above definitions have shown that teaching is a multifarious task that should be undertaken by someone who has the skills as it deals with behaviour modification. Teaching is nothing else but brushing the knowledge and wisdom already bestowed on a child as an innate ability by a teacher who is seen as a guru or remover of darkness. The task of teaching must be carried out by those that have the skills of teaching because the mistake or error of a teacher is bound to affect a whole race, a whole nation and indeed generations.

## **Learning**

On the other hand, various theories have been developed by psychologists in an attempt to define the term learning. Marx as cited in Chauhan (1978) defines learning as “relatively enduring change in behaviour which is a function of prior behaviour usually called practice” (p. 117). Ekeruo in Chukwu (2006)

observed that “learning is a natural phenomenon developed by man in the process of seeking solution to his numerous problems” (p. 21). In other words, it is a relatively permanent change in behaviour as evidenced by change in performance through practice. The implication of this is that before we can reliably say that learning has occurred, it must be relatively permanent, and also, there must be a change in behaviour due to training or practice.

Having explained the two concepts, the researcher can reliably say that learning keyboard pieces especially for individual performance examination can be difficult at any age, but young children especially students typically face more significant challenges than people of any other age group while attempting to tackle this incredible musical instrument. The challenges according to Okeke (2014) are analogous to the teaching of a foreign language (p. 53). Experience has shown that learning keyboard pieces and performing it during the individual performance examinations seems to be the most difficult aspect of music examinations that upset the students of music in a great way. A situation where the students are not guided properly or provided with enabling environment, some sorts of phobia always emerge during the actual presentation. Phobia can best be described as an anxiety disorder characterized by extreme and irrational fear of simple things or social situations. It exists in so many ways. Some people develop phobia when they see large open spaces, while others are unable to tolerate certain situations or animals. To the students of music, their phobia is evident in the area of keyboard performance which can equally be called the phobia of stage fright. These challenges sometimes, are due to

numerous negative behaviours students exhibit during keyboard education which the researcher intends to elaborate in due course.

It could also be as a result of frustration arising from their inability to practise frequently or due to lack of interest in music education. The difficulties of learning keyboard pieces are also affecting the music students of Federal College of Education, Eha-Amufu. In other words, they are not exempted as they also experience such difficulties when learning their keyboard pieces.

### **Federal College of Education Eha-Amufu (FCEE)**

Eha-Amufu is a town in Isi-Uzo Local Government Area, of Enugu State. It is about forty-five kilometres (45km) North- East of Enugu State and about sixty kilometres (60km) South-East of Nsukka. Geographically, Eha-Amufu lies between the latitude of  $7^{\circ}$  and  $6^{\circ}$  East of the Greenwich. It covers the landmark of about 1600 square kilometres with an annual rainfall of about 122.5mm and a projected population of about 75,208 people as recorded in the 2005 census. According to Music student hand book, Federal College of Education, Eha-Amufu (2015), the defunct Anambra State House of Assembly passed a law establishing the College of Education, Eha-Amufu on 21st, February, 1981 (p. 3). The College functioned under that law until when the Federal Government of Nigeria under decree no. 34 of 4th May, 1993 established the Federal College of Education, Eha-Amufu upon the closure of the State College of Education.

### **Statement of the Problem**

Keyboard as we all know, is a polyphonic musical instrument that can play many notes at once, thus increasing the learning complexities for the students many times when compared to other musical instruments. In other words, learning keyboard pieces can

be difficult at any age, but young children especially students face more significant challenges than people of any other age group while attempting to tackle this musical instrument. Therefore, when we talk about individual performance examinations on the keyboard, many students used to be disturbed due to some of the negative emotions and challenges they face while learning their keyboard pieces. These difficulties are also affecting the students of Department of Music, Federal College of Education, Eha-Amufu. As result of these challenges in keyboard learning, the students of the above named school have discovered crooked means of taking their individual performance examination just to pass their examinations. This ranges from:

1. Playing a keyboard piece which they think is very simple during the individual performance examinations other than the ones assigned to them. They usually do this when they notice that the lecturer that assigned the pieces to them is not in the examination panel where the student is scheduled to take his or her individual performance examination.
2. Indulging in the act of using one particular keyboard piece already learnt and played several times, for subsequent similar examinations.

These are unhealthy attitudes in keyboard education because they dampen the learning effects. Therefore, this paper attempts to identify the causes of these difficulties in students' keyboard learning, and possibly, put forward effective pedagogical approaches to maximize the individual's performance

examination of the students on the keyboard in the above named school.

### **Purpose of the study**

The purpose of this study is to identify the causes of students' challenges and difficulties in their keyboard learning and through the adoption of some effective pedagogical approaches, the researcher hopes to maximize their individual performance examinations on the keyboard.

### **Research Questions**

The following research questions below were formulated by the researcher to guide the study.

1. What are the perceptions of the students of the above named school with regards to individual performance examinations on the keyboard?
2. What are the major causes of students' difficulties in their individual performance examinations on the keyboard?
3. How can we improve the students' individual performance examinations on the keyboard?

### **Population of the study**

The population for this study consists of thirty two (32) music students of the above named institution.

### **Sample of the study**

The researcher having considered the limited number in the population sampled some respondents from the entire population.

This is to say that thirty (30) students make up the study sample. They were selected through simple random technique.

### **Theoretical Framework**

The theoretical framework of this study was built on the concepts and principles emanating from Edward Lee Thorndike's theory of learning. Edward Lee Thorndike (1874-1949) is generally regarded to have been the foremost educational psychologist. Thorndike stated the elements of his theory of learning in 1913 where he observed that connections are formed in the nervous system between stimuli and response. These connections according to him are illustrated by the symbols S-R. It could also be described as 'bond theory of learning'. According to Thorndike, learning takes place by trial and error. He was of the view that when there is no existing solution of a problem to the learner, the learner usually adopts the method of trial and error. He first, tries one solution. If it does not help him, he rejects it, then, he tries another and so on. In this way he eliminates errors or irrelevant responses which do not serve the purpose and finally discovers the correct solution. He maintained that the trial and error method through which the learner has to pass, are in form of goal and block or hindrances. Thorndike propounded three laws of learning in an attempt to explain how learning occurs.

1. Law of readiness: He regarded this law as the first primary law of learning. According to him, the 'law of readiness' or the 'law of action tendency' is a law that states that learning takes place when an action tendency' is aroused through preparatory adjustment, set or attitude. Readiness means a



preparation for action. If one is not prepared to learn, learning cannot be automatically instilled in him, for example, unless the typist, in order to learn typing prepares himself to start, he would not make much progress in a lethargic and unprepared manner.

2. Law of exercise: The second law of learning is the ‘law of exercise. This law states that practice helps in increasing efficiency and durability of learning and according to Thorndike’s S-R Bond Theory, the connections are strengthened with trial or practice and the connections are weakened when trial or practice is discontinued. The ‘law of exercise’, therefore, is also understood as the ‘law of use and disuse’ in which case connections or bonds made in the brain cortex are weakened or loosened.
3. Law of effect: The third law is the ‘law of effect. It states that steps leading to satisfaction stamp in the bond or connection. Satisfying states lead to consolidation and strengthening of the connection, whereas dis-satisfaction, annoyance or pain leads to the weakening or stamping out of the connections. In fact, the ‘law or effect’ signifies that if the responses satisfy the subject, they are learnt and selected and while those which are not satisfying are eliminated.

### **Experimental Evidences of Thorndike's Trial and Error Theory:**

Various experiments have been performed on men as well as animals to study this method. Thorndike made several experiments on rats and cats. One important experiment has been discussed here.

#### **Thorndike's Experiment**

Thorndike's most widely quoted experiment was with the cat placed in a puzzle box. The hungry cat was put in the puzzle box. A fish, as an incentive, was put out-side the cage a little beyond its reach. The box was designed in such a way that the door of the cage can be released by some simple act like depressing a lever inside the cage. At first, the cat made a great deal of varied attempts to reach the food in a trial and error fashion such as jumping up and down, clawing at the bars, scratching the cage, whaling around trying to push the bars, pawing and shaking movable parts of the cage etc, but all the attempts did not work. Eventually by chance her paw fell on the loop of the rope and the door opened. The cat jumped out immediately and ate the fish. When next time, the cat was put in the same box again, it took it less time in coming out and in the subsequent trials, the time decreased further. Thorndike stated that the cat learnt how to reach its goal. However, how this theory supported the current study was fully explained in the discussion of the results in the preceding pages.

#### **Methodology**

The researcher adopted a survey research design. The population for the study comprised thirty (30) students that were randomly

selected. Data were significantly gathered through the use of questionnaire method. Thirty (30) copies of the questionnaire were distributed to the respondents. The questionnaire consists of twelve (12) items and was designed with four point Likert-type-scales. The researcher adopted direct delivery technique. The respondents were given enough time to fill the questionnaire. Thereafter, all the questionnaires that were distributed were equally recovered from the respondents. The interpretation was based on Strongly Agree (SA) = 4 points, Agree (A) = 3 points, Strongly Disagree (SD) = 2 points, Disagree (D) = 1 point. Most of the respondents that participated in the study were males 90% (N = 27) while females made up only 10% (N = 3).

### **Methods of data analysis**

The research data were analysed using the mean. The mean score value that is below 2.5 for each of the questionnaire item was considered negative and was rejected, while a mean score of 2.5 or above was considered positive and was accepted for confirming the position of the respondents on the issue. The benchmark of 2.5 was arrived at using the formula thus;

$$\frac{\sum fx}{N}$$

### **Research Question 1.**

What are the perceptions of the students of the above named school with regards to individual performance examinations on the keyboard?

**Table 1.** Respondents' responses on the perceptions of individual performance examinations on the keyboard.

As shown in table 1 above on the perceptions of students on the

S /n	Description Of Questionnaire Item	Responses				Interpretations			
		SA	A	S D	D	No. Of Resp.	X	- x	Decision
1.	I like individual performance examination on the keyboard	4	2	10	14	30	56	1.9	Rejected
2.	I dislike individual performance examination on the keyboard	14	8	5	3	30	93	3.1	Accepted
3.	I partake in keyboard individual performance examination because I do not have options.	14	8	4	4	30	92	3.0	Accepted
4.	If I have options, I will not partake in keyboard individual performance examination	15	7	5	3	30	94	3.1	Accepted

keyboard learning, it is obvious that only few of the respondents take the keyboard learning for they like it. The mean score was 1.9, while majority of the respondents dislike it, partake in it because there is no option and would not partake in it if there is an option. 3.1, 3.0, and 3.1 represent the mean scores respectively.

**Research Question 2.**

What are the major causes of students' difficulties in their individual performance examinations on the keyboard?

Table 2. Respondents' responses on the major causes of students' difficulties in their individual performance examinations on the keyboard.

S/ n	Description Of Questionnaire Item	Responses				Interpretations			
		SA	A	S D	D	No. Of Resp.	x	- x	Decision
1.	I do not usually set up a goal to be accomplished before practicing my keyboard pieces.	16	6	5	3	30	9 5	3.2	Accepted
2.	I only practice my keyboard pieces without chordal analysis.	10	9	5	6	30	8 3	2.7	Accepted
3.	I practice my keyboard pieces only when I have spare time.	12	7	5	6	30	8 5	2.8	Accepted
4.	I do not practice my keyboard pieces for as long as 2 hrs or more.	15	4	5	6	30	8 8	2.9	Accepted

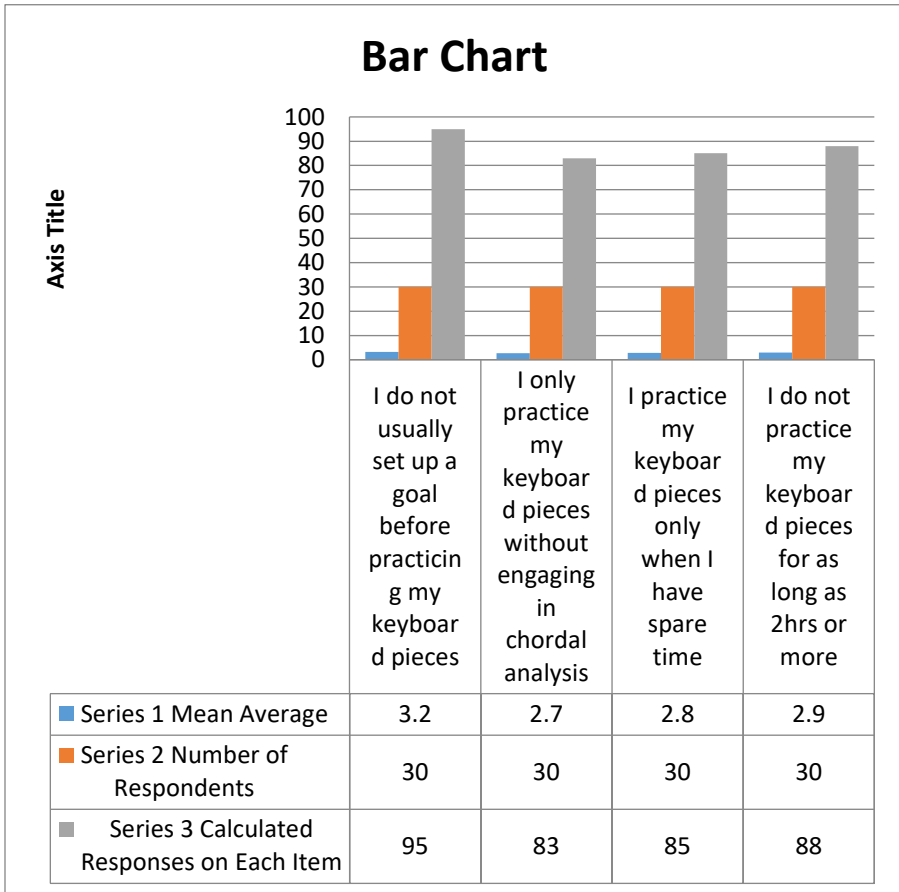


Fig. 1. Bar chart graph showing the causes of students' difficulties in keyboard examination.

As shown in table 2 & figure 3 above, on the major causes of students' phobia on keyboard exams, majority of the respondents affirmed that they practice without a goal and chordal analysis,

and only practice when they have spare time which cannot last for two hours or more. The mean scores are 3.2, 2.7, 2.8, and 2.9 respectively.

**Research Question 3.**

How can we improve the students' individual performance examination on the keyboard?



Table 3. Respondents’ responses on how to improve the individual performance examinations of students on the keyboard.

S / n	Description Of Questionnaire Item	Responses				Interpretations		
		SA	A	SD	D	No. Of Resp. x	- x	Decision
1	Setting up a goal before practicing keyboard pieces gives a direction of purpose.	11	11	4	4	30 89	3. 0	Accepted
2	Engaging in chordal analysis before practicing keyboard pieces is very important	9	12	5	4	30 86	2. 9	Accepted
3	Frequent practice on the keyboard is a necessity.	17	5	4	4	30 95	3. 2	Accepted
4	2 hrs or more a day is an ideal length of time for keyboard practice.	13	7	5	5	30 88	2. 9	Accepted

As shown in table 3 above, majority of the respondents affirmed that some of the ways to improve students’ individual performance examinations on the keyboard include setting up a

goal before practicing, engaging in chordal analysis, engaging in frequent practice and practicing for 2hrs or more daily. The mean scores are 3.0, 2.9, 3.2, and 2.9 respectively.

### **Findings**

The researcher made the following inferences based on the data analysed.

1. It could be seen that a majority of these respondents affirmed that they do not set up a goal before practicing their piano pieces.
2. They also practice their piano pieces without engaging in chordal analysis.
3. They practice only when they have spare time.

### **Discussion of the Findings**

It is very important to state at this juncture that Thorndike's theory of trial and error and his three basic laws of learning are very crucial in this study. They have direct implications of the researcher's views as regards to pedagogical approaches for improving students' individual performance examinations on the keyboard. The result of the study indicates that only few students of the above named institutions take the keyboard pieces because they like it while a majority of the students dislike it; they partake in it because there is no other option and would not partake in it if there is an option. The implication of this is that there is lack of learning motivation which leads to students' lack of interest in playing keyboard pieces. This is what Edward Lee Thorndike in his theory of trial and error refers to as law of effects. Satisfying states lead to consolidation and strengthening of the connection,

whereas dis-satisfaction, annoyance or pain leads to the weakening or stamping out of the connections. Learning motivation as opined by Ali & Peynircioğlu (2006) is proactive tendency to initiate and maintain learners' learning behaviours to help them achieve their goals.

Secondly, the result also affirmed that students' practice their keyboard pieces without setting a goal to be accomplished. They do not engage in chordal analysis and they also practice their keyboard pieces only when they have spare time which cannot last for two hours or more. This is unhealthy attitude in keyboard learning. The law of readiness by Thorndike lays emphasis on goal setting. He believed that learning is guided by a total set of attitude which determines not only what the person will do but what will satisfy him. What this implies is that unless a student sets to get first position and has the attitude of being at the top, he would waste away the time and would not learn much. Hence, learning is affected more in the individual if he is set to learn more or to excel. Frankly speaking, without a goal or drive, learning is impossible. A goal is a force that compels an individual to act or to behave in a particular direction. The reason why most people never reach their goals is that they do not define them. Therefore, when students set up goals before engaging in any task, it gives them direction of purpose. Even if they do not reach all their goals, just having them helps them focus on what is important. Goal setting is the process of establishing direction for learning (Marzano; Pickering, & Pollock, 2001). However, if implemented correctly, it has the potential to positively impact learning. Secondly, the result also showed that the students do not engage in chordal analysis before learning their keyboard pieces. Engaging in chordal analysis before learning any particular

keyboard pieces is a sure way to success. It enables the students to understand chord relationships within a given piece of music and thereby offering them an opportunity to learn the keyboard pieces at a fast pace.

Furthermore, Thorndike's law of exercise also compels us to accept a well-known fact that practice makes perfect or better. To master a complex situation according to Thorndike just like keyboard pieces or to elaborate a task, practice is a must. It is not possible to handle each difficult situation in a single trial, no matter what the degree of motivation or reward is. Each task initially seems to be difficult and fatiguing but as practice continues, it becomes smoother and requires less effort. There are some prerequisites for building and improving students' technical skills and musicality skills on the keyboard such as; having relaxed body posture, good coordination of non-tensed fingers, hands-wrists-arms-shoulders-legs, concentration, hard work (Ozturk, 2006, p. 18). Building those basic and fundamental behaviours in keyboard learning and achieving positive results depends on both the students' and teachers' characteristics and efforts. It is a long time process. Therefore, a student who practices his or her keyboard pieces only when he or she has spare time is expected not to do well during the individual performance examinations. One hour keyboard lesson in a week is not enough for the complicated processes of keyboard learning. This is because mistakes that could have been identified and corrected during the practice time have been cut short by inadequate time on the side of the students. This seemed to throw them off balance during the actual presentation. People often develop fear for something if they are not properly prepared.

### **Suggested Pedagogical Approaches**

Having diagnosed and identified the causes of students' difficulties in their individual performance examinations on the keyboard, such as failing to set up a goal before practicing their keyboard pieces, playing a keyboard pieces without first engaging in chordal analysis and only practicing when they have spare time, the researcher is of the view that the following pedagogical approaches be adopted by the students to minimize their challenges and maximize their keyboard education.

These are;

1. Goal setting
2. Chordal analysis to establish the relationships between all the notes in keyboard pieces.
3. Practicing between 2 hours or more daily.

However, to measure the impacts of goal setting, chordal analysis and frequent practices on students' keyboard learning during the individual performance examinations in the above named school, the previous results of thirty (30) respondents when they did not participate in any of the above suggested approaches were compared with the current results of their individual performance examinations having participated in all the above suggested methods. Out of thirty (30) students that participated in the study, a majority of them made adequate growths having utilized the above approaches as compared to their previous results.

### **Educational Implications of Thorndike's Trial and Error Theory**

1. Practice leads a man towards maturity. Practice is the main feature of trial and error method. Practice helps in

reducing the errors committed by the child in learning any concept.

2. Habits are formed as a result of repetition. With the help of this theory, the wrong habits of the children can be modified and the good habits strengthened.
3. The teacher can improve his teaching methods making use of this theory. He must observe the effects of his teaching methods on the students and should not hesitate to make necessary changes in them, if required.
4. The effects of rewards and punishment also affect the learning of the child. Thus, the theory lays emphasis on the use of reward and punishment in the class by the teacher.
5. With the help of this theory the teacher can control the negative emotions of the children such as laziness, anger and jealousy, etc.

### **Summary and Conclusion**

This paper advocates that in as much as students want to improve on their individual performance examinations, lecturers and students have roles to play. Hence, there is a need for a supportive teaching by the lecturers; and students on the other hand, should involve themselves in frequent practices. They should also break down their pieces into segments and ensure that they use the right fingers at the right time. Also, the findings of this study could offer a range of ideas and assist music teachers of instruments to

build their students' intrinsic motivation in learning, thereby fostering lifelong music making on the keyboard.

### **Recommendations**

The following recommendations were suggested by the researcher based on results of the study

1. Establishing a National Organization for Keyboard Instructors in Nigeria just like the National Guild of Piano Teachers in the USA, could help in increasing the quality of keyboard instructions given to students.
2. Keyboard instructors should at every opportunity they have emphasize to their students the importance of goal setting or well-defined goals, before practising their pieces.
3. Keyboard instructors should also emphasize the importance of chordal analysis to their students before engaging them in keyboard pieces.
4. Students should also be convinced to work harder and get rid of the incorrect keyboard playing habits.

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