

Pedagogical Method and Styles among Physiotherapy Educators in Nigeria: Prediction Equation for Teaching Method

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Abstract

Objectives: Styles are important to effective teaching. Studies on teaching styles and methods of Physiotherapy (PT) Educators (Ed) are scanty in Nigeria. This study assessed pedagogical method and style of PT Ed in south-west Nigeria.

Method: Ethical approval, and informed consent were obtained for this cross sectional survey. Procedure for data collection was explained to randomly selected PT students' assessors. Twenty seven blinded PT Ed of 3 selected universities were assessed, through classroom observation for pedagogical method and styles, using checklist rating forms for classroom observation and evaluation. Two assessors each observed a class at a designated time, and independently filled out checklists forms. Subsequently their ratings of items on the forms were reconciled, and recorded. Data were analyzed with descriptive, and inferential statistics at $p < 0.05$.

Result: Result showed that 58.0%-68.6% PT Ed were good in terms of pedagogical method, except with clarity of presentation. Physiotherapy Ed in UI institution had a heterogeneous display of teaching styles, while those in OAU had a homogenous display of Personal Model style. Physiotherapy Ed with 11-20 years of experience were good in 4 of 5 pedagogical styles, contrary to those with 0-10 years of experience who were good with just Personal Model style. The majority of PT Ed were not good as delegators. Teaching method improved with years of experience, as teaching method score equaled $2.67 - 0.032 \times \text{year}$.

Conclusion: Physiotherapy Eds were therefore mostly good with teaching method and styles, except clarity of presentation, and in delegating duties to students.

Keywords: Teaching Style, Teaching Method, Grasha's Model, Physiotherapy, Nigeria

Introduction

Effective teaching in medicine, like physical therapy requires flexibility, energy, and commitment amidst a busy background of clinical care. Successful health field teaching also requires that teachers are able to address learners' needs and understand the variations in learners' styles and approaches^[1]. Teachers can accomplish these requirements while creating an optimal teaching-learning environment by utilizing a variety of teaching methods and teaching styles. The major challenge faced by educators in any health related educational program include delivering enormous amount of knowledge in a very tight and narrow schedule, relating students' need to programs need, and reorganizing curriculum in varying degree, from didactic teacher-centered and subject-based teaching to learner centered teaching^[2].

A teacher's quality exerts enormous influence on students' learning outcomes^[3]. Teaching styles refer to a teacher's preferred way of solving problems, carrying out tasks, and making decisions in the process of teaching^[4]. The strategic function of teaching in an educational process cannot be over emphasized since creating an optimal learning environment for students will enhance their acquisition of knowledge and skills which in turn makes them educated and useful members of society^[5]. The pedagogical model allocates full responsibility to the teacher for what subject will be learned, how it will be learned, and ultimately whether the concept has been learned by the student. Use of a variety of teaching methods and styles, exposes learners to both familiar and unfamiliar ways of learning which provide both comfort and tension during the process, ultimately giving learners multiple ways to excel^[2].

Teaching is a complex and personal activity that is best assessed and evaluated using multiple techniques and broadly-based criteria. Oyekan^[6] described teaching methods as those methods, techniques or approaches, individuals or group of teachers select and use in actual classroom situations. There are various methods of teaching and whether one is appropriate or not depends on many factors such as subject or topic to be taught, learning characteristics of the learner, and the social-cultural environment. Measuring teaching effectiveness is important because the evidence produced is used for major decisions about future academic pursuits. A

comprehensive teaching assessment helps educators to refine their teaching skills, critically analyze their own performance and their students' performance and implement changes needed to improve teaching^[7].

Teachers have preferred teaching styles, which they revert to in chaotic situations^[2]. Teaching styles are those enduring personal qualities and behaviors that determine how effective teachers conduct their classes^[8]. Grasha^[8] outlined five positive teaching styles including expert, formal authority, personal model, facilitator, and delegator. According to Grasha's integrated model of teaching style categorization: expert preceptors tend to guide and direct learners through learning process; formal authority preceptors engage in a position of power and authority because of their exemplary knowledge and status over their students; personal model preceptors lead by example, whereby students learn through observing and copying the teacher's process; facilitator preceptors focus on fostering independence, hands-on learning and exploration; and delegator preceptors act as resource to students, answering questions and reviewing their progress as needed.

Some studies have been carried out on teaching method, for example, a study on effective teaching methods at higher education level, was carried out across various departments in the faculty of art, University of Karachi. The aim of the study was to find out the various teaching methods used by university teachers, to teach graduate students in different departments of faculty of Arts. Results showed that the majority of student assessors rated lecture as their best teaching method^[9]. Salwani et al^[10] also studied preferred teaching and learning methods among medical students, with the aim of improving efficiency of teaching and learning methods, and reported that the majority of students preferred interactive teaching and learning, despite the fact that lecture is the most preferred method.

Certain authors however studied teaching styles using Grasha^[8] teaching styles. Teaching styles of English Language educators in Sultan Salahuddin Abdul Aziz Shah Polytechnics, Malaysia was studied, with the aim of identifying dominant teaching styles of English Language educators. Perception and preference of students with respect to their English language educators' teaching styles were therefore investigated. Students reported the three most dominant teaching styles of their educators, were Expert, and followed by Personal Model and then Delegator. It was however observed that students' most preferred teaching style was the Facilitator style, with Formal Authority style being the least preferred. Result of this study showed that students most preferred teaching styles were not frequently used by their lecturers^[11].

Classroom observation remains a valuable part of performance evaluation as well as one of the best sources of information to guide teacher professional growth^[12], and students are most qualified to report on the extent to which learning experience is productive, informative, satisfying, or worthwhile. Students' perception and ratings of teaching methods is a way to suggest improvements in teaching / learning process^[9]. Holly^[13] recommended use of formative, anonymous classroom assessment technique to monitor and facilitate student perceptions regarding course and instructor effectiveness. Additionally, medical educationists have reported that familiarity with learning styles have definite benefit for both teachers and students^[14-15]. The situation among physiotherapy educators in Nigeria is however not so, as data on pedagogical method and styles are scanty among them. This study was therefore done to assess pedagogical method and styles used by physiotherapy educators in south west Nigeria. Relationship of teaching method, and years of teaching experience was also determined.

Methods

Participants involved in this study were physiotherapy (PT) educators recruited from 3 purposively selected physiotherapy training universities, out of the 7 physiotherapy schools in Nigeria. Physiotherapy educators, and physiotherapy students' assessors in physiotherapy departments of the 3 selected universities were involved in the study. Ethical approval for this study was obtained from the Research and Ethics Committee of the Institute of Public Health, Obafemi Awolowo University. Twenty seven blinded PT educators in the physiotherapy departments of 3 selected universities UI, OAU and UNILAG were assessed using a Checklist Rating Forms for Classroom Observation, Evaluation of Course Materials^[16-17] and Teaching Styles^[8]. Assessment of pedagogical method and styles was done by randomly selected student assessors, whose informed consent were obtained.

Procedure for data collection was explained to students' assessors, after which they familiarized themselves with instrument for the study. Physiotherapy educators were subsequently observed by the students' assessors during classroom teaching, and their pedagogical method and styles were assessed, and recorded using checklist forms. Classes were observed at designated times, based on students' assessors' agreement. Two students' assessors each independently filled out the Class Observation Checklist Forms, they also reviewed the Course Materials,

and completed the Course Material Checklist Form. Subsequently they reconciled their ratings of all items of the forms, and then recorded their findings on a consensus form. Authors were present to observe the collation processes. Data obtained were analyzed with descriptive statistics and inferential statistics including regression test at 0.05 alpha level.

Results

General Characteristics of Participants

Three universities, physiotherapy institutions were purposively selected for this study. They were UI, OAU AND UNILAG. Fifty five point five per cent of participants had teaching experience ranging from 0 to 10 years, while those with over 20 years of teaching experience, were few (Table 1). Thirty seven percent PT educators were from UI, 33.3% from OAU, and 29.6% UNILAG, with more males (66.7%) than females. Gender distribution is depicted in Table 1. An uneven distribution was observed among PT educators in OAU, as most of them (77.8%) were males (Table 1).

Pedagogical Method and Styles of PT Educators

Pedagogical method was assessed among PT educators by students' assessors. Assessments were in terms of content knowledge, organization, presentation skills, clarity of presentation, and instructor-student rapport. It was observed that physiotherapy educators were rated as good in teaching method except for clarity of presentation (Table 2). Pedagogical method was compared across selected institutions using turkey hsd test. Results showed that there was significant difference ($p < 0.05$) between teaching methods of PT educators in the 3 institutions, with only UI having a variety of teaching styles, as opposed to OAU, and UNILAG. Pedagogical styles were assessed, and PT educators were described as either Expert, Formal Authority, Personal Model, Facilitator and/or Delegator. It was observed that the majority (63.0%-70.4%) of PT educators, were described as good with Expert, Personal Model, Facilitator and Formal authority styles, but only 44.4% were described as good with delegator style (Table 3).

Pedagogical Styles across Years of Teaching Experience and Institutions

Teaching styles across years of teaching experience were described in this study. It was observed that PT Ed in UI were good in all the five styles assessed. UNILAG was good in Expert and Formal Authority styles, and OAU was only good in Personal Model style (Table 4). There were 3 categories of PT educators based on years of teaching experience. They included 1-10 years, 11-20 years, > 20 years. Physiotherapy Ed with 11-20 years of teaching experience were good with all styles except as delegators. Those with > 20 years of teaching experience were good as Experts, Personal Models, and Delegators, while those with 0-10 years of teaching experience were good as Personal Models (Table 5). The percentage of PT educators not observed to be delegating duties to students were greater than those delegating.

Relationship between Pedagogical Methods and Years of Teaching Experience

A regression test was used to find a relationship between teaching methods of PT educators and their years of experience. It was observed that Teaching Method Score increased as years of experience increased (Fig 1). Regression equation for predicting teaching method score using numbers of years of teaching was therefore developed as follows:

$$\text{Teaching Method Score} = 2.67 - 0.032 \times \text{yr}$$

yr = years of teaching experience

Discussion

Pedagogical method of participants were assessed in terms of content knowledge, organization, presentation skills and clarity, and instructor-student rapport. Classification of teaching styles by Grasha^[8] was also adopted. This is a classification method described as integrated model of teaching style. Participants were classified as Experts, Formal Authoritarian, Personal Model, Facilitator and or Delegator. Participants in this study were PT educators who had taught for between 0 and 30 years. They were categorized into 3 groups accordingly as 0 – 10 years (Group 1), 11 – 20 years, (Group 2), and above 20 years (Group 3).

Physiotherapy Ed were described as proficient in use of pedagogical method, but for clarity of presentation. This means that in terms of content knowledge respondents claimed that physiotherapy Ed demonstrated an in-depth knowledge of courses they teach, as well as a strong understanding of materials being taught. Instructor- student

rapport was described to be qualitative, an assertion to the fact that student were allowed to participate and comment during lectures. Presentation skills of PT Ed positively affected knowledge dissemination to students, and had good organizational skills. This means that PT educators provided course outline that informed students of what was expected during the course, made clear links between what was to be learnt and previous teachings, and proffered knowledge for clinical practice. Physiotherapy Ed were however rated as not good with clarity of presentation. This means that the use of a variety of relevant illustrations/ examples to explain content and elaborate complex information was not adequate.

In terms of styles, it was observed that PT educators were mostly Experts. Expert educators like those in this study guide and direct learners through the learning process. Physiotherapy educators in the middle range of 11-20 years, were described as good with more teaching styles than other age groups. This is because of their exemplary knowledge and status over their students, as Personal Model educators, they led by example, and students learn by observing, and copying them. As educators with good facilitator style, they focused on fostering independence, hands-on learning and exploration.

Physiotherapy educators were described as using the delegator style of teaching adequately, which might be a reflection of certain qualities that may be internal or external. Grasha^[8] considers teaching style as those enduring personal qualities and behaviors that determine how teachers conduct their classes. These personal qualities affect how instructors present information, interact with students, manage classroom tasks, supervise coursework, and train students to behave in a manner suitable in the field and mentor students. Amini et al^[18] in their study found that some educators prefer the expert and delegator teaching styles because they place more responsibility on students and result in increased student learning. Abdul Razak et al^[11] in their study in Malaysia in which Grasha's method of classification was used, however reported that the three most dominant teaching styles of lecturers, as perceived by students, were Expert, followed by Personal Model and then Delegator. The majority of students in this study however preferred Facilitator style. It was also observed that PT Ed of UI used a variety of teaching styles, which may be a better approach to teaching, as opposed to that used by their counterparts in OAU and UNILAG. The use of different teaching styles has been upheld, for example Chapuis^[12], suggested using different styles in teaching to achieve good success in students learning. Grasha^[8] also suggested using variety of teaching styles in addressing diverse learner needs. According to Raymond^[19], using a variety of teaching methods and styles to address learners' needs will encourage adaptability, and lifelong learning in the teaching-learning process

The need to deliver enormous amount of knowledge in very tight and narrow schedule and students' need to retain and effectively interpret is a good reason why medical educators like those in physiotherapy should be good as delegators and facilitators too. A contrary situation in this study. Transitioning from teacher centered instruction to learner centered instruction involves the students taking responsibility for their own learning. Students are then directly involved in the learning process which could only be possible if educators learn to focus on fostering independence of students. This creates an environment where students play a more active role in their learning^[20].

In a traditional classroom, students become passive learner or rather just recipients of teachers' knowledge and wisdom. They have no control over their own learning. Teachers make all the decisions concerning the curriculum, teaching methods, and the different forms of assessment. Huba and Freed^[21] described teacher-centered learning as: students passively receive information, emphasis is on acquisition of knowledge, and teacher's role is to be primary information giver and primary evaluator. Transition from a teacher centered teaching to learner centered is not always easy because in a lot of classrooms, student believe that a good teacher tell students what they are expected to know. Weaning students from their dependence on teachers is a developmental process, for the balance of who's doing the work shifts, involving students, and that gives them a chance to figure out what the teacher is doing and why^[22].

In this study teaching method improved as years of teaching experience of physiotherapy Ed increased. This is in agreement with the statement of Chval^[23] who said experienced and accomplished teachers due to their large years of experience have many skills and much knowledge about teaching, which attributes much success to their teaching. Greenwald^[24] also submitted that years of teaching experience and specific teaching qualifications have significant positive effects on students' achievement.

Physiotherapy educators were described as good with their use of pedagogical method and styles but not with clarity of presentation, and delegating of duties to students. A suggestion to the fact that PT educators in this study mostly engaged in teacher-centered activities. This study therefore has shown the need for PT educators in

Nigeria to focus on efforts to improve teaching method and styles being used, with the aim of achieving, more effective student learning. Authors therefore recommend that physiotherapy Ed in Nigeria should endeavor at being better with their use of delegator style. Physiotherapy Ed in Nigeria should encourage students' independence, and be willing to delegate tasks and responsibilities to the students. In addition, they should be readily available to provide guidance, to facilitate, and to suggest other resources for help. Authors also recommend that physiotherapy Ed should be incorporate the use of variety of relevant illustrations/ examples to explain content, and elaborate on complex information to increase clarity of their presentation. A blend of a variety of pedagogical method and styles is therefore recommended.

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Table 1: Description of Participants

	OUA	UI	UNILAG
	%	%	%
0 - 10years	25.9	18.5	11.1
21 - 30years	3.7	3.7	0
Above 31	0	3.7	0
Males	25.9	22.2	18.5
Females	7.4	14.8	11.1

Keys: % - percentage frequency

Table 2: Pedagogical Method of Participants

Categories	Good %	Not Good %
Content Knowledge	68.6	31.4
Organization	58.0	42.0
Clarity	48.1	51.9
Presentation Skills	67.9	32.1
Instructor- Student Rapport	62.9	37.1

Key:

%:percentage frequency of participants with method

Good: Extreme and very well

Not Good: Adequate, Inadequate, and Not at all

Table 3: Pedagogical Styles of Participants

Teaching Styles	Good	Not Good
Expert	70.4	29.6
Formal Authority	63.0	37.0
Personal Model	66.6	33.0
Facilitator	63.0	37.0
Delegator	44.4	55.6

Key:

% - percentage frequency of participants with style

Good: Extreme and Very well

Not Good: Adequate, Inadequate, and Not at all

Table 4: Pedagogical Styles by Institutions

N=27

Styles	OAU	UI	UNILAG
	%	%	%
Expert	33.3	100	75.0
Formal Authority	33.3	90.0	62.5
Personal Model	60.0	100	37.5
Facilitator	44.4	90.0	50.0
Delegator	33.3	80.0	12.5

Keys:

% - percentage frequency of participants with style

≥ 60%= Good

≥ 75%= Very Good

Table 5: Pedagogical Styles by Age

N=27			
0-10yrs	11-20yrs	>20yrs	
Styles	%	%	%
Expert	53.3	88.9	75.0
Formal Authority	46.7	88.9	50.0
Personal Model	60.0	66.7	75.0
Facilitator	46.7	88.9	50.0
Delegator	40.0	33.3	75.0

Keys:

yrs- years

% - percentage frequency of participants with style

≥ 60%= Good

≥ 75%= Very Good

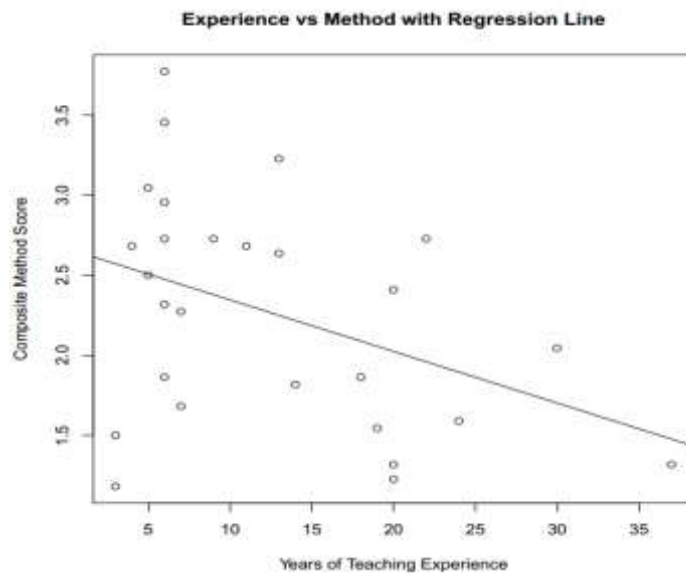


Figure 1: Relationship between Pedagogical Methods and Years of Teaching Experience