

PRE-SERVICE TEACHER EDUCATORS ASSESSMENT OF ADEQUACY OF GOOGLE CLASSROOM APPLICATION AS TEACHING TOOLS IN TEACHER EDUCATION PROGRAMME NIGERIA

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ABSTRACT

Despite the increasing number of technologies and levels of educational technology provided by teacher education programmes, valid and high-level integration of technology into learning and teaching processes is not still as expected, like the Google classroom for learning. The study purposively investigated the adequacy of the Google classroom application as a teaching tool in the training of pre-service teachers by their educators. Three specific purposes and questions were raised. The study adopted a descriptive survey design. Pre-service teacher educators of the Faculty of Education, University of Ilorin, constituted the target population. A simple random sampling procedure was adopted in the selection of 107 out of 197 Pre-service educators. A -14 item five-point-Likert scale researchers designed a questionnaire with psychometric properties of content validity of 0.90, and a reliability index of 0.81 was used to elicit the needed data from the respondents. The statistics collected were analysed using percentage, mean ranking and standard deviation. Moreover, the findings, among others, revealed that the Google classroom application is not adequate for training pre-service teachers. Thus, it was recommended that the Google classroom application should not be adopted in the teaching of pre-service teachers' education programmes since it was found not adequate.

INTRODUCTION

The indisputable fact is that educational institutions play a significant role in providing learning experiences to lead students from the darkness of ignorance to the light of knowledge. The key personnel in the institutions to bring about these transformations are teachers. Teachers are mainly responsible for implementing the educational process at every stage. Thus, it becomes imperative to invest in the preparation and development of teachers to be in tune with the pace of global development (Gümüş et al. 2021). Therefore, the production of competent and skilled pre-service teachers in the teacher education programme is highly required. Teacher education refers to the policies, procedures, and provisions designed to equip teachers with the knowledge, attitudes, behaviours, and skills required to effectively perform their day-to-day tasks in the classroom, school, and broader society (Griful-Freixenet, Struyven, and Vantieghem 2021). Teacher education encompasses all the formal and non-formal activities and knowledge that help to qualify a person to assume the responsibilities of a member of the educational career (Sydorenko et al. 2021). It is a programme that encompasses teaching skills, sound pedagogical theory, and professional skills — teaching these skills requires adequate and efficient pedagogy in the teaching and learning process (Luklianchuk et al. 2021). In today's society, teaching and learning have been taken over by innovation, such as the technology of which digital teaching and learning takes a larger part (Lee 2021). By digital, it means teaching and learning with the aid of Information Communication and Technology (ICT) (Dong and Mertala 2021). Digital Technology has inclined all aspects of human life, including education (Singh 2021). Understanding the usage of technology at the level of pedagogical engagement

provides valuable insights into the relationship that exists between teaching and learning (Antunes, Armellini, and Howe 2021). The evolving technology of classroom communication systems offers a promising tool for helping teachers (instructors) create a more interactive, student-centred and more effective classroom teaching in different forms, such as Google classroom (Gupta and Pathania 2021).

Google Classroom is a new tool presented in Google Apps for Education in 2014. It is a free web-based learning application that encourages collaborative learning among teachers and learners. It is also a learning management system in which the teacher can create classes, invite and welcome learners to the class and start exchanging course content materials (Abuzant et al. 2021). This application empowers learners as well as teachers to communicate announcements, assignments, notes, submit assignments and projects with less difficulty (Jakkaew and Hemrungrote 2017). The adoption of this application for classroom teaching and learning means that teachers should be trained through the use of Google classroom apps which give room for students to access classroom activities from the comfort of their desired location. The three vital skills required of a professional teacher are teaching skills, pedagogical skills and professional skills; an amalgamation of these skills would serve to create the right knowledge, attitude, and skills in teachers, thus promoting holistic development (König et al. 2021). It is against this backdrop, and the study investigated pre-service teacher educators' assessment of the adequacy of Google classroom application in the teaching of the pre-service teacher in Teacher Education Faculties of Nigerian Universities. The following research questions guided this study; (1) What is the assessment of pre-service teacher educators on the adequacy of the Google classroom app in the teaching of pre-service teachers' teaching skills?; (2) What is the assessment of pre-service teacher educators on the adequacy of the Google classroom app in the teaching of pre-service teachers' pedagogical skills? (3) What is the assessment of pre-service teacher educators on the adequacy of Google classroom app in the teaching of pre-service teachers professional skills.

Who teaches the teachers? Who is a teacher educator? The broadest conception of who is a teacher educator includes everyone who teaches prospective and practising teachers, from their contents and those who teach unique methodological courses to those who supervise student teaching. In their work, Richter, Eric et al. submits that teacher educators are explicitly defined as those who hold tenure-line positions in teacher preparation in higher institutions, teach beginning and advanced students in teacher education, and conduct research or engage in scholarly studies germane to teacher education (Richter, Brunner, and Richter 2021). According to Martini, teaching in teacher education is of two types: the didactic mode and the evocative mode. Didactic teaching implies passing on traditional knowledge or teaching how to do something (Martini et al. 2021). Teachers use the lecture to inculcate knowledge or demonstration to model actions, after which students demonstrate they have learned what was taught either by reciting or writing the material or by repeating the demonstration. Most teachings in the traditional classroom were highly didactic. Pre-service teacher educators taught both the learning processes and the morals attendant to a proper life through moralistic texts. Individual learners acquire skills by observing their educators and emulating what they saw. This makes traditional classroom teaching a process of passing on knowledge that has persisted. Paul Woodring argues that the oldest form of teacher education is the observation and emulation of a master (Bailey 2021). Just as Plato learned to teach by sitting at the feet of Socrates. Aristotle, in turn, learned from Plato (Pappas 2021).

Also, Davis gave an accurate description of what transpired in many teachers training standard classrooms (traditional classroom) (Davis 2021). In these classrooms, pre-service learners were taught how to teach; when or what mood can teaching take place; they were taught when to open the windows in a classroom when to close them; they were taught ways of teaching children with a special endowment; they were taught how a school could be established, and they were taught craft works of a different type. This is to develop in teachers the knowledge and skills of how to do things, as compared to how to think about it. This is also to enable teachers to have a better understanding of the fact that in an ideal classroom situation, learners do not learn the same way (individual differences). Instead,

they learn differently, which requires different approaches to teaching learners. According to Flemming (2001), there are four categories of learners; these are visual learners, auditory learners, reading/writing learners and kinesthetic learners (VARK) (Dehghani 2021). All the above-mentioned learner's type requires particular teaching strategies since they learn in different manners. A pre-service teacher will be exposed to the skills needed to plan and handle teaching and learning effectively in the class, which are different learning styles, classroom management, close observation of learners to be able to know those with learning difficulties among learners. This will also afford them the better skill to be able to understand as well as interpret students with their learning speciality. For instance, they will understand that a student who begins to fidget when asked to sit for long periods of time is not being disrespectful but merely is having a hard time focusing because such a learner may be a kinesthetic learner. That student who is continually doodling is not bored with the lecture but quite the opposite: As for a visual learner, doodling helps him/her focus.

Moreover, that student who raises his/her hand to speak out often, perhaps more often, you might think, than he/ she has something valuable to say, is not trying to stand out or get the teachers' attention or be disruptive: he/ she is simply an auditory learner who processes information best while talking it out. It suggests that individuals can acquire essential skills to impart knowledge, facts, and even abilities through lectures and demonstration in a traditional face-to-face classroom to their students when they are in their practical world. By contrast, the evocative (Google classroom) as applied to the education of teachers suggests that teaching is new art in which teachers evoke from students what they already know and lead them to the acquisition of new knowledge and required skills. As for the Google classroom application, it is designed to be paperless; this implies that the writing and communication skills of the pre-service teacher will be difficult to measure. Writing on a computer word document gives room for spell checking by learners or users while writing their assessments at their end in which the teacher at the other end will see as error-free. According to Kalynychenko, a professionally certified teacher is one who has acquired adequate skills in teaching, pedagogical and professional (Kalynychenko et al. 2021). Teaching skills include providing training and practice in the different techniques, approaches, and strategies that would help the pre-service teachers to plan and impart instruction, provide appropriate reinforcement and conduct the practical assessment. The pedagogical skill also includes the philosophical, sociological and psychological considerations that would enable the teachers to have a sound basis for practising the teaching skills in the classroom. Professional skills thus are concerned with the techniques, strategies, and approaches that would help would-be teachers grow in the profession and work towards the growth of the profession. Teaching all these in a traditional classroom with adequate instructional materials was the suggestion of Summers, Childs & Corney compared to a paperless classroom instruction called Google classroom (Barth and Kater-Wettstädt 2021).

In another study conducted by Martin, its findings revealed that Google classroom usage enhances effective teaching of learners at the college since it keeps students online (Martin 2021). The effective use of online learning technology can pave the way to a better design of online training courses for instructors and educational support programmes that allow students to succeed in the online environment, just like the Google classroom. Google Classroom is also considered to play an effective role in developing the learning abilities of learners with limitations in delivering content knowledge, as was revealed in a study conducted by Zajda (Zajda 2021). Their findings show that the Google classroom was effective in the teaching and learning of social studies as well as English Language class among high school learners. It also improves students' learning abilities in the field of vocabulary development and unit-test. The study shows that although the students can increase the number of vocabulary, they still suffer from specific limitations at the level of content knowledge in comparison with the knowledge obtained based on the textbook and printed material as teaching resources. Thus, this calls for why the study investigated the adequacy of the Google classroom application as a teaching tool in a teacher education programme in Nigeria.

RESEARCH METHOD

The study adopted a descriptive survey style; the choice of the descriptive survey was in line with Bargagliotti, who maintained that it is concerned with gathering information on peoples' opinions (Bargagliotti et al. 2021). Meaning that the choice of this design was considered most appropriate because the study sampled teacher educators' assessment on the adequacy of the Google classroom app for teaching. The target population contained all the pre-service teacher educators in the nine departments of the Faculty of Education, University of Ilorin. The faculty has a population of 197 Pre-service educators, out of which 107 were sampled using simple random sampling techniques in line with Research Advisors' (2006) table for selecting the sample size. A 14 item five-point-Likert scale researchers designed questionnaire was used for eliciting the needed data from the respondents' entitled Questionnaire on Adequacy of Google Classroom Application as Teaching and Learning Tool in Teacher Education Programme in Nigeria. The validity of the questionnaire items was carried out by the experts in the Educational Research and Measurement unit of the Department of Social Sciences Education, the University of Ilorin, to ensure its content validity of 0.90. In line with Bargagliotti, who upheld that the best procedure for validating a research instrument is to give it to a board of experts (Bargagliotti et al. 2021). A test-re-test reliability method was carried out with a sample of 20 pre-service teachers' educators in the School of Education, Kwara State University Malete. A three-week interval period was assumed; the scores of the first were correlated with the scores of the subsequent using Pearson's Product-Moment Correlation Coefficient, and a reliability index of 0.81 was obtained. The questionnaire contained two sections, bio-data, and section B contained 14 items with 5 points responses that are Very Inadequate (VIA); "Inadequate (IA); "Undecided (U); "Adequate (A); and Very Adequate (VA). The data collected were analysed using mean ranking and standard deviation.

RESULTS AND DISCUSSION

To decide on teacher educators assessment of the use of Google classroom app in the teaching of pre-service teachers teaching skills, responses from items one to four in Table I cumulated and recoded, that is, "Very Inadequate (4.1 – 7.2); "Inadequate (7.3 – 10.4); "Undecided (10.5 – 13.6); "Adequate (13.7 – 16.8); and Very Adequate (16.9 – 20.0). After cumulating the responses, each respondent can only have a minimum score of 4 and a maximum score of 20. Based on this, a score of; 4.1 to 7.2 = "very inadequate"; 7.3 to 10.4 = "inadequate"; 10.5 to 13.6 = "undecided"; 13.7 to 16.8 = "adequate" and 16.9 to 20.0 = "very adequate" in the teaching of pre-service teachers' teaching skills.

Research Question I: What is the assessment of pre-service teacher educators on the adequacy of the Google classroom app in the teaching of pre-service teachers teaching skills?

Table I. Mean ranking of Google classroom app adequacy and teaching skills

S/No	Items	Mean	Ranking
1	Different techniques, approaches, and strategies would assist the pre-service teachers in planning and imparting instruction to their students after the training.	3.79	2 nd
2	Appropriate skills on how to reinforce their students	3.70	4 th
3	The needed skills that can be used to conduct a valid assessment of their students	3.75	3 rd
4	Effective classroom management skills.	3.82	1 st

To take a decision on teacher educators assessment of the use of Google classroom app in the teaching of pre-service teachers teaching skills, responses from items one to four in Table I above were cumulated and recoded, that is, "Very Inadequate (4.1 – 7.2); "Inadequate (7.3 – 10.4); "Undecided

(10.5 – 13.6)”; “Adequate (13.7 – 16.8)”; and Very Adequate (16.9 – 20.0). After cumulating the responses, each respondent can only have a minimum score of 4 and a maximum score of 20. Based on this, a score of; 4.1 to 7.2 = “very inadequate”; 7.3 to 10.4 = “inadequate”; 10.5 to 13.6 = “undecided”; 13.7 to 16.8 = “adequate” and 16.9 to 20.0 = “very adequate” in the teaching of pre-service teachers' teaching skills.

Findings from Table 2 showed a mean score of the adequacy of the Google classroom app in teaching pre-service teachers' teaching skills is 9.89, which means that the Google classroom app is inadequate in teaching pre-service teachers' teaching skills. By implication, the Google classroom app is not suitable enough to be used by teacher educators to impart all the necessary teaching skills that are required by the pre-service teachers to function well in the teaching profession

Table 2. Mean score of Adequacy of Google Classroom app in teaching Pre-service teachers teaching skills

Variable	N	Minimum	Maximum	Mean	St.D
Teaching Skills	107	4	20	9.89	3.52

Research Question 2: What is the assessment of teacher educators on the adequacy of the Google classroom app in the teaching of pre-service teachers' pedagogical skills?

Table 3. Mean Ranking of Google classroom app adequacy and pedagogical skills

S/No	Items	Mean	Ranking
1	How to adequately prepare instructional materials for teaching their students	3.84	1 st
2	Effective use of instructional materials for teaching	3.57	3 rd
3	Excellent communication skills are needed in effective teacher-student interaction	3.48	5 th
4	Philosophical thoughts are needed to enable them to have a sound basis for practising in their classroom	3.51	4 th
5	Sociological ideas required to practice teaching skills in their classroom	3.34	7 th
6	Psychological knowledge that is considered useful for effective teaching by any teacher in the teaching profession	3.61	2 nd
7	Counselling ability is required to help pre-service teachers grow the teaching profession	3.39	6 th

To decide on teacher educators assessment of the use of Google classroom app in the teaching of pre-service teachers pedagogical skills, responses from items one to four in Table I cumulated and recoded, that is, “Very Inadequate (7.1 – 12.6)”; “Inadequate (12.7 – 18.2)”; “Undecided (18.3 – 23.8)”; “Adequate (23.9 – 29.4)”; and Very Adequate (29.5 – 35.0). After cumulating the responses, each respondent can only have a minimum score of 4 and a maximum score of 20. Based on this, a score of; 7.1 to 12.6 = “very inadequate”; 12.7 to 18.2 = “inadequate”; 18.3 to 23.8 = “undecided”; 23.9 to 29.4 = “adequate” and 29.5 to 35.0 = “very adequate” in teaching pre-service teachers' pedagogical skills.

Table 4 also presented a mean score of the adequacy of the Google classroom app in teaching pre-service teachers' pedagogical skills as 17.87, which means that the Google classroom app is inadequate in teaching pre-service teachers' pedagogical skills. The implication of this is that the pre-service

teachers will not be well equipped in the area of pedagogy and will invariably affect their content delivery. In the long run, the student's performance may be affected.

Table 4. Adequacy of Google Classroom app in teaching Pre-service teachers' pedagogical skills

Variable	N	Minimum	Maximum	Mean	St.D
Pedagogical Skills	107	7	35	17.87	6.19

Research Question 3: What is the assessment of teacher educators on the adequacy of the Google classroom app in the teaching of pre-service teachers' professional skills?

Table 5. Google classroom app adequacy and professional skills

S/No	Items	Mean	Ranking
1	Interpersonal skills needed to relate with students and other colleagues for professional development	3.44	3 rd
2	Computer skills help them in the area of ICT	3.79	1 st
3	Appropriate skills are essential for effective management of both human and material resources	3.59	2 nd

To decide on teacher educators assessment of the use of Google classroom app in the teaching of pre-service teachers professional skills, responses from items one to four in Table I above were cumulated and recoded, that is, "Very Inadequate (3.1 – 5.4)"; "Inadequate (5.5 – 7.8)"; "Undecided (7.9 – 10.2)"; "Adequate (10.3 – 12.6)"; and Very Adequate (12.7 – 15.0). After cumulating the responses, each respondent can only have a minimum score of 4 and a maximum score of 20. Based on this, a score of 3.1 to 5.4 = "very inadequate"; 5.5 to 7.8 = "inadequate"; 7.95 to 10.2 = "undecided"; 10.3 to 12.6 = "adequate" and 12.7 to 15.0 = "very adequate" in teaching pre-service teachers' professional skills.

Table 6. Adequacy of Google Classroom app in teaching Pre-service teachers professional skills

Variable	N	Minimum	Maximum	Mean	St.D
Professional Skills	107	3	15	7.20	3.20

The mean score from table 6 on the adequacy of the Google classroom app in teaching pre-service teachers' professional skills reported 7.20. In line with this value, it shows that the Google classroom app is inadequate in teaching pre-service teachers' professional skills. The implication of this is that the pre-service teachers will not be professionally skilled to handle both human and material resources. This may create a problem for their students and affect the performance of their students in the long run. Taking from the findings of this study, Google classroom application did not consider adequate teaching in the pre-service teachers the necessary skills required of them to handle teaching effectively in the world of work. This is due to the features of a Google classroom app. According to Francom, the Google classroom can be useful for both learners and teachers due to its features (Francom, Schwan, and Nuatomue 2021). As for the students, it provides a streamline of communication and workflow for students. Being free of paper is a vital factor in developing learning strategies in a Google classroom. Thus, students can keep their files more organised and need less stored paperless in a single programme. Therefore, it might not be suitable for teachers in training. The teacher training programme is all-encompassing and involves both the use of theory in terms of contents, pedagogy in terms of teaching strategies, and professional development to keep abreast of the dynamic nature of society as it relates to school. Lastly, the practical aspect of the teacher education programme is the

internship where pre-service teachers will be involved in the practical teaching of all that they have been exposed to. The internship takes a period of six weeks to three months; during this programme, the pre-service teacher educators are mandated to assess pre-service teachers in the process and give comments for corrections and adjustments. All these are not possible with the use of Google classroom, which means that it cannot be used to produce a complete teacher. These findings disagree with the findings of studies such as Diccico (2016), whose findings show that the Google classroom was effective in social studies as well as English Language class among high school learners, and it also improves students' learning abilities in the field of vocabulary development and unit-test (DiCicco 2016). Also, Shaharane, Jamil, and Rodzi's (2016) findings revealed that Google classroom usage helps effectively teach learners at the college since it keeps students online (Shaharane, Jamil, and Rodzi 2016).

CONCLUSION

With the use of ICT in education, the Google classroom app was seen as an effective instrument that can enhance teaching and learning. However, it is not adequate for all categories of learners in some cases, as is the case with the teacher education programme. Based on these findings, the study recommended that. Thus, it was recommended that the Google classroom application should not be adopted in the teaching of pre-service teachers' education programmes since it was found not adequate. For it to be adopted for use, there is the need to design an application that will be suitable for effective teaching to the three skills required in teacher education training: teaching skills, pedagogical skills, and, lastly, professional skills.

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