Teacher Support and Equipment Usage in the Regular Primary Schools in the Hohoe District of Ghana

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Abstract

The proposal to make all basic schools practise inclusive education by 2015 in Ghana will require that teachers are supported to use equipment to facilitate the teaching and the learning process. The purpose of the study was to investigate categories of persons provide support to the teachers, types of support provided for teachers, the extent of equipment usage in the classroom and the relationship between teachers who are supported, and equipment utilization in primary school classrooms. Three hundred and nine teachers made up of 161 males and 148 females formed the sample which was selected through multistage random sampling. The participants responded to an 18 item self-designed questionnaire with Cronbach's reliability alpha of .76. The results indicated that majority of the teachers confirmed that they received support from resource teachers, special education officers, school heads, school counsellor/psychologists and parents. The types of support teachers received included instructional, equipment/materials, psychological and collaboration/ consultation. The results also revealed that there was a significant relationship between teachers who received support and those who did not in the type of equipment they used in teaching. And again, it was found out that there was no significant difference in relationship between the male and the female teachers in equipment usage. It is therefore, recommended that the educational authorities should develop an adequate support system in the schools for the teachers, and should also provide the state of the art teaching equipment for the use by the teachers.

Key words: teacher support, equipment, primary school

Introduction

The implementation of the 2007 Educational Reforms in Ghana saw a remarkable attempt at governmental and non-governmental levels, as well as school level, to promote the use of educational equipment in schools. Such educational equipment plays an important role in creating an effective and adaptable learning environment, especially, when teaching children with special needs. However, it appears the use of educational equipment in addressing special education needs has been inadequate so far, in the

Ghanaian educational system. It appears that despite the current emphasis on inclusive education and the use of equipment, there is a lack of attention to the application of equipment utilization for children with special needs. It is envisaged that by the year 2015 all basic schools in Ghana will practise the inclusive philosophy. Consequently, to make the teaching more effective and result oriented, the schools will require an effective support system to be put in place, to help teachers to use appropriate equipment that can facilitate the teaching and the learning process.

Theoretical Framework

This study is based on the theory of facilitating conditions. Facilitating conditions, according to Triandis (1979), include the extent and type of support provided to individuals that influence their use of technology. In the context of equipment usage in classroom teaching, facilitating conditions include the availability of equipment, and the provision of support to teachers. This implies that the presence of support serves as a motivating factor that increases teachers' self- efficacy to use equipment in teaching.

Facilitating conditions, do not only affect actual behaviour as postulated by Triandis (1979), but also affect intention. That is, if an individual perceived that there is adequate support and resources, that individual would use or would continue to use equipment. This observation is consistent with the theory of planned behaviour (Venkatesh, Morris, & Davis, 2003). Thus, education authorities and support personnel hoping to promote the use of equipment in inclusive classrooms should not only provide access to equipment, but also provide sufficient technical, psychological and collaborative support.

Literature Review

Gomleksyz (2005) stated that the use of equipment is an important dimension in teaching and learning. Accordingly, using educational equipment in classes helps teachers to ensure a better and more effective teaching and learning environment. The use of variety of educational equipment both enriches, and strengthens learning environment in a way that facilitates learning. Several earlier researchers (Bork, 1985; Ragosta, 1983) show that computers have an influential effect on learning and teaching. They were of the view that teaching and learning become more student-centred with the use of computers in the classroom, and more individualized learning takes place.

Millenken and Barnes (2002) stated that traditional formats are not always successful and efficient. They are of the view that new technologies

offer opportunities for taking account of individual aptitude and interest. Gomleksyz (2005) pointed out that effective use of equipment in the classrooms can help the education system work better and more effectively. Tezci (2010) also remarked that equipment do not have an educational value in themselves but become important when teachers and other support personnel use them in teaching. Some people claim that the presence of equipment creates a pressure, and requires effective use (Kozma, 2003). However, research results have shown that equipment usage is related to the attitudes and levels of knowledge of teachers and support personnel (Lim & Khine, 2006; Zhang, 2007; Paraskeva, Bouta & Papagianni, 2008; Tezci, 2010).

Teachers' attitudes and beliefs affect the way equipment is applied in education. They tend to use equipment in ways shaped by their own personal perspectives on the curriculum, and on their pedagogical practices (Beattie, Anderson & Antonak, 1997). Bullock (2004) found that teachers' attitudes are a major enabling or disabling factor in the adoption and use of technological equipment in the classroom. Similarly, Kersaint, Horton, Stohl, and Garofalo (2003) observed that teachers who have positive attitudes towards the use of equipment feel more comfortable using them, and usually incorporate them into their teaching. Teachers are also more comfortable using equipment in their teaching if provided with support. It is, therefore, important that support systems that would make teachers effective in the use of equipment in teaching are provided.

Defining support is difficult, because support is comprehensive in nature and varied in type (Gold, 1996). In this sense, support is a global construct that has many dimensions. Littrell, Billingsley, and Cross (1994) found that psychological support was perceived as most important for special educators. These authors found that instructional support, for example, helping teachers with classroom work, such as providing needed materials and equipment for teaching and non-teaching duties correlate positively with both job satisfaction, and school commitment.

York, Giangreco, Vandercook, and Macdonald (1992) described support as provision of constructive feedback to fellow team members that may result in more effective team-member interactions and ultimately improving student learning. It is therefore clear that support is achieved through the actions of one person and this may affect another person, with the recipient perceiving having received help. In inclusive education, support can be provided for teachers and pupils with special needs by special education resource persons in the Districts, Municipal and Metropolitan Education Offices in Ghana. Other support persons include the school

administrators and professionals whose expertises are critical in the education of pupils with special needs.

In a quantitative study on perceived support for inclusive education, Jull and Minnes (2007) using 115 Education students who were between 16 to 25 years at Queens' University found that good quality of support accounted for 50% of the variance in ratings of quality of contact above and beyond a series of other predictor variables, such as instruction, and quantity of experience with children with special needs. The study also found that perception of support also correlated with willingness to include students with special needs. The findings are consistent with previous research demonstrating that teachers generally, have more positive attitude toward inclusion when they expect high quality support will be provided when it is required (Buell, Hallahan, Gamel-McCormick & Scheer, 1999). The implication is that inclusive education could become a successful possibility if support is provided to teachers. The result of this study suggests perceived support is an important variable to consider in inclusive education, and more so, when teachers are encouraged to use equipment during instruction.

Stainback, Stainback and Ayres (1996) proposed that a major aim of support personnel is to work side by side with classroom teachers and other school personnel to encourage natural support networks. The support personnel can also function as a "resource allocator" (Stainback et al., 1996, p. 37). The classroom teacher is also expected to have expertise, in locating appropriate materials and equipment needed by the students. In addition, support staff often work side by side with classroom teachers by providing support to enable teachers to adapt and individualize instruction to meet the unique needs of all class members.

Statement of the Problem

The use of educational equipment in facilitating instruction is an important factor in making inclusive education successful. Educational equipment provides children with disabilities with equal opportunities to participate in active environments with predictive activities that are aligned to their abilities. Many educational equipment such as assistive devices are available to assist teachers in improving the functional capabilities of their students via increasing students' participation in learning opportunities and involvement in activities (Scherer, 2004). Unfortunately, teachers are not always enthused about using assistive technology equipment (Wessels, Dijcks, Soede, Gelderblom, & De Witte, 2003).

In Ghana, the situation might not be different as regards the use of assistive equipment in addressing special education needs in the regular schools. It is also not certain if support is provided to the teachers in the inclusive schools to assist them use equipment in lesson delivery. Research in this area of teacher support and equipment usage in classroom teaching has not been fully explored. Therefore, this study was to investigate teacher support and the extent of equipment usage in classroom teaching.

Purpose of the Study

The purpose of the study was to investigate categories of persons that provide support to the teachers, types of support provided for teachers, the extent of equipment usage in the classroom and the relationship between teachers who are supported, and the types of equipment they use in teaching in the primary school classrooms.

Research Questions:

1. Which categories of support persons provide support to the teachers?'
2. What types of support are provided to the teachers?
3. What is the extent of equipment usage as perceived by the teachers?

Null Hypotheses

1. There is no significant relationship between teachers who receive support and those who do not in the type of equipment used in teaching.
2. There is no significant relationship between male and female teachers who receive support and those who do not receive support in the use of equipment.

Methodology

Research Design

In cognisance with the circumstance of the study, the researcher adopted a cross sectional descriptive survey design for the study. This type of research can be used to describe the characteristics that exist in a population, but not to determine cause-and- effect relationships. The justification for the use of cross-sectional survey is that it provided detailed description of what exists at the moment in terms of the support provided for the teachers and how these translate to equipment usage.

Sample and Sampling Technique

A multistage random sampling technique was utilized to select the respondents. The population from which the sample was drawn was 1,459 teachers in 71 primary schools in the Hohoe District of the Volta Region of Ghana. There are seven circuits in the district and out of these circuits; six schools were randomly selected to give a total of 42 schools. A simple random sampling was used to select 8 teachers from each school. In all, 148 males and 161 females making a total of 309 teachers participated in the study.

Instrument

A self-developed questionnaire was utilized for data the collection. The questionnaire consisted of three sections. The first section comprised items that identified the respondents' bio data. The second section which was a 13-item questionnaire measured the teachers' equipment usage. The last section was made up of items that solicited information on support. The items were ordered in a Likert scale format. The scale reported a reliability coefficient of .76 Cronbach's Alpha.

Procedure for Data Collection

Firstly, prior to the administration of questionnaires, a meeting with the District Education Director was held to discuss the purpose of the study. The initial attempt was to facilitate co-operation, and obtain official permission for the data collection. The final data collection was done in May/June 2013 by a four- man team that is, the researcher and three research assistants. Each participant sampled was met in his or her school during school hours. The participants were asked to fill out the questionnaire. One week was allowed for the collection of the questionnaire. In each school visited, the head teachers accepted to collect the completed questionnaire which was later handed over to the researcher. Three hundred and nine teachers completed the questionnaire representing 91.96% return rate.

Data Analysis

The descriptive statistical analyses were employed in the study. The Likert type scale which measured the extent of equipment usage was scored as never 1, rarely 2, sometimes 3, often 4 and always 5. These were then computed into percentages. The mean and the standard deviations were also calculated to determine the level of equipment usage. The research questions 1and 2 were analysed by the use of frequency counts and the results

presented in bar charts that described the types of persons and the types of support provided, while research question 3 was analysed by the use of percentages, mean scores and standard deviations. The hypotheses were analysed using cross tabulation to determine the Pearson chi-square values which described the relationship between the variables.

Results

Research Question 1: Which categories of support persons provide support to the teachers? The bar chart in Figure 1 illustrates the categories of support persons who provided support to the teachers.

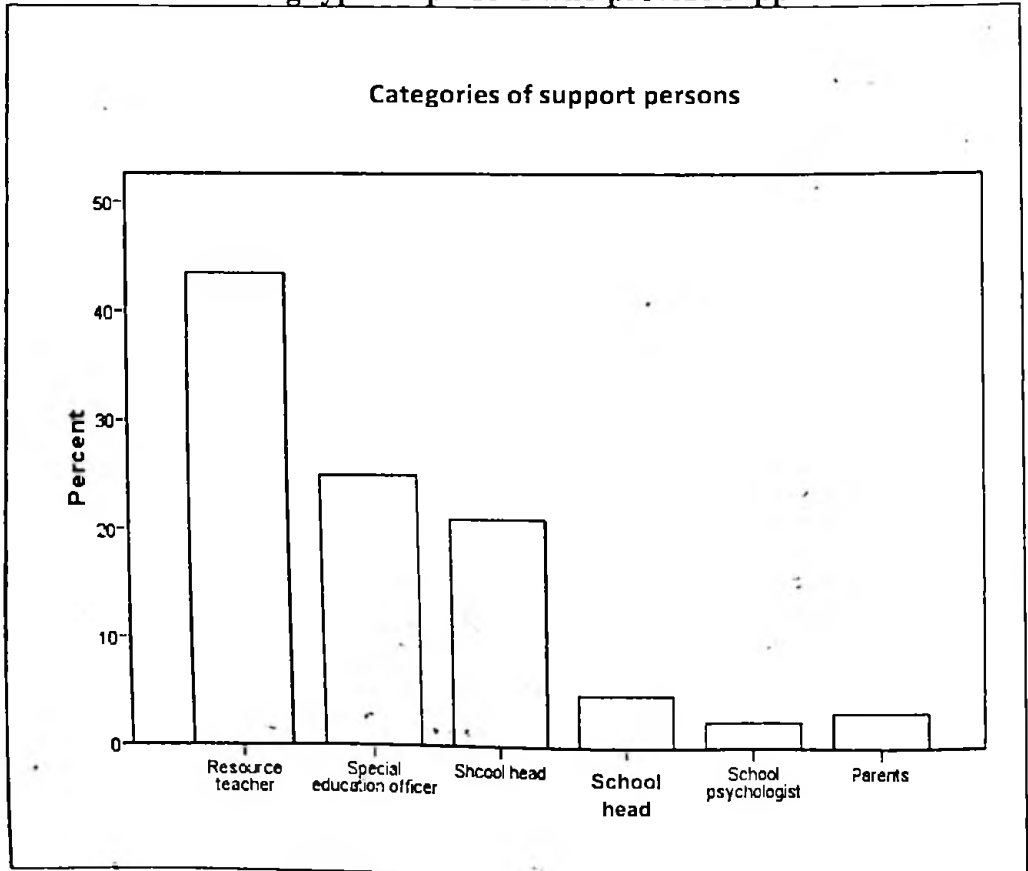**A bar chart showing types of persons who provide support to teachers**

Figure 1: Categories of Support Persons

Based on the results, the trend shows that there were more resource teachers and special education officers as well as school heads providing support than any other personnel. Interestingly, parents' contributions to the provision of support were extremely low. It is however, important to note that the limited number of school counsellors and school psychologists mirrors the number of personnel in the educational system in Ghana. In other words, there are very few personnel in the area of counselling and psychology in the schools.

Research question 2: What types of support are provided to the teachers? Figure 2 shows the results of the types of support provided to the teachers.

A bar chart showing types of support provided to teachers
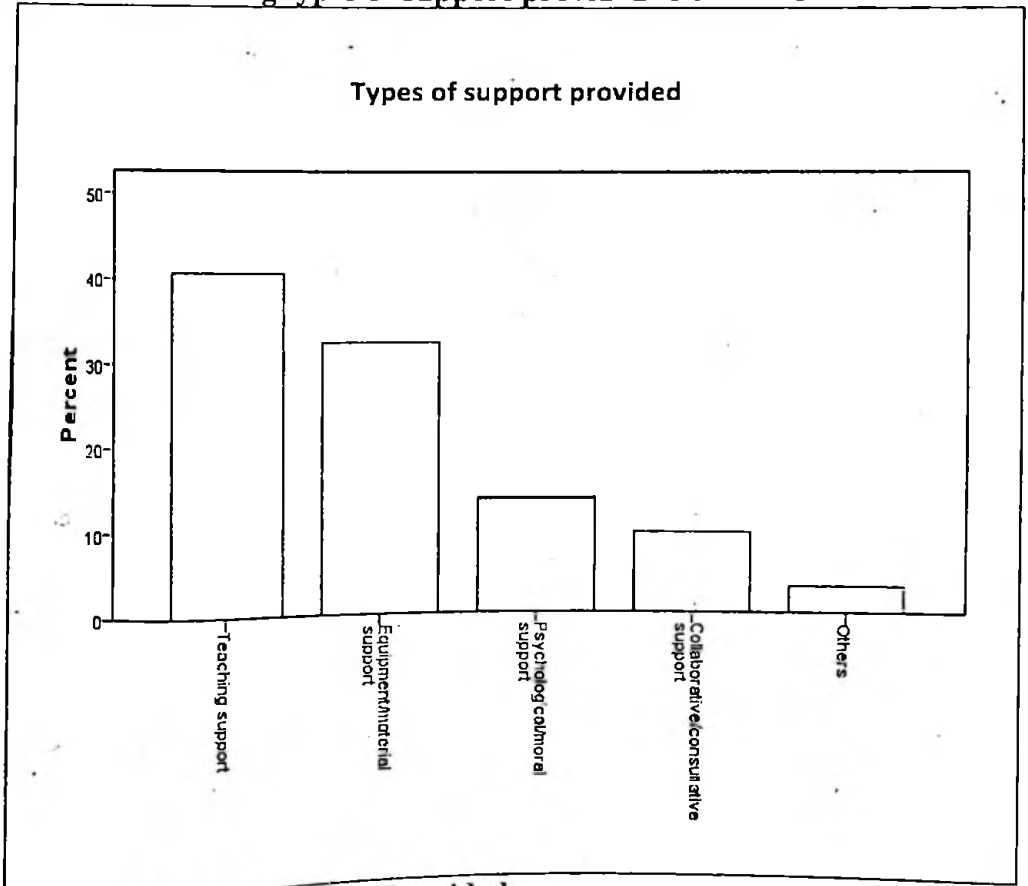

Figure 2: Types of Support Provided

The types of support teachers received are presented in Figure 2. The trend of support provided shows that there was more support in the area of instructional and equipment and material than all other types of support. In other words, the support provided decreased from instructional to collaborative consultative and to other support services. This means that the more teachers received instructional and material and equipment support, the more they are likely to use the equipment in the teaching and the learning process. The provision of psychological support was low despite its importance in dealing with teachers' burnout.

Research question 3: What is the extent of equipment usage as perceived by the teachers? Table 1 shows the results of the extent of equipment usage by the teachers

Table 1: The mean, standard deviation and percentage distribution of teachers' use of equipment

Equipment usage	Never	Rarely	Sometimes	Often	Always	Mean	Standard deviation
Electronic Equipment	108	103	73	14	11	2.08	1.04
	(35.0%)	(33.0%)	(23.6%)	(4.5%)	(3.6%)		
Non Electronic Equipment	20	28	40	142	79	3.75	1.13
	(6.5%)	(9.1%)	(12.9%)	(46.0)	(25.6)		

Teachers were asked to rate the extent of equipment usage on a five point scale never, rarely, sometimes often and always. The types of equipment were classified under electronic and non-electronic equipment For the purpose of electronic equipment, majority of the teachers (68%) indicated that they never or rarely used them, 23% sometimes used them, and 4.5% often used them while 3.6% always used them. The mean score and standard deviation gave the indication that two-thirds majority of teachers rarely used electronic equipment such as computers, radio, and television as equipment for teaching ($M = 2.08$, sd $= 1.04$). This has

implication for the promotion of information and communication technology (ICT) programme instituted in the schools in Ghana.

In the case of non- electronic equipment, the mean score and the standard deviation showed that majority of the teachers often used equipment classified as non-electronic (M = 3.75, sd = 1.13). This means that the greater majority of teachers used traditional equipment such as boards, charts, pictures, flash cards and others for the teaching and the learning purposes.

Hypothesis 1: There is no significant relationship between teachers who receive support and those who do not in the type of equipment used in teaching.

Table 2: Pearson chi-square showing the relationship between support and types of equipment used in teaching

Types of Equipment	Support				χ^2	df	sig
	Yes	%	No	%			
Electric	50	52.1%	46	47.9%	4.484	1	0.044
Non Electric	138	64.8%	75	35.2%			

Sig. = 0.05

Table 2 shows the results of the Pearson chi-square test conducted to find out whether there was a significant relationship between teachers who received support and the type of equipment they used in teaching and those who did not. The results revealed that there was a significant relationship between teachers who received support and those who did not in the type of equipment they used in teaching [χ^2 = 4.484, df 1, p = 0.044]. The results show that a significant proportion of teachers who received support reported that they used electronic equipment (52.1%) and non-electronic equipment (64.8%) in teaching compared to the teachers who had no support. The null hypothesis is therefore rejected.

Hypothesis 2: There is no significant relationship between male and female teachers who received support and those who did not receive support in the use of equipment.

Table 3: Pearson chi- square showing the relationship between support and equipment usage by gender

Gender	No	%	Yes	%	χ^2	df	sig.
Male	64	20.7	84	27.2	1.989	1	.164
Female	57	18.4	104	33.7			
TOTAL	121	39.2	188	60.8			

Sig. = 0.05

The Pearson chi-square conducted to investigate whether there was no significant relationship between male and female teachers' opinions in equipment usage is shown in Table 3. The results indicated that there was no difference in relationship between males and females in equipment usage (χ^2 1.989, df 1, p = .164). This means that the proportion of females (33.7%) who reported to use equipment in teaching was not significantly larger than the proportion of the males (27.2%) who indicated using equipment in teaching.

Discussion

Some major findings have emerged from this study. Based on the research questions, the results indicated that the resource teachers, the special education officers, and the school heads were the three dominant personnel that provided support for the teachers. This finding confirms earlier studies which found similar results. A study carried out by Billingsley, Carlson and Klein (2004) found that teachers agreed that special educators and special education officials provided support to enhance their teaching. These authors also found that principals and district level consultants provided support. In the current study, over 60% of the teachers indicated that they received support from the various support persons. This shows a clear manisfestation of the presence of a supportive culture at the school level. The support from the school heads and the officials from the District, Minicipal and Metropolitan Directorate of Education are likely to enhance and influence the use of equipment by the teachers.

The teachers also indicated in this study that they received instructional support, equipment and material support, psychological support and collaborative and consultative support. The overwhelming majority of the teachers (73.2%) agreed that they were provided with instructional support as well as equipment and material support. It is important that instructional support must be present to enable teachers meet the needs of all students. Gold (1996) found in a study that instructional support is needed to help the teachers to develop knowledge and skills necessary to be effective teachers. By implication, the 40.7% of the teachers who received instructional support were likely to develop the knowledge and skills required to teach effectively in the inclusive classroom as well as using equipment. Billingsley and Cross (1994) found that psychological support for example, showing appreciation, taking an interest in the teachers work, maintaining open communication was perceived as the most important for the special educators. They also found that instructional support for example, helping the teachers with work tasks, such as providing needed materials and

equipment, space and resources, ensuring adequate time for teaching and non-teaching duties correlated positively with both job satisfaction and school commitment.

The hypothesis which stated there is no significant relationship between teachers who receive support and those who do not in the type of equipment they used in teaching was rejected. The teachers' perception of the type of equipment they used in teaching revealed that there was a significant relationship between the teachers who received support and those who did not in the type of equipment they used. The implication is that teachers who received support largely used electronic and non-electronic equipment compared with those who were not supported. This finding is consistent with Ertmer (2005) who in his study on models for pre-service teachers' use of technology to support student centred learning, reported that the teachers' perceptions about instructional and technical support available had a moderate influence on the teachers use of equipment. However, Ertmer (2005) was quick to add that it is naive to assume that as long as the adequate resources and supports were provided to teachers, the use of equipment would follow. To him, other factors could be involved. The findings from this current study confirm the theory of facilitating conditions. This theory implies that the presence of support serves as a motivating factor that increases teachers' self- efficacy to use equipment in teaching (Triandis, 1979). In this study, these facilitating conditions included instructional support, technical support, psychological support and collaborative consultation support. Dasgupta, Haddad, Weiss and Bermudez (2007) found that facilitating conditions positively relate to intention to use equipment to increase teachers' use of equipment in the teaching and learning process.

The second hypothesis which sought to find whether there was no significant relationship between male and female teachers was accepted. This implies that the proportion of females (33.7%) who reported to use equipment in teaching was not significantly larger than the proportion of the males (27.2%) who indicated using equipment in teaching. The underlying assumption is that men and women learn in the same way. Besides, different treatment of men and women might be perceived as discriminatory practice in an era of gender sensitivity. Yet, observation of social practices suggests that men and women grow and are raised differently and that these gender differences in growing may affect the way they perceive what they do (Madu & Kasanga, 2005). Definitely, the male and the female teachers were expected to share the same opinions perhaps, because, their levels of education made them see the issue of equipment usage the same way. In a study, Onocha (1998) revealed that conflicts between school and traditional values, beliefs, practices and sex stereotyped roles are not yet resolved even

among male and female teachers. It is therefore not surprising though, that in this study, the relationship between the male and the female teachers on the issue of support and equipment usage was not significant.

Conclusion

The implementation of different support systems to teachers can provide a range of opportunities for the teachers to utilize equipment in their classrooms. It is therefore, imperative to identify the types of support that are likely to motivate teachers to utilize equipment in the teaching. This conclusion is sufficiently proven when it was found from the current study that the support teachers received was directly related to equipment utilization. By addressing the prospective areas of concern in the provision of equipment, both the male and the female teachers would in turn, become more involved in the use of equipment in their classrooms.

Recommendation

In the light of the findings of this current study the following are recommended:
It is recommended that the educational authorities should develop adequate supports systems, and also, provide the state of the art teaching equipment including assistive devices for the teachers in all the schools implementing the inclusive education. Again, teacher training institutions in Ghana should consider for adoption in their programmes, practical experiences with the use of equipment, and supportive environments. This will give the teachers a first-hand practical knowledge and skills in the use of equipment in the classrooms.

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