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Facilities and Materials for Teaching Sewing in Junior High Schools in Selected Schools in Ghana

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ABSTRACT

The study explored the views of Junior High School teachers in an urban area in Ghana on instructional facilities and materials for teaching Sewing. Descriptive survey design was used to conduct the study and the objectives were to find out the instructional facilities and materials available and not available for teaching Sewing. Through purposive, cluster and systematic random sampling procedures, 78 teachers were sampled to participate in the study. Questionnaire and observation checklist were used to collect data. The data were analysed with SPSS to generate frequencies and percentage table. The results show that classrooms, basic tools such as needles, dress maker's pins, pin cushion, scissors, tape measure, brown paper and BDT textbook were available. However, sewing machines, thimbles, seam rippers, fabrics, threads and cupboards/chest of drawers were not available in the schools to facilitate effective teaching and learning. For improvement, all stakeholders in education should help with the provision of teaching and learning resources for Sewing.

Keywords: Sewing, Junior High School, Instructional facilities, Instructional Materials, Availability, Non-Availability.

INTRODUCTION

Sewing is a component of Home Economics at the Junior High School (JHS) in Ghana. Home Economics is a major aspect of Basic Design and Technology (BDT) which is a form of Technical and Vocational Education (VTE). VTE takes the form of competency-based learning. Thus, VTE enables learners to acquire knowledge and skills for proper reasoning and problem solving. With VTE, learners acquire occupation-specific skills for economic independence (Boateng, 2012; McQuay, 2001).

In Ghana, VTE takes place at all levels of education, i.e., basic, secondary and tertiary. The rationale for VTE at the basic level of education for instance, is to expose learners to variety of activities that are practical in the fields of vocational studies (Sewing, Catering, Basketry, Calabash Work, etc.). The exposure given to learners is supposed to make them familiar with vocational and technical careers and develop their interest in that area to enable them opt for VTE at higher levels and produce graduate to meet the high middle level manpower demands in the country.

Another reason for VTE in Ghana is to equip learners with basic occupational skills to allow learners who for some reasons would not be able to continue with formal education after basic school, to enable them get paid jobs or be self-employed in the agriculture, commerce or industry. Thus, BDT is to produce individuals who are imaginative and versatile and have the competences of combining and using diversities of knowledge and skills in production development. Graduates from the basic level of education can also move into the informal sector to be trained as apprentices if they so desire (Boateng, 2012; Anamuah-Mensah, 2004; Akyeampong, 2002). For the intended objectives of VTE to be achieved, the educational reform of 2007 expects all stakeholders in education be it government, parents, teachers, learners, the community and industry to collaborate (MOE, 2007).

BDT pools the ideologies and procedures of many aspects of Home Economics, Visual Arts and Pre-technical skills (MOE, 2010). The emphasis of BDT is more on developing people with creative minds and multiple skills (basic life skills, problem solving skills, creativity etc.). The subject therefore, offers the learners the chance to acquire valuable skills that will open them up to a wide range of opportunities for productive work.

BDT is practical oriented and learning is best achieved through practical application of skills learnt by learners. The profile dimensions required and their respective weight are 30% for knowledge and understanding and 70% for skills acquisition (MOE, 2007). Sewing under BDT (Home Economics) among others requires instructional facilities and materials for teaching and learning to facilitate critical thinking and acquisition of practical skills for employment (Smith, Peterat & De Zwart, 2004). The use of instructional facilities and materials (IF & IM) can bring about meaningful delivery of instruction.

Instructional materials (IM), for instance, are potent weapons in the hands of teachers to drive home the demands in the teaching and learning process (Badmos, Agbeti & Umeh, 2016). They are crucial and vital tools required for teaching and learning of subjects in school so that the efficiency of teachers could be promoted and students' performance could improve. IM make the learning of applied subjects and for that matter Sewing more interesting, practical, realistic and appealing; and should be available in schools (Tashie, 2016; Ameleke, 2015; Abdu-Raheem, 2011).

STATEMENT OF THE PROBLEM

Sewing is a skill and activity-oriented subject, which if well taught with the necessary facilities will equip learners with the needed skills, which could make them self-reliant. However, it has been observed that teachers and learners at the JHS in the study area, which is an urban community in Ghana do not use the needed instructional facilities and materials for the teaching of Sewing. Topics which ought to have been taught with tools and equipment, are done in abstract. The question that comes to mind is; are teaching and learning materials /resources (TLMs) not available for effective teaching and learning in the schools? It was against this backdrop that the study sought to investigate the availability of instructional facilities including infrastructure, materials and equipment for the teaching of Sewing in the study area.

RESEARCH QUESTIONS

The research question which guided the study was "What instructional facilities (infrastructure, materials and equipment) are available and used in teaching sewing in the schools?"

REVIEW OF LITERATURE

Educational/instructional facilities are things in education in the form of school buildings, classrooms, workshops, laboratories, library and offices. Others are also cupboards, teaching aids, textbooks and furniture. The rest are places of convenience, water and other materials as well as infrastructure that would aid instructional effectiveness and motivate learners to learn (Akomolafe & Adesua, 2016; Sharma & Naisele, 2008; Arkhurst, 2004; Fleck, 1980). In this context, instructional facilities are the classroom, laboratories and other teaching and learning materials (TLMs) that will enhance the teaching and learning of Sewing. Laboratories for Home Economics for instance should be available and be properly equipped to reflect the needs of the subject in both theory and practice. For example, Clothing and Textiles/Sewing should not be conducted in classroom used for general subjects. However, in many poor countries this happens to be the case (UNESCO, 2008). Educational facilities such laboratories reflect what goes on there as well as providing productive activities and high-quality results (Sharma & Naisele, 2008; King & Palmer, 2007).

Instructional materials (IM) are items or devices which help teachers to present lessons rationally and sequentially to learners (Kochher, 2012; Isola, 2010). IM are key components and the centre to the organisation of educational experiences for learners and very important in the teaching of practical lessons like Sewing. They secure learners' attention, make lessons pleasant, more enjoyable, meaningful, explanatory and learning more comprehensible (Oluwagbohunmi & Abdu-Raheem, 2014; Boateng, 2012). IM enable both teachers and learners to contribute effectively and actively in lesson sessions. Teachers for instance are able to make effective use of time with availability and usage of IM. Learners on the other hand are stimulated and motivated to interact in groups and to investigate problems. IM therefore, give room for skills acquisition, knowledge, development of self-confidence and for learners to be self actualised. Generally, IM enhance quality teaching and learning (Abdu-Raheem, 2011; Arkhurst, 2004).

Any vocational and technical education (VTE) requires provision of adequate facilities in the area of space such as classrooms, workshops, laboratories, library, congenial environment and the relevant equipment/tools for teaching and learning (Boateng, 2012; Osuala, 2004). Tools/ equipment as well as materials for teaching VTE should be available and adequate. Also, the tools should not be outdated and the culture of maintenance should be ensured (Amedome & Fiagbe, 2013; Boateng, 2012).

For effective teaching and learning, sewing tools /equipment/materials are needed to assist in the construction of garment and articles for home furnishings (Zieman, 1991). In Clothing and Textiles/Sewing, the tools/equipment can be classified according to size such as large or small. The small equipment occupies small spaces and can easily be packed into toolboxes and bags. The large equipment on the other hand occupies large areas at the workshop. Examples of small equipment/tools include scissors, shears, needles, tape measure, seam and stitch ripper, clipper, tracing wheel, tailor's chalk, dressmaker's pencil. The large equipment refers to the sewing machine, cutting table, ironing board and pressing iron, dressing mirror, dress form, cupboard, chest of drawers, computer etc. (Forster, 2014; Gavor, Ampong, & Tetteh-Cofie, 2014)

Sewing equipment /tools are also classified based on their functions or uses. These include pressing, stitching, fitting, measuring, storing, cutting and marking (Gavor et al., 2014; Forster,

2014). The pressing equipment are iron, tailor's ham, sleeve board, pressing cloth, ironing board/table/flat surface for ironing. Also, presser, pounding block, seam roll, pressing mint and turner. Hand and machine needles, needle threader, pin cushion, magnet, and bodkin are stitching equipment while dress marker's pins, dressing mirror and dress form (dummy) are classified as fitting equipment (Forster, 2014; Adamtey, 2008).

Measuring equipment are tape measure, rulers, hem gauge, measuring stick, French curves, skirt marker and set square, pencil and note pad. Storage equipment on the other hand are cupboard/ wardrobe, chest of drawers, hangers and racks, toolbox and bag. Scissors, seam rippers, blade, buttonhole scissors, thread clipper, rotary cutters, round knife, straight knife, band knife are cutting tool while tailor's chalk, tracing wheel, dressmaker's carbon, dressmaker's pencil/ordinary pencil are marking equipment (Gavor et al., 2014; Forster, 2014; Adamtey, 2008).

For pattern development in clothing construction, push pins/office pins, thumbtacks are some of the available tools used to adhere patterns to paper or fabric. Other alternatives for pins include pattern weights, glue, basting tape and clips. Fine point sharpie marker, paper cutting scissors, cellotape, scotch tape, fashion scale, dressmakers square, erasers, compass, T/ L-square, pattern weight, pattern hooks, slopers, brown paper and flat/wide table are also essential tools in pattern making (Lo, 2011; Gavor, 2011).

In the performance of any task in VTE-Sewing there is the need for the right tools/equipment and materials designed for a specific job to be used. Also, the user should be in the position to know how to use the tools properly. A good knowledge of tools/equipment and their appropriate uses contribute to the overall quality of a product and make the tasks easier and rewarding for both teachers and learners (Forster, 2014; Reader's Digest, 2005; Kozulin et al., 2003).

METHODOLOGY

To describe the instructional facilities and materials available for the teaching of Sewing at JHSs, the study employed descriptive survey design. The population was all teachers teaching Home Economics in eleven (11) circuits in JHSs in the study area. Two circuits out of the 11 circuits were randomly selected through the lottery method for pretesting of the instrument. Seventy-eight (78) teachers were sampled through cluster sampling and systematic random sampling, from the remaining circuits for the study. Questionnaire and observation checklist were used to collect data. To analyse data, Statistical Package for Social Sciences (SPSS) was used to generate frequencies and percentages which were presented in a table for discussion.

RESULTS AND DISCUSSIONS

Background Characteristics of the Respondents

The respondents for the study had attained qualifications ranging from certificate to second degree. The teachers with either certificate 'A' or 'B' were 12.8%. diploma, 20.5%; first degree 20.5% and second degree 6.4%.

Instructional Facilities and Materials Available and Not Available for Teaching Sewing in the JHSs

The instructional facilities and materials available and not available for the teaching of Sewing in JHSs are presented in the Table 1.

Table1. Instructional Facilities and Materials Available and Not-Available for Teaching Sewing (N=78)

Items	Available No. (%)	Not-Available No. (%)
Classroom	70 (89.7)	8 (10.3)
BDT Textbook	42 (53.8)	36 (46.2)
Sewing machine	22 (28.2)	56 (71.8)
Scissors	65 (83.3)	13 (16.7)
Tape measure	65 (83.3)	13 (16.7)
Needles	66 (84.6)	12 (15.4)
Dressmakers pins	66 (84.6)	12 (15.4)
Pin cushion	62 (79.5)	16 (20.5)
Thimble	31 (39.7)	47 (60.3)
Seam ripper	28 (35.9)	50 (64.1)
Threads	11(14.1)	67 (85.9)
Brown papers	64 (82.1)	14 (17.9)
Fabric	28 (35.9)	50 (64.1)
Cupboard/Chest of drawers	9 (11.5)	69 (88.5)

Note: Figures not in parentheses are frequencies. Figures in parentheses are percentages

From Table 1, 70 of the teachers with a recorded percentage of 89.7% stated classroom was a facility available for the teaching Sewing at the JHS. About 8 (10.3%) of teachers indicated an assigned classroom was not available for the teaching of Sewing. It was observed that these teachers were in a single stream school. The non-availability of classroom could be because in a single stream school, the only classroom assigned for BDT has to be shared among the various BDT options (Home Economics, Pre-Technical skill, Visual Arts). During instructional hours, the class was split into the options and the classroom had to be used by only one group at a time, as explained by the teachers. This implies that the permanency of the classroom was not assured for any particular option of BDT in the single stream schools, unlike the double stream schools and in some few cases, when a school has some vacant classrooms to spare.

The observation results confirmed that availability of classroom facility was a challenge to 8 (10.3%) out of the 78 JHSs. Osuala (2004) stated that to teach any VTE subject requires the provision of adequate facilities in the area of space such as classrooms, workshops and laboratories. If facility in the area of space is not adequate for a practical based subject such as Sewing, effective teaching and learning could be hindered (Kozulin et al., 2003) but this is not what Ghana wants to achieve in its Educational Reforms.

A little more than half (53.8%) of the respondents indicated that BDT textbook was available for teaching Sewing. BDT textbook is the official text book accepted by the government for the teaching of BDT subjects. The researcher also observed that apart from BDT textbook, other textbooks were in use. Some of the supplementary books in use were Introduction to Sewing for Junior Secondary Schools by Ashong (2004), Step by Step Sewing (A Handbook for Basic Schools) by Moro (2000) and Victory Home Economics (Basic Design and Technology) by Nyarko (2011). It implies that other books are available in the schools for teaching and learning Sewing in JHS. It is also possible

that the 36 respondents representing 46.2% who indicated that BDT textbooks were not available were not sure whether the school had stock of the books or not, because it was observed that some books were usually kept in the head-teachers' offices. The availability and usage of textbooks and other learning materials help in instructional effectiveness and the motivation of learners to learn (Akomolafe & Adesua, 2016; Sharma &Naisele, 2008). Consequently, learners in schools where text books were not available were very likely to lose interest in the sewing aspect of BDT because teaching and learning of this aspect would be difficult (Forster et al., 2017).

Generally, more than 80% of teachers indicated basic tools such as needles (84.6%), dress maker's pins (84.6%), scissors (83.3%), tape measure (83.3%), and pin cushion (79.5%) were available for teaching and learning. It was observed that in some of the schools (35%), it was compulsory for all students who opt for Home Economics to have their own Sewing kits with the basic tools such as dressmaker's pins, pin cushion, needles, tape measure, thimble, scissors, thread and fabric, i.e. the small tools. It was therefore a requirement for parents and guardians to get the basic sewing tools and materials in a needle-work-box for their wards at the JHS. It was however observed that some of the students had no sewing tools and materials to facilitate their learning of sewing. Teachers who had their own sewing tools brought them in as TLMs and also gave some out to learners for use. Forster (2014) stated that effective performance of task involves the usage of tools and equipment designed explicitly for that work. Even if there were no working sewing machines in the schools, with these basic tools some basic skills could be taught to the students.

Fifty-six (71.8%) of the teachers indicated that sewing machines were not available in the schools. 3The observations made in the study supported the non-availability of sewing machines in the affected schools. It was noted that about 75% of the schools did not even have one sewing machine for demonstration. In the case of schools with machines, it was observed that the schools could not use the sewing machines because they were not functioning. Consequently, some teachers taught only the theory aspect of the parts, functions and threading of the sewing machine and learners did not have the opportunity to practice stitching with the sewing machine. The non-availability of sewing machines in the schools is not a good practice for the learner in JHS, because they need solid foundation for further education in Clothing/Textiles in the secondary school or skill training for small scale business. Sharma and Naisele (2008); and Boateng (2012) emphasised that apart from highly trained and experienced teachers or instructors for teaching VTE courses, tools, equipment and materials are required to enhance quality teaching and learning of skills. The sewing machine is a major equipment in skill training for sewing, hence it is impossible to acquire job skills in sewing without it.

It is also shown in the table that only 31 teachers representing 39.7% indicated thimble was available in their schools for teaching and learning Sewing. On the other hand, the 47 teachers representing 60.3% who indicated the non-availability of thimble implies that the usage of thimble was absent during lesson delivery and teachers do not insist learners should have them in their needle work box. The non-usage of thimble could cause learners to have their fingers pricked with needles during sewing. This invariably could make some learners lose interest in the subject. If thimble is to be worn on the middle finger for protection, then it is a necessary tool for Sewing. It is therefore said that a good knowledge of tools/equipment and their appropriate use contributes to the overall quality of the product and make a task easier for the person using them to work (Forster, 2014; Reader's Digest, 2005; Kozulin et al., 2003).

The table also shows that 50 of the respondents representing 64.1% indicated seam rippers were not available for their lessons. It could be that some teachers did not know the essence of the tool for picking wrong stitches. The observation results showed that 35.9% of the teachers used and also insisted on the use of seam ripper to unpick wrong seams, hence the tool was available in their schools. The usage of seam ripper reduces the frustration of unpicking stitches to make an activity enjoyable (Oluwagbohunmi & Abdu-Raheem, 2014). Since mistakes are part of the learning process students need this tool.

From the Table, 50 of the respondents representing 64.1% indicated fabrics were not available for practical work. It means therefore that the use of fabric for practical work was absent in those schools. Teachers in only a few schools 28 (35.9) were seen using fabric for teacher demonstrations. At best, what some teachers (82.1%) did was to demonstrate with brown paper, which at times did not bring out the desired results. For acquisition of fabrics such as grey baft, government could have made provision for the schools or insisted that part of the grants to schools must cover materials for teaching Sewing. As a matter of fact, what schools normally do is to appeal to parents/guardians for provision of fabrics for usage by learners as indicated by one teacher. According to the educational reforms of 2007, (MOE, 2007) parents/guardians, the community and industry are all partners in VTE. Therefore, it is not out of place for parents to supply some to the practical skills training needs of their children where government fails to do so.

However, if materials such as fabrics for teaching and learning are not available specimen work, for instance becomes difficult and are invariably not done in the schools. The availability of tools and materials in skills training of both teachers and learners would enhance the teaching and learning of Sewing. The teacher for instance would be able to translate information to meet the current state of understanding of the learner. The reverse may run down teachers' competency and learners' interest in the subject. It is therefore necessary that materials used for teaching should be available and adequate for practice (Akomolafe & Adesua, 2016; Boateng, 2012).

Majority of the respondents (88.5%) indicated that cupboards or chest of drawers were not available in their schools. Only 11.5% of the teachers indicated they had cupboards or chest of drawers in their schools. The high percentage of non-availability of cupboards or chest of drawers made the storage of some of TLMs and project work of learners difficult. An observation made by the researcher showed that specimens made by learners and teachers' TLMs, as well as Sewing textbooks were just kept in the classroom, and at times on the teacher's table or at the headteachers' office. Reference materials were not properly kept and teachers could not keep on making new TLMs due to the cost involved. In such instances, teachers may be tempted to teach topics in the curriculum in abstract. Arkhurst (2004) pointed out that educational facilities for storage aid the level of instructional effectiveness in education. Indeed, the non-availability of cupboards or chest of drawers made storage of teaching and learning materials quite difficult.

CONCLUSION

Some instructional facilities and materials such as classrooms, basic tools, e.g., needles, dress maker's pins, pin cushion, scissors, tape measure, brown papers and BDT textbooks were available. However, sewing machines, thimbles, seam ripper, fabrics for practical lessons, threads, and cupboard or chest of drawers for storage were not available in the schools. Hence, teaching and learning of BDT Sewing cannot be said to be effective in the study area.

RECOMMENDATIONS

1. Since the JHS in the study location did not have some of the instructional facilities and materials for teaching and learning of Sewing, there is the need for government, parents and guardians of learners, philanthropists and Non-Governmental Organizations to assist with the provision of these basic tools/equipment and materials in the schools for teaching and learning.
2. Headteachers are also entreated to use part of the government's capitation grant for TLMs to cover tools/equipment and materials for teaching and learning Sewing.
3. The limited sewing textbooks which are supplied by the government should not be kept in the office of the head teachers but should be made available for teachers and learners to use.

References

Abdu-Raheem, B.O. (2011): Availably, adequate and utilization of social studies. IM in Ekiti State secondary school. Journal of current discourses research, 3, 242 – 255.

Adamtey, S. K. (2008). Foundation to textiles and clothing: A career guide in fashion studies. Accra: Salt 'N' Light Publications

Akomolafe, O. C., & A desua, V. O. (2 016). The impact t of physical facilities on students' level of motivation and academic performance in Senior Secondary Schools in South West Nigeria. Journal of Education and Practice. 7(4), 38 -42

.Akyeampong, A. K. (2002). Vocationalisation of secondary education in Ghana. Paper prepared for the Regional Vocatioal skills Development Review, Africa Region Washington, DC: World Bank.

Amedome, S. K., & Fiagbe, A. K. (2013). Challenges facing technical and vocational education in Ghana. International Journal of Scientific and Technology, 2(6), 1-10.

Ameleke, G. (2015). Teachers' views about the teaching of clothing and textiles in senior high schools in the Southern Volta Region, Ghana. Unpublished dissertation, Department of Home Economics, University of Education, Winneba, Ghana.

Anamuah-Mensah, J. (2004). Vocational/Technical Education for Accelerated Wealth Creation: Critical Issues Facing the Nation. Paper presented at the 56th New Year School Conference organised by the Institute of Adult Education at the University of Ghana, 30th December, 2004.

Arkhurst, A. E. (2004). Evaluation of the implementation of the senior secondary school clothing and textile curriculum in Ghana. Unpublished PhD Thesis, Nigeria, Nsukka.

Ashong, L. (2004). Introduction to sewing for junior secondary schools. Kumasi: Rainbow Publications.

Badmos, J.M., Agbeti, O. A., & Umeh, T.U. (2016). Instructional material: Level of use in teaching and learning of economics in secondary schools. Journal of Research & Method in Education, 6 (4), 2320-2388.

Boateng, C. (2012). Restructuring vocational and technical education in Ghana: The role of leadership Development. International journal for Humanities and social Sciences, 2(4), 1-12.

Fleck, H. (1980). Towards better teaching of home economics (3rd ed.). New York: Macmillan Publishers.

Forster, P. (2014). Clothing & Textiles. Accra: Winmat Publishers Ltd.

Gavor, M., Ampong, I., &Tetteh-Cofie, D. (2014). Clothing & Textiles for Schools and Colleges. Accra: Adwinsa Publication (Gh) Ltd.

Gavor, M. (2011). Flat pattern designing for women: An introduction. Accra: Adwinsa Publications (Gh) Ltd.

IFHE (2008). Home economics in the 21st Century position statement. Retrieved on July 22, 2015 from http://www.ifhe.org/

Isola, O.M. (2010). Effect of standardized and improvised IM on student's academic achievement in secondary school physics. Unpublished M. Ed. dissertation. University of Ibadan, Ibadan, Nigeria.

King, K., & Palmer, R. (2007). Skills development and poverty reduction: A state of the art review. Torino: European Training Foudation.

Kochher, S. K. (2012). The teaching of social studies. New Delhi, India: Sterling Publication Private Limited.

Kozulin, A., Gindis, B., Ageyev, V., & Miller, S. (2003). Vygotsky's educational theory in cultural context. New York: Cambridge University Press.

Lo, D. C. (2011). Pattern making. London: Laurence King Publishing.

McQuay, P. (2001). A discussion paper on vocational technical education in the United States of America. Retrievedon August 2, 2015 from http://ccid.kirkwood.cc.ia.us/usvte0i.htm.

MOE (2007). Home Economics Textiles 8 to 12: Intergrated resource package 2007. British Columbia, Canada:

Victoria B.C.

MOE (2010). Teaching Syllabus for Clothing and Textiles (Senior High School 1-3). Accra: Curriculum Research and Development Division.

Moro, M. Y. (2000). Step by step sewing (A Handbook for Basic Schools). Kumasi: Rainbow Publications.

Nyarko, E. K. (2011). Victory home economics (Basic Design and Technology). Accra: Curriculum Research and Development Division of Ghana Education Service.

Oluwagbohunmi, M.F., & Abdu-Raheem, B.O. (2014). Sandwich undergraduate problem of improvisation of IM in Social Studies. The case of Ekiti State University. Journal of International Academic Research for Multi or Plenary, 1 (12), 824 –833.

Osuala, E. C. (2004). Foudations of vocational education. Nsukka: Cheston Agency Limited. Reader's Digest (2005). Complete guide to sewing. Plaeatville, NY: The Reader's Digest Association.

Sharma, A., & Naisele, E. (2008). TVET: The master key: The review of the functions of functions of FIT, TPAF and other TVET providers. Suva: Ministry of Education.

Smith, G., Peterat, L., & De Zwart, M. L. (2004). Home Economics now: Transformative practice, ecology and everyday life. Vancourver, BC: Pacific Educational press.

Tashie, E. (2016). Enrolment of Clothing and Textiles students: A case study of senior high schools in the Kwaebibirem District. Unpublished dissertation, Department of Home Economics, University of Education, Winneba, Ghana.

UNESCO (2008). Research overview: Teacher preparation and continuing professional development in Africa. Centre for international Education (CIE), University of Sussex. Retrieved on December 23, 2016 from http://www.sussex.ac.uk/cie/projects/completed/tpa/overview.

Zieman, N. (1991). Let's sew! A beginner sewing guide. Beaver Dam, WI: Nancy's Notions.