

Understanding informal jewellery apprenticeship in Ghana: Nature, processes and challenges

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Abstract

Context: The processes of acquiring education in jewellery in Ghana has been dominated by the informal apprenticeship system and it forms the backbone of the workforce of the jewellery industry in Ghana. However, the patronage of informal jewellery apprenticeship in Ghana in recent times has been on decline even though it has the potential of training human resources to transform Ghana's precious mineral resources sector. This is based on the belief that jewellery trade and its training are shrouded in secrecy, in other words, the jewellery trade is considered to be a sacred profession where information on its operating systems are not allowed to be shared easily. It is believed to be associated with cult and magic, hence the reluctant to admit people who are from outside the family of particular jewellery enterprise. This study is sought to bring to fore the understanding nature, processes and challenges of the informal jewellery apprenticeship in Ghana.

Approach: The study adopted the descriptive and phenomenology research designs (qualitative research methods). Jewellers who own a jewellery business and who are training other people through apprenticeships as well as people who are trained are observed and interviewed. A sample size was selected through purposive and convenience sampling techniques

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from four jewellery enterprises in Accra, Ghana. A thematic analysis plan was adopted to generate findings of the study.

Findings: The results show that for a person to train as a jeweller, s/he has to enrol by going through induction, furthermore fees (money and perishable items) are to be paid. The training content is driven by orders received by the master jeweller, thereby making it unstructured and lacking criteria for assessing the performance and progress of apprentice jewellers. Teaching and learning methods are usually on-the-job training that rely on demonstrations and observation.

Conclusion: Informal jewellery apprenticeship in Ghana uses a flexible, cost-effective approach for transferring jewellery making skills from masters to apprentice jewellers, and it has substantial potential for improving skills training in the country. Sometimes the reluctant of some jeweller to train others is to keep the trade to family members only.

Keywords: Informal education, apprenticeship, jewellery, jewellery education, master and apprentice jewellers, vocational education and training, VET, TVET

1 Introduction

Over the years, informal jewellery apprenticeship has been the avenue for people to acquire knowledge and skills in jewellery making in Ghana. Information available shows that between 80–90% of jewellers practicing in the jewellery industry in Ghana are products of informal jewellery apprenticeship (Atchoarena & Delluc, 2001). Acquiring vocation in jewellery through traditional apprenticeship method is only possible through family members because the jewellery trade is considered to be a legacy preserved for particular family and could only be passed on to its generation with women being excluded from practicing (Kotoku, 2009; Palmer, 2009). The belief is that jewellery trade and its training are shrouded in secrecy, in other words, the jewellery trade is considered to be a sacred profession whose information about its operating systems are not allowed to be shared easily because it is believed to be associated with cult and magic, hence the reluctant to admit people who are from outsiders the family of particular jewellery enterprise (Wilson, 2002).

Patronage of informal jewellery apprenticeship in recent times has been in a decline (Kotoku, 2009; Fening & Asomaning, 2014). According to Palmer (2009) lack of regulatory framework enforcement was a contributing factor of the decline. Buttressing his point, he asserted that a law passed by Parliament of Ghana in 1970, Act 351 (the National Vocational and Technical Institute (NVTI)) to regulate Technical and Vocational Education Training (TVET) including formal and informal apprenticeship was not effective until 2006 when another Act of parliament, Act 718 was passed to mandated the government of Ghana to

establish a Council for Technical and Vocational Education and Training (COTVET) to coordinate and oversee all aspects of technical and vocational education and training in the formal, non-formal and informal sectors of the country. Despite the passing of Act 718, apprenticeship in jewellery is still not regulated in Ghana (A. R. O. Addo, personal communication, December 14, 2015). Therefore, the sought to bring to fore the understanding of the informal jewellery apprentice in Ghana. This is an empirical study that discusses the understanding of informal jewellery apprenticeship in Ghana (nature, processes and challenges) which is imperative for the development of jewellery education in Ghana. The structure of the paper is made up of a review of related literature, methodology used, results, discussions and the conclusion that have been drawn from the study.

2 Informal apprenticeship system

Traditional apprenticeship as a means of transmitting and acquiring vocational skills has existed especially in Africa for a very long time. According to Fluitman (1994), the practice has its roots in socio-cultural traditions where it was only meant for developing skills of a family members in particular trade that they practice whose activities were mainly regulated by social customs. However, in recent time apprenticeship has evolved a lot, where the once family restricted skills development sector has now been opened up to admit all those who are interested in work-based learning, through 'informal apprenticeship'(IA). The IA also give room for adaptations to response to the changes of socio-economic conditions of a community. There has been a diverse way of defining informal apprenticeship by international organizations such as UNESCO, ILO, World Bank and others. Some of the definitions given by these institutions are: 'system of skills transmission for a trade from a master craftsman to a young apprentice who learns the trade on the job by way of observation, imitation, repetition as well as trial and error, thus by working and assisting their master craftsman'(Gwengwe, 2015, p.5). Similarly, Aggarwal et al., (2010) states that the sole purpose of informal apprenticeship is to acquire a set of requisite and practical skills from master crafts (wo)man' (MC) through a process that falls in line with norms and practices of the community where the training is taken place.

Although different terms such as informal apprenticeship, traditional apprenticeship or even apprenticeship in the informal economy have been given to this system of training, the focus of all of these terminologies is to impart people especially young persons with knowledge and skills to build careers. A practice, which is prevalence in developing countries, with majority of the practice being done in countries where they have large informal economy (Aggarwal et. al., 2010). There are varied reasons that account for the establishment of informal apprenticeship as a preferred skills development path as compared to formal education system. Among them are, many families have large number of children but they

are low income earners and therefore they are unable to educate such children through the formal education system (Nübler et al., 2009). As a result of that IA serves as a viable source of acquiring skills in the absence of them having the educational requirements to enrol on Technical and Vocational Education and Training (TVET). Also, some families in their quest to keep their trades among themselves, they introduce their male youth to learn the trades.

This system is such that knowledge and skills of a particular crafts or trades are mostly passed on from one group to another through family lineages. The training is such that a father will teach his sons the rudiments of his craft and the sons also train their sons in the same way as they were taught and the cycle continues. Example of this can be found in the gemstone cutting trade which is considered as one of the early crafts making. A particular one that comes in mind immediately is the story of Paul Revere, who was a member of popular silversmiths business in America. Paul had a brother by name Thomas, both of them trained as silversmith by their father. After them two of the children of Paul served their father as apprentice in a shop that belong to the family at Boston (Triber, 1998).

2.1 Apprenticeship in jewellery in Ghana

Apprenticeship in jewellery in Ghana, used to be possible through once direct relationship with a goldsmith. This means that it was only by inheritance that one can have access to learn and practice the trade of jewellery. Kotoku (2009) postulates that the basic requirement for any person to enrol as apprentice jeweller is to belong to the family of the jeweller, that is either the potential apprentice is his son or nephew. The only outside person that is allowed to learn jewellery is son of another Jeweller. This has been supported by Wilson (2002), who further states that apart from not allowing non-family members to enrol as apprentice jewellers, women were not permitted at all to learn the jewellery trade in Ghana. They were not even allowed to enter the jewellery shop let alone touch any of the jeweller's tools. If for any reason a woman touches the tools of the jeweller while she is in her menses, then certain rituals will have to be performed to cleanse the tools.

Although Ghana has joined the rest of the world in modernizing how skills in jewellery are acquired through the introduction of the school-based jewellery programmes and subjects at various levels of her education system, apprenticeship in jewellery still plays a vital role of developing the manpower needs for nation-building in the arear of value addition to the various mineral resources such as gold, silver and diamonds. For instance, there are only two tertiary institutions that offer jewellery related programmes at the undergraduate and post-graduate levels, whiles about 20 out of over 400 senior high schools.

2.2 Economic significance of informal jewellery apprenticeship

An empirical study identified traditional apprenticeship as the most significant training system that provides skills including jewellery making to young people in many informal economies of African countries. By so doing a master craftsperson satisfies a social and economic obligation to his community by transferring his/her skills to the next generation. Unfortunately, many developing countries including Ghana pay more attention to promoting the formal apprenticeship in the form of technical and vocational education training system (Nübler et al., 2009). Some of these countries virtually have no training policies that give credence to indigenous skills training system which is considered as the major movers of economies.

The rapid growth of any nation is largely dependent on the quality of its human capital (Anokye & Afrane, 2014). It is estimated that between 80 to 90% of career men and women in jewellery in Ghana acquired their trade through informal apprenticeship system (Atchoarena & Delluc, 2001). This gives them control of Ghana's economy and therefore, the means or process of the country's developmental growth. Despite the economic relevance of informal jewellery apprenticeship to Ghana's developmental agenda, enough has not been done by governments and other policy makers to improve and sustain it. For instance, Ghana is the second-largest producer of gold in Sub-Sahara Africa, with the country producing over 2.5 million ounces of gold annually. Out of this, about 90% of these are exported in the raw state without any value addition, because the country lacks enough of qualified jewellers who will add value to the raw gold, which causes the country to earn less revenue from the raw gold that are exported (Moran, 2015).

This would not be the case if the country commits herself to informal jewellery apprenticeship, because the content for training is usually hands-on whereby apprentices learn by working alongside the experienced master jeweller at a low cost. Also, training is integrated into the production process which is rooted in the jewellery industry. Additionally, informal jewellery apprenticeship is more relevant to labour market demands, particularly informal economy, where apprentice jewellers are provided with soft technical and business skills, establish business networks and link with business development services particularly in the field of jewellery. Beside these benefits as stated, informal jewellery apprenticeship also gives avenues to apprentice jewellers to earn some income whiles undergoing the training after they mastered in certain jewellery making techniques.

2.3 Informal jewellery apprenticeship process in Ghana

Ghana has a long tradition of informal jewellery apprenticeships among other trades such as: carpentry, masonry, auto-mechanics, welding and fabrication, foundry and casting, Tailoring, dressmaking and beautician, blacksmithing, shoemaking and repair. According to Palmer (2009) these informal apprenticeship system has widely been used to train skilled

personnel for families and communities. Relating apprenticeship training to other skills development system Anokye and Afrane (2014) opine that apprenticeship (informal) training is an art and depend on the level of expertise of the master craftsman and the methodologies he/she uses to transfer the skills to the apprentice.

The process of commissioning master jeweller (MJ) to train someone to become a jeweller in Ghana involves entering into an agreement between the MJ and the parents of the prospective apprentice jeweller, which is mostly done verbally. The agreement usually spells out the responsibilities and conditions of the MJ and that of the apprentice. Another issue that the agreement highlights is the remunerations to the MJ. Some MJs collect training fees, while others do not. Instead they let the apprentice work for them without any wage and where wage is paid to the apprentice, he/she is under paid. Some master jewellers offer the apprentices free accommodation, clothing food and pocket money in addition to free materials and facilities for the training (Fening, 2015).

The process of knowledge and skills acquisition in jewellery through informal apprenticeship has been described by Frazer (2006) as a four-phase process, which usually require a period of three or four years to complete. These involve the introductory stage (IS), tools, equipment and materials (TEM), manufacturing process (MP) and business management (BM) skills. After completing his/her training the graduation of an apprentice is often a community affair. This shows the social importance of apprenticeships.

3 Methodology

The study adopted the descriptive and phenomenology research designs under the qualitative research methods. These research methods were employed to enable the researchers to describe as accurately as possible the phenomena of the nature, processes and challenges of informal jewellery apprenticeship in Ghana (Saunders et al., 2003). In other words, the interest of the researchers as far as this study is concerned is to gather the thoughts, impressions, feelings, interpretations, understandings and representations of both master and apprentice jewellers (Sutton & Austin, 2015). The population of the study (as shown in table 1) were made up of jewellers who own jewellery business and are training other people to become jewellers through apprentice as well as people who are undergoing jewellery training. A sample size of 46 were selected through purposive and convenience sampling techniques from four jewellery enterprises in Accra. The inclusions of these jewellery shops were based on the fact that the owners agreed to provide information about their jewellery trade which other jewellers felt the trade was sacred whose information on their operating systems are not to be exposed to outsiders.

Table 1: Matrix of the population for the study (authors' construct).

Jewellery Enterprise	Master Jeweller	Jewellers	Apprentice Jewellers
Jewellery Shop A	1	3	5
Jewellery Shop B	1	4	8
Jewellery Shop C	1	3	7
Jewellery Shop D	1	2	8
Total	4	12	30

Observation and interviews were used as tools for data collection. The use of observation and interviews was based on the fact that the respondents that were involved in the study were not many so as some of the master and apprentice jewellers were unable to read or write effectively. Observation as data collection tool allowed the researchers to generate a richly detailed account, whose interpretations confirmed or otherwise of the descriptions of behaviours, intentions, situations and events that the researchers got from the respondents through interview (DeWalt & DeWalt, 2002). The researchers adapted *Thematic Analysis plan* to generate findings from the data collected through observation and interview that best answer the research questions. Braun and Clarke (2006, p.6) describe Thematic Analysis as 'a method for identifying, analysing and reporting patterns (themes) within data'. In applying the thematic analysis, the transcripts of each respondent (master and apprentice jewellers) and the notes made from the observation were initially read and re-read side by side of the interview guide and the observation checklist to familiarise with the contents. From these multiple rounds of reading and with the use of *HypeResearch* Software, some codes generated from the data that were collected. The codes were noted against the relevant sentences or passages of text. Among the coding system that were used are In-Vivo coding, values coding and others. These codes were then categorised seven (which includes, characteristics, enrolment & induction; content, teaching & learning and challenges). The seven categories were further grouped into 3 themes to obtain nature, processes and challenges in informal jewellery apprenticeship in Ghana.

4 Profiles of the jewellery enterprises used for the study

Jewellery shop A

The first jewellery shop is a sole proprietorship jewellery business established in 2012 and located at Gbawe Zero near the Gbawe cemetery in the Ga West municipal assembly of the Greater Accra region. It has a work- force of 9 which is made up of the master jeweller, 3 Jewellers and 5 apprentice jewellers. In all, 6 jewellers have been trained by the master jeweller

and all of them are practising as jeweller with 3 of them working as employees of the shop. The kind of jewellery that is produced at the royal signet jewellery is fine jewellery (jewellery produced with precious minerals) mainly in gold and silver. They also use both locally fabricated jewellery tools and foreign types. Their annual production of jewellery stands at 2 kilograms of gold and 5 kilograms of silver. They are specialized in hand-crafts and do not produce cast jewellery.

Jewellery shop B

The second jewellery shop that was used for the study is a sole proprietorship jewellery enterprise that was established in 1989. It is located at the premises of art centre opposite national lottery in the Accra metropolitan assemble in the Greater Accra of Region. This jewellery enterprise is registered with the Registrar General of Ghana under the registration of Business names Act-1962 (Act 151). The shop a work- force of 6 which is made up of a master jeweller, 3 jewellers and 2 apprentice jewellers. In all the master of this jewellery enterprise has trained 36 jewellers through informal jewellery apprenticeship of which all of them are practising as jewellers. The jewellers at this shop combine both traditional and modern methods of jewellery production with their product specialization being precious minerals (gold, silver diamonds, ruby, etc) jewellery. Their annual production of jewellery turnover stood at 6 kilos of gold (18ct) and about 20kilos of silver jewellery.

Jewellery shop C

The third jewellery enterprise that was used for the study is also a sole proprietorship jewellery business established in 2009. The jewellery enterprise is registered with the Registrar General of Ghana under the Registration of Business Names Act-1962 (Act 151). It is located at Ashiaman roundabout adjacent to bank of African in the tema metropolitan assembly of Greater Accra. It has a work - force of 5 which is made up of a master jeweller, 2 jewellers and 3 apprentice jewellers. So far 4 jewellers have been trained by the master jeweller through informal jewellery apprenticeship. Out of the 4 trained jewellers 3 of them are practising as jewellers while the other one has entered into a different trade. The jewellery production line includes fine, fashion and costume jewellery. The annual jewellery production output stand at 2 kilograms of gold, 5 kilograms of silver and unspecified amount of brass, copper and beads jewellery.

Jewellery Shop D

The fourth and final jewellery shop that was used for the study has been in operation since 2005 but has not been registered with the Registrar General of Ghana under the Registration of Business Names Act-1962 (Act 151). The jewellery shop is located at Dzowulu, a suburb of Accra. It has a work- force of 7 consisting of 5 jewellers and 2 apprentice jewellers. A total of

4 jewellers have been trained since the commencement of its operations. The jewellery shop D specialises in fine jewellery productions with their annual production estimated to be 3 kilograms of gold (in various carats) and 4 kilograms of silver.

5 Results

5.1 Background of the respondents

The characteristics of the master jewellers as shown in table 2 were made up of 4 male master jewellers who own jewellery enterprises with collective apprentice jewellers totalling 15 and 12 qualified jewellers. Two of the MJs had their jewellery training school. The ages of the MJs ranges from 34 to 61 years with the longest practising jeweller having 27 years of experience, while the least practised jeweller among the respondents being 5 years. Two of the MJs belong to Federation of Ghanaian jewellers, one is a member of jewellers Association of Ghana, while the remaining one does not belong to any association. The MJ2 who is not a member of any jewellery association indicated that:

. . . we don't have any effective jewellery association in Ghana here, I only saw some WhatsApp group that they are trying to do some but, it's freedom of association if you like you decide. So, until we see anything serious coming from them, I will not join yet.

Collective the study shown that the 4 MJs had trained a total of 47 jewellers and with the exception of two, all of them are practising as jewellers in Ghana.

Table 2: The characteristics of the master jewellers respondents.

Participant	Sex	Age	Mode of training	Years practiced as jeweller	Trained jewellers	apprentices
*MJ1	**M	61	school/apprenticeship	27	36	8
MJ2	M	42	apprentice	15	4	5
MJ3	M	35	apprenticeship	12	4	7
MJ4	M	34	school	5	3	8

●master jeweller **male

On the part of the apprentice jewellers (AJ), their characteristics as indicated in table 3 shows that all the 15 respondents were males with their ages ranged between 20 and 27 years. The educational background of 7 AJs had completed junior high school. Again, 4 AJs had completed either a senior high school or technical school. Meanwhile, 2 of the AJs were tertiary education graduates but 3 of them had not gotten any formal education. The period that the

apprentices had spent on their training as at the time of the study ranged from 6 months to 5 years. It was revealed in the study that 12 out of the 15 apprentices that were interviewed related to their master in one way or the other.

Table 3: The characteristics of the apprentice jewellers respondents.

	Gender	Age	Education level	Duration in training	Relationship with MJ
*AJ1	male	21	**JHS	6 months	brother-in-law
AJ2	male	23	JHS	3½ years	uncle
AJ3	male	21	****TECH	3 years	brother
AJ4	male	23	NON	1 year	not a relative
AJ5	male	22	JHS	8 months	not a relative
AJ6	male	24	***SHS	5 years	father
AJ7	male	27	JHS	3 years	father
AJ8	male	22	NON	2 years	uncle
AJ9	male	21	SHS	1 year	brother
AJ10	male	21	NON	2 years	cousin
AJ11	male	21	JHS	3 years	brother-in-law
AJ12	male	21	SHS	4 years	father's friend
AJ13	male	25	TETIARY	2 ½ years	uncle
AJ14	male	21	JHS	4 years	not a relative
AJ15	male	26	TERT	2 years	brother

*apprentice jeweller, **junior high school, *** senior high school, ****technical school

5.2 Enrolment, fees and induction processes in jewellery apprenticeship

The study revealed that the process of enrolling people in the informal jewellery apprenticeship programme is categorised into two forms. These are indigenous process (informal) and non-formal format. The first one is done through the traditional method whereby a relative, being an uncle's son or auntie's son or any other member of the MJ's close family is brought to him for training. In explaining the process, MJ1 said:

so if I want an apprentice I go to the village just as we followed Kwame [his master who trained him] or any time I go to the village somebody will definitely come that my son is growing he cannot just be there so I want him to follow you then we give them the rules and regulations if they are able to follow it or if the boy or the girl is willing to [follow] that one is most important because the mother can suggest but if the buy comes and he can't fit he will go back a lot of people who come and they

don't fit they go back then it becomes fight because it is a family matter so hahaa so that is it.

According to two of the MJ respondents, almost 80% of all that they have enrolled as apprentice jewellers in the past and presently are people who in one way or the other have relationship with their family. It was also noticed from the interview that hardly will people just walk to a goldsmith to apply to be trained as Jewellers. Citing an example MJ3 said:

if you are a carpenter by the road side nobody will come until somebody who knows your character brings his/her son to come and stay with you because he is coming to copy everything about you but anything short of that the parents will not bring their son to you for training.

Three of MJs use traditional/social method to enrol apprentice jewellers. However, one Master Jeweller does not enrol people based on their family relationship. He said 'I don't do the traditional way of bring drinks and that I prefer to take people through full interview'. What he does is anybody who expresses interest in being train as a jeweller has to submit informal jewellery apprenticeship application form and then go through an interview before he or she is enrolled. It emerged from the study that the process of enrolling as apprentice jeweller through the traditional method is not complete until the prospective apprentice is inducted into the jewellery shop. It is during the induction process that fees, vital information, advice and direction on the training are made known to prospective apprentice jeweller and his/her guardian]. The researchers through the interview also found out that the induction process involves entering into agreement and initiation.

On the issue of fees, the apprenticeship fees are in two forms; there is cash component and perishable items. The payment schedule of the fees is such that whatever is paid on the induction day, it is doubled and paid on graduation day. The items that the MJs demands from the prospective apprentice jeweller include: two bottles of Whiskey, two bottles of Schnapps, a Crate of Beer, two Fowls (a cock and a hen), a packet of cigarettes, and a specified amount of money. The money to be paid is normally determined by how far or how close the apprentice is to the family of the Master Jeweller. The researchers also found out that the initiation ceremony usually happens in the morning and it involves all those who matter most in the family of the prospective apprentice jeweller come along with him to serve as witnesses, while the MJ also invites some of his colleague goldsmiths to witness the induction which normally lasts for less than an hour. The process was described by MJ2 as:

. . . the whiskey is shared to the people who gather, they share the money and the drink. Normally the mother, father, uncles and all those who matter in their family will come they are the prime witnesses before the agreement takes off. Normally there is no paper hahaa then me too I will gather 1 or 2 people then they will also

come and witness so the drinks you bring that is what we drink before you are accepted [as a sign of witnesses] yes as a sign of witness. I also tell you what you must do and you must not do that and your parents have agreed that after the four years you pay this amount.

Among the responsibilities of the MJs accommodation for apprentices, findings of the study show that 3 of the master jewellers indicated that they were responsible for providing feeding and accommodation and all other resources (such as tool, equipment, materials etc.) needed for the apprentice's training. Narrating how he accommodate his apprentices, MJ3 said:

. . . all of my apprentices stay with me because they are one way or the other related and if they are from the community fine but if they are from far away, I have to find a place for them to live so if you cannot accommodate them you cannot take them.

On the part of the apprentice, the study revealed that their responsibilities to be providing services including domestic chores such as going on errands for their master, his wife and senior apprentices. In describing what he does for his master, as an apprentice jeweller, AJ3 said: 'I usually provide other household service to my master and his wife who I am staying with. I sometime wash his cloths and do other things'. During the observation at the jewellery shop, the researchers observed that the wife of the MJ who sell food around the shop often came to the shop to call some of the apprentice and send on errands.

The actual initiation process as indicated by three of the MJs are that the Master Jeweller slaughters the cock that was presented and allow its dripping blood to fall onto some of the main jewellery making equipment such as, anvil and the furnace (heath) at the shop, followed by pouring some of the gin into a crucible to perform libation by dropping the gin into the furnace. While the pouring of the drink is going on the MJ will be chanting simultaneously about things that the apprentice jeweller is going to learn. The chanting ends with a threat of curses that should befall the apprentice if he deliberately refuses to go by the tenets of the job, the fire which is burning in the heath should destroy the apprentice's life. The initiation continues as the apprentice jeweller is made to sit on the anvil again and the MJ will use a crucible to fetch some of the gin and pour it on the apprentice to seek blessing for him to the extent that he is told whenever he comes into contact with any metal, such metal should turn to gold for the apprentice. Once the initiation is over and the agreement is accepted by both parties, the apprentice is required to stay with his master for three or four years, depending on how fast the he/she absorbs whatever is taught him/her.

5.3 Subject matter and duration for the jewellery apprenticeship

Three of the master jewellers indicated that the subject matter for apprenticeship in jeweller is determined by the demand of the jewellery market. The MJ2 enumerated it as:

the apprentice learns on-the-job, so the apprentice come to work after the enrolment he comes to work when it is s-chain that you are weaving that is what the person is going to learn but basically by all means every day by all means you will set the heath to melt so he will start seeing those things.

This makes the jewellery items that people order from the master jeweller at a particular time the determinant of what master teaches the apprentice. For example, MJ2 said 'when I'm commissioned to produce Curb-chain then it is that particular type of item that the apprentice will be learning at that moment'. He added that:

. . . if I realised that after the whole period that the person has been there some of the processes would not have been done because there was no order for instance for an embossing, filigree, granulation, or gilding, when things like that happen may be a month or 2 to the person's graduation you can take the person through those things you feel he has not learn he or she has not learned.

Three of the MJs said that an apprentice jeweller requires four years on-the-job training to become a qualified bench jeweller, while one MJ said those who come to him for training spend 3 years, but the actual time spent by an apprentice jeweller to graduate depends largely on the effort of the apprentice. For instance, MJ1 said that a sharp-eyed apprentice stands the chance of learning jewellery much faster as compared to a non-observant apprentice jeweller. This was supported by majority (9) of the apprentice. In supportive of this AJ1 said 'I was expected to undergo the training for three years, but as on now I have already spent four years and still do not know when I am going to graduate'. Concerning the hours that an apprentice jeweller spends at the shop each day, 11 of the apprentices said they report to work by 7:00 am and close at 6:00 pm from Monday to Friday, except on Saturday that they close at 12:00 pm. One of the interviewees (MJ3) alluded that the long hours spent at the shop can be attributed to the fact that the apprentice jeweller is mostly in the same house with his master therefore the time the apprentice spends at the shop depend on the dictates of his master.

5.4 Methods of teaching and learning in jewellery apprenticeship

The outcome of the study as it was indicated by three of the master jewellers was that teaching in informal jewellery apprenticeship is not structured and therefore lack clarity and defined methodologies. MJ1 describing the teaching process as ' . . . it is a seamless way of learning, there is no syllabus, there is no break, nothing, there is nothing like holidays. Anytime the workshop is opened the person is there until the period it was closed]'. For that matter, the apprentice jeweller is not consciously taken to the classroom to be taught how to make jewellery. The researchers also observed that actual teaching of an apprentice jeweller does not begin immediately the initiation ceremony is done, instead he/she is made to go to work for

three months without being taught anything. This period which is considered as a probation period, is used to assess the apprentice's capabilities and readiness for learning. This account on the teaching method was stated by all the four master jewellers. According to all the master jewellers, during the probation period, the apprentice jeweller is required to watch his master (figure 1 & 2) whenever he is working (for example, milling wires, melting, pickling, and many more). He is also most of the times sent on errand to buy charcoal for setting the hearth which is usually spearheaded by their senior apprentices who are available to guide them on how to go about it and cleaning of the workshop and its environs.



Figure 1: AJ2 observing ring forming (Fieldwork, 2017).



Figure 2: An apprentice jeweller learning stone setting (Fieldwork, 2017).

After the probation, apprentice jeweller is allocated a workbench (figure 3) and then he is exposed to the various safety, tools, equipment and machine at the shop. A claim that was supported by the other three MJs.



Figure 3: Apprentice jewellers at their work stations working

The researchers noticed from the interviews that the Master Jewellers do not assemble the tools and equipment and teach the apprentices their names one after the other, rather what they do as MJ4 put stated as:

whenever I'm working on jewellery item and I need a particular tool I tell the apprentice bring a plier he will be looking at me, then you say that thing over there is called a plier, bring the tong ok he doesn't know so you say that thing over there bring it that is a tong so after sometime you would realize that he had known all the names of the tools and seen how it is being used, then he can start the basis by drawing wire until he learns how to make jewellery.

This method of teaching the names of the tools continue in that form and after sometimes the apprentice will learn the names of all the tools and equipment at the shop as well as their uses (figure 4). The first practical jewellery item that the apprentice jewellers said they learnt was chain making. Responses from fourteen out of the fifteen apprentice jewellers indicated that it took them between three to six months to learn various chain making techniques before they were progressed to learn piercing. This was collaborated by AJ3 who indicated that 'after my probation I was allocated a workbench and was taught how to make chains with silver.

I spent about 6 months on learning different types of chains.' The explanations given by three MJs were that the process of making chain entails a lot of processes in jewellery making which could demoralise or scare an apprentice who is not committed to learn and cannot perform the task the first few times. It is therefore, a way of assessing how determine an apprentice is in learning how to make jewellery. If he does not quit during this training period, then it means he is ready for the training.



Figure 4: Three AJs practising the use of jewellery tools

5.5 Challenges in informal jewellery education in Ghana

The responses of all the four master jewellers and the fifteen apprentice jewellers highlighted two major challenges that affect the apprenticeship in jewellery programme. The foremost challenge as enumerated by all the four master jewellers was lack of jewellery policy that regulates the informal jewellery apprenticeship in Ghana. Expressing his dismay about unavailability of the situation MJ1 who has been practicing jewellery for more than two and half decades opined that 'the Government of Ghana hasn't gotten any fine policy for jewellery apprentice and the industry as a whole. As a result of that the industry is not regulated as it exists in other vocations'. He cited an example as:

other systems had regulatory body like dressmakers their national associations were seeing to the standards and things like that. There is a hair and Beauticians things like that but for goldsmithing [jewellery] there is nothing like that there is no supervisory, this thing the final last lies with the master craftsman ee that was what was happening.

The second problem that emanated from the study as it was expressed by all master jewellers and ten of the apprentice jewellers were access to funds, cost of tools and materials. Expressing the difficulty in training his apprentice jewellers, MJ2 stated that:

the biggest one is the cost of the tools if you don't have money and you are trained as a jeweller you can't do anything by the time you set up your shop maybe you have to sell your family property hahaa so the cost of the tools, the cost of material it is even sold higher than the world market price to us, you get the point {hahaa} if you want to go and buy one pound ride now it is Gh¢1,700 (Ghana Cedis) which is one pound is 7.75g 23 [that is a quarter of an ounce] that is 23 carat but it is not like that in the world market that is if you calculate it that means we are buying it more expensive.

The researchers discovered that per the 'apprenticeship agreement', the MJ is required to provide the needed resources (such as tools, materials etc.) to the apprentice to learn.

6 Discussions

Background of the respondents

The nature of informal jewellery apprenticeship in Ghana is the type that are individually own where the master jeweller provide all the needed resource for training his apprentice. Despite the fact that the jewellery shops are usually mane by on master jeweller, collectively the informal jewellery apprenticeship sector has been able to train over 90%

of the jewellers in the jewellery industry in Ghana as the study findings indicate (Kotoku 2009). Again, the finding that demonstrates that the AJ provides other services including domestic chores such as, going on errands for master jeweller, senior apprentice as well as the wife in a way supports Donkor's (2006) assertion that some master craftsmen use apprentices to do all sorts of work that are not related to the area of jewellery apprenticeship. Buttressing Donkor's assertion, Kotoku (2009) declares that 'the Master Jewellers use apprentices for all sorts of menial work; even some go to the extent of using them to work for them at home or on their farms' (p. 233) In the researchers' opinion this kind of thing happens because the Master Jewellers are not under anybody's control.

Enrolment, fees and induction processes in jewellery apprenticeship

The widely used process of enrolling and inducting into jewellery trade through the apprenticeship is referred to by the researchers as Only Relation Enrolment Method (OREM), because the jewellery trade is considered to be sacred. The finding replicates and supports a similar claim by Palmers (2009, however, the researchers reject the claims by Kotoku (2009) that because the jewellery trade is sacred that is why its operating system and information are not allowed to be shared with outsiders. Therefore, only family members are accepted to enrol as apprentice jewellers. The researchers are with the view that the jewellers deliberately tag the jewellery trade as sacred so that they can keep others away from the jewellery trade in order to keep its fortunes within the family.

Subject matter and duration for the jewellery apprenticeship

The content of what is taught at the informal jewellery apprenticeship lacks clarity and defined structure. This inference is based on the result of the study which shows that the content that the Master Jeweller teaches the apprentice jeweller is driven by the demand from the jewellery market. The finding goes contrary to the claims by Abban and Quarshie (1993); Frazer (2006) who postulate that apprentice training in (Ghana) general is undoubtedly segmented into modules which are to be covered at different time frame within the entire duration for the apprenticeship; notwithstanding the fact that they are not formally written. Possible effect of unstructured content for jewellery apprenticeship, is that an apprentice jeweller cannot predict what he is going to be taught in advance. This in a way makes tracking his/her performance and progress very difficult. Also, because the content is not well organised, it becomes difficult to determine whether they are spread evenly for the training period to bring balance in the training. This creates the possibility of either overloading or less packed content within particular period of time in the training. It is interesting to note from the findings that the duration for pursuing jewellery through apprenticeship is four years, the actual time spent by apprentice jeweller to complete his/her training depends largely on his effort and how obedient s/he is to the master.

Methods of instruction and learning in jewellery apprenticeship

The strength of what the master jewellers teach apprentice jewellers is largely depend on the skilfulness of the MJ and the efficiency of the tools, techniques and methods that are used in the skill transfer. This in no doubt the determinant for the quality of jewellers likely to be produced. The finding clearly supports the study of Anokye and Afrane (2014) who state that apprenticeship training is an art and depends on the level of expertise of the MJ and the methodologies he/she uses to handover the knowledge and skills to the apprentice, which at the end establish the type of Craftsman he/she produces. However, lack of specific structure for the contents of the informal jewellery apprenticeship cause gaps within the flow of the training process. Meanwhile, if the content is organised well, then the apprentice will be made to progress in his learning by going through simple jewellery making techniques at the initial stages while he/she undertakes more in-depth and complex jewellery techniques as s/he advances in the training.

The learning process also involves a lot of repetition of the same job for several times, a process known as observational learning. The learning processes in apprenticeship in jewellery can be likened to Bandura's (1977) Social Theory of learning where all the four components (attentional, retention, reproduction and motivation as cited in Bandura (1997)) are present in the process of learning jewellery by informal jewellery education.

It could be inferred from the findings that the apprentice jeweller begins his jewellery learning by watching and paying attention to what the master does. His next step in the learning process is to make sure he retains the processes and methods employed by his master. He then has to put in an effort to reproduce what he saw his master do. When he is able to reproduce the item with little instruction from his master, he gets the opportunity to watch more activities that the MJ does which motivates him to reproduce more of the jewellery made by the MJ. The learning process in informal jewellery apprenticeship programme as the study revealed fall in line with the assertions of Johanson and Adams (2004) who say that skills transfer in apprenticeship occurs mainly by watching and imitating the master. This is comparative to the views of Anokye and Afrane (2014). Per their understanding on the learning process in apprenticeship, they posit that skills, knowledge and attitudes are transmitted through observation, imitation and on-the-job experience. This is strongly evidenced in the interview which determined that the apprentice jeweller learns jewellery making from their MJ at the workshop through observation, hands-on-the-job activities as well as following instructions from the master.

Challenges in informal jewellery apprenticeship in Ghana.

An empirical study identified traditional apprenticeship as the main provider of skills to young people in African countries. This reflects skills development in the jewellery sector. It is estimated that between 80 to 90% of jewellers in Ghana acquired their jewellery ma-

king skills through informal apprenticeship system (Atchoarena & Delluc, 2001). Compared to school-based jewellery education, apprenticeship in jewellery system is rather affordable, which mostly occurs through on the job training.

In as much as learning by doing creates a relaxed learning environment, lack of jewellery policy for regulating the training process gives rise to master and apprentice jewellers taking advantage to engage in activities that has nothing to do with jewellery training. This finding confirms a similar claim made by Palmer (2009), who claims that lack of regulatory framework for apprenticeship training in Ghana has led to the exploitation of the training process by some Master Jewellers (MJ) and their apprentices. For instance, Donkor (2006) asserts that some MJs use the apprentices to do all sorts of work, including domestic chores such as, laundry, fetching water, farming and other household chores that are not related to training to become jeweller. Also, some MJs use their apprentices as a source of cheap labour to undertake some hazardous activities such as gold refining. In supporting this assertion Anokye and Afrane (2014) opine that some MJ deliberately refuse to teach the apprentices what they are supposed to know in order for them to become effective Jewellers, because there are mechanisms that has been put in place to monitor the activities of Informal Apprenticeship in Ghana. The ripple effects of all these on the apprentices are that they are not able to acquire the needed skills and knowledge to become jewellers. These challenges push some apprentices who are not able to cope with the hardship to abandon the training entirely and thereby become liability on the society. Moreover, in a situation where there is no effective associative body for the jewellers and every jewellery shop is generally operated as sole proprietorship and the fact that apprentices are mostly family members, if for any reason the MJ abuses the apprentice, hardly will such an apprentice lodge a complaint. The only option he has in such circumstances if he cannot cope with the situation is to abandon the training. This in a way confirms Kotoku's claim that ' . . . this has therefore led to many, if not most of the apprentices abandoning the training' (2009, p. 223).

The finding that indicates that jewellers do not have access to funds, high cost of tools and materials cause ineffective jewellery training. An outcome that falls in consonant with Wilson's (2002) work. This has a rippling effect due to the fact that the MJ is required to provide all the needed resources such as gold and silver to the apprentices for their training. This means that if the MJ is unable to have access to material at a reasonable price, providing same to the apprentices to learn become very problematic. Failure to do so by the master too will mean that the apprentice will have to find his own resources for his/her training which will go contrary to the apprenticeship agreement.

7 Conclusion

The purpose of the study was to analyse the nature, processes and challenge in the informal jewellery apprenticeship in Ghana for its advancement in the country. Against these parameters, the researchers have come to the conclusion that: the nature of informal jewellery apprenticeship in Ghana is the type that are individually own where the Master Jeweller provide all the needed resource for training his apprentice. For a person to train as a jeweller through Apprenticeship system, s/he has to enrol by going through induction, pay fees which are made up of money and perishable items.

Content taught is driven by orders received by the MJ thereby making it unstructured and lacked criteria for assessing the performance and progress of apprentice jewellers. Teaching and learning methods are usually on-the-job training that rely on demonstrations and observation. Lack of policy to regulate informal jewellery apprenticeship in Ghana is indeed causing non-standardisation of informal jewellery apprenticeship in Ghana. Informal jewellery apprenticeship in Ghana has over the years proven to be a viable system that provides the needed skills to become a jeweller which is also cost-effective as compare to formal education. By advancing it in the informal economy of Ghana will improve young people's employability status which at the long round boost the fortunes of local economies.

In the absence of the government agencies coming up with policies to regulate informal jewellery apprenticeship in Ghana, the researchers are suggesting that jewellers in Ghana should come together to form a strong association that will make their present felt in the skill provision in the informal economy of the country.

To advance the informal jewellery apprenticeship in the informal economy of Ghana the researchers are with the view that there is the need to capitalize on the existing system to strengthen the agreement process between master and apprentice jewellers. Finally, there is the need to bring new skills into the informal jewellery apprenticeship by introducing the use of state-of-the-art jewellery making facilities to enhance the quality and reputation of informal jewellery apprenticeship.

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