

# Enhancing Visual Aids in Training of Child Caregivers in Daycares Within Nairobi's Urban Informal Settlements

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## Abstract

*As of 2017 there were 300,000 children living in Nairobi's informal settlements and at least 2,700 informal daycares run by owners with little or no formal training on Early Childhood Education and a majority with low education levels. There have been some efforts to train caregivers in order to improve the quality of their services. Visual aids are inappropriately used in the training of these child caregivers. Studies show that visual aids are highly successful in any behavioural change program because they aid the comprehension, attention and adherence of information especially in a low literacy setting as this. This paper suggests a framework to be used in creating visual aids to enhance training of child caregivers in Nairobi's urban informal settlements. This paper presents thematic analysis of literature to determine the best practices in using visual aids to train caregivers in urban informal settlements and achieve a framework. Literature was reviewed according to two themes which are visual aids for the low literacy audience and caregivers in informal settlements. This study established that, if appropriately used, visual aids have a great potential to aid training of child caregivers in urban informal settlements. Appropriate visual aids have to be contextualized, simple and consistent, designed with a systematic procedure, and respond to psychological needs of the audience. As such, informal child care centres are on the rise as informal settlements expand. Most caregivers in these centres are not formally trained, yet they offer a crucial service to the education system in the country. There is a need for a strategic training approach that will equip informal ECD caregivers with skills to enhance learning and child care in informal settlements.*

**Keywords:** Pictures, Training caregivers, Urban informal settlements, Visual aids.

## INTRODUCTION

According to UNICEF (2018), scientific research shows that most part of human development is from birth to eight years old and this is the time where the foundation for success is built into the adult years. During this age bracket the quality of childcare is very crucial as it also determines the quality of life even in adulthood.

From review of literature there are numerous studies that have been done highlighting the poor state of informal daycares and most of them list the lack of knowledge among the caregivers as one of the root causes of the problems. A situational analysis by UNICEF (2017) gives the perspectives of daycares being insanitary and cold. According to a manual of caregivers by The National Council for Children's Services in Kenya (2011), one of the challenges faced by caregivers is the lack of awareness in what their role is and recommends

the need to empower caregivers with appropriate training so that they understand their role in caregiving. Speaking generally of pre-primary school systems, UNICEF (2018) says that one of the reasons teachers lack to implement play-based learning is because teachers lack information on how to find and create low cost play materials using locally available materials.

Most of these studies recommend that the caregivers of these informal childcare centres be trained. In fact, according to Young & Dunkelberg (2004), one of the features that should be in a program to improve the quality of Early Childhood Development is to train caregivers and educate parents.

## RESEARCH METHODS

This paper presents thematic analysis of literature

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to determine the best practices in using visual aids to train caregivers in urban informal settlements and achieve a framework. Keywords used to search for literature were: visual aids and training, pictures and low literacy audience and training of caregivers. Data from different databases was reviewed and synthesized.

Literature review of studies that support various theories of using visuals effectively for instruction and effective communication was also carried out. Some of the theories addressed include; the process of using visuals, strategies of using them effectively and the style of visuals that are appropriate for a low literacy audience.

## RESULTS

This chapter is a review of literature that focuses on; childcare and caregivers in urban informal settlements, caregiver trainings, strategies used in training adults with low literacy and how pictures aid comprehension, recall learning from health communication. It also looks at various theories on the process of using visuals and its effective use of visuals in materials and training.

### Childcare and caregivers in urban informal settlements

Scientific research shows that most of human development is from birth to eight years old hence this is the time where the foundation for success is built into the adult years (UNICEF, 2018). The first six years of life are very important since brain development is fastest in the early years, by the second year the brain is 70% of an adult brain and by the sixth year the brain is 90% the weight and size of the adult brain. The early years is the period where the child has the ability to learn and acquire certain knowledge and skills and attitudes very quickly with minimal effort since the brain is in its most malleable form (Busolo & Agembo 2017).

According to Muendo (2014) the provision of childcare services in the informal settlements is highly informal because of financial obstacles. In the slums there are three main strategies for childcare; combining childcare and work, relying on kin and neighbours and using centre based

care (Clark et al., 2018). Factors like more women joining the workforce and women led households have led to the existence of daycare business (Wairimu, 2014). Also, urban areas lack a network for family support like in the rural area where the child could be taken care of by other kin (Muthuri, 2016).

As of a mapping done in 2017 there were 2,700 informal daycares in Nairobi's informal settlement (Caddy, 2017). The quality of the daycare centres is generally poor; overcrowding, poor sanitation and the environments are not conducive (Ng'ang'a, 2009). An example of a daycare in an informal settlement given in **Figure 1**. There are numerous studies that have been done highlighting the poor state of these informal daycares and most of them boil down to lack of knowledge among the caregivers. For example, in the case of malnutrition in the informal childcare centres, Wahome & Mbatia (2017) say that the main cause of malnutrition in the Mukuru and Viwandani slums is the lack of knowledge on feeding practices. They recommend that training be extended to caregivers on child feeding practices. **Figure 2** shows the exterior of a typical daycare in an informal settlement.

According to Emily (2002) the first characteristics of a good daycare is that the caregivers should be trained on Early Child Development and Education. However, this is not the case in most informal daycares where most caregivers are not trained on Early Child Development and Education. A study conducted by Wairimu



**FIGURE 1**

An example of a daycare in a low income area

Source: Habib 2014



FIGURE 2

The exterior of a typical daycare in an informal settlement

Source: Deskgram 2019

(2014) in Kibera to address the challenges faced by teachers in non-formal pre-schools established that, 76% of the teachers in the sample population of around 30 participants, did not have training on ECDE and only 20% had an ECDE certificate and 3% only had a diploma in ECDE. In the case of learning materials, a report by UNICEF (2018) says that even if teachers have knowledge about play materials, often they are not trained on how to find or create play materials using locally available resources.

### Interventions to improve quality: Caregiver trainings

According to Young & Dunkelberg (2004), one of the features that should be in a program to improve the quality of ECD is to train caregivers and educate parents. There are numerous studies that have been done highlighting the poor state of these informal daycares and most of them boil down to lack of knowledge among the caregivers and many recommend training of these caregivers.

Mostly the interventions that are done to these caregivers in the informal settlements is training on various aspects of childcare like health and nutrition, hygiene, classroom management and business issues on how to make them profitable. After the training the caregivers are given handouts which are mainly notes that have little or no visual language/illustrations to accompany the text. In most cases the handouts are just notes developed by ECD experts. The caregivers have to rely on written information to help them remember, comprehend and adhere to the instructions given during the workshop.

### Trainings for caregivers in Nairobi's urban informal settlements

As of 2017 there were 300,000 children living in Nairobi's informal settlements and at least 2,700 informal daycares which are run by owners with little or no formal training (Caddy, 2017). Not only are the daycares informal but most of the caregivers are not trained on Early Childhood Development (ECD) (Wairimu, 2014). The caregivers' skills and personalities are big determinants of the quality in a child set up. Studies show that caregivers who have formal education or have been through training provide better quality childcare (Burchinal et al., 2002; Kidogo, 2019).

Burchinal et al. (2002) says that previous studies consistently show that caregivers who have formal education provide better quality childcare. This resonates with an assessment of 24 childcare centres in Nairobi's low-income areas whose caregivers underwent a 9-month quality improvement program that involved training and mentorship visits. The assessment was done by Kidogo, one of the few organizations that conduct caregiver trainings in Nairobi's low-income areas. A global tool called Family Child Care Environment Rating Scale (FCCERS) was used to rate the quality of caregiving before and after the trainings. FCCERS is an internationally recognized tool that measures the quality of child care settings. The FCCERS tools look holistically at the physical environment of the centre, program of activities, personal care routines and the quality of care given by the caregiver among many others. The results showed that there was a significant increase in child care quality. The increase was from a score of 1.4 to 2.9 out of a possible 7 (Kidogo, 2019).

According to Hickman (2014), in normal ECD settings professional development of teachers is related to the quality of the ECD program and also determines the developmental outcomes for children. For a centre to have quality it needs to be nurturing and stimulating and this is closely linked to the personal attributes of the caregiver. Ongoing support and mentoring for ECD practitioners are key for quality of care and to ensure new skills that are learnt are applied consistently and effectively. The support and mentorship are important especially if the training was short or if the ECD

practitioners have low prior education and skills (Hickman, 2014).

There are quality improvement programs that are mainly in the form of training and mentorship to the caregivers who operate these daycares. A situation analysis revealed that most of the interventions in Nairobi's low income areas are done by non-governmental organizations like Tiny Totos, Tayari, Kidogo and the Aga Khan Foundation all based in Nairobi. The interventions are mainly workshop trainings where the caregivers are trained on mainly four areas which include, health and nutrition, caregiving skills, business and soft skills training for the caregivers. In some cases, the workshop training is followed by mentorship visits.

According to desktop research, Tiny Totos teaches caregivers business skills, child stimulation and nutrition, and thereafter the caregivers are given a small loan for their business. Kidogo's training topics include, but are not limited to, business, safe and stimulating areas for children, health and nutrition, parent and community engagement.

### **Use of pictures to aid comprehension and recall learning from health care communication**

Studies show that when illustrations are used with text, for example in the case of health education, they help to draw attention to the message, assist in comprehension, help in recalling and it also increases the likelihood that people will act in accordance with the message.

According to research low literacy adults benefited more than high literacy adults from the use of pictures in health education materials (Houts et al., 2006). According to Houts et al. (2006), use of pictures closely linked to written or spoken text can increase attention to and recall of health information as compared to the use of text alone. Pictures also have the ability to improve comprehension when they show relationships among ideas. Health patients, especially those with low literacy levels, benefit when pictures with very simply worded captions are used with spoken directions.

### **Visuals for effective communication**

Visuals, like illustrations, have the ability to portray complex information in simple ways by using graphic symbols (Osborne, 2006). A designer has a creative approach of communication that is unique and creates a deeper connection with people than any other way because they have the ability to use non-verbal codes like products and use them to convey messages and solve solutions (Cross, 2006).

Visual artists have the ability to simplify complex information and present it in a way that is more comprehensive, appealing and inviting to read. This technique is often used and is very effective when the target audience is of low education levels or has low literacy levels (Houts et al., 2006; Carstens et al., 2006). According to Houts et al. (2006), the use of illustrations in materials significantly and positively affects the recall, comprehension and adherence of the contents among readers.

However, there are guidelines and recommendations to ensure the appropriate use of visuals, since inappropriate use of visuals can lead to misinterpretation of content materials. The visuals used should have the appropriate style, be adequate and culturally relevant to the target audience, simple with no unnecessary details and they should be tested with the target audience (Buono, 2006; Carstens et al., 2006; Plimpton & Root, 1994; Dowse & Ehlers, 2001).

In addition to these key characteristics of appropriate visuals, the success behind having appropriate visuals lays behind an appropriate process. The process requires content creators and the visual artists to collaborate to simplify the content. The content also needs to be tested with the intended audience before the final design is done. Even after distribution of the materials, feedback should be collected and the whole process of creating materials for the low literacy audience is iterative (Plimpton & Root, 1994; Dowse & Ehlers, 2001).

### **Strategic process of using of visuals**

Peregrin (2010) concurs that pictures have a

positive effect on retention, comprehension, recall and adherence to health materials. Peregrin (2010) quotes Linda Hodgson who says that communication is 55% visual, 37% vocal and 7% verbal or the actual message. Peregrin (2010) looks at the process of creating effective communication using visual cues. One needs to first have a clear objective of the main message that needs to be passed across. Thereafter, one can go ahead and see what part of the message can be presented visually and reduce the overall text. In most cases not everything can be presented visually and therefore it is important to choose the areas that can be presented visually. According to Peregrin (2010) the visual style used does not matter as long as the style is simple and without clutter or unnecessary detail. However, Clark et al. (2010) says that the visual style to be used must depend on factors like the objective of the learning materials, and the audience prior knowledge to the content. For example, using simple line drawings would be better than having three dimensional animations to illustrate complex information because of content overload. Unnecessary details and clutter can divert attention from the message especially in low literacy settings. The visuals also need to be culturally relevant to the target audience. The target audience should also be included in testing if the visual cues to see what messages are gotten from the intended audience.

Clark et al. (2010) mentions three guidelines that should be considered in order to have effective graphics. Firstly, the properties or style of the graphics. This is because some styles are more suitable in some cases, for example it would be easier to illustrate a complex process using diagrams and charts than using real photographs because of presenting the content in a simpler way that reduces content overload. Secondly, is considering the intended learning outcome. Sometimes there are different objectives that call for different styles. For example, one objective could be to decorate materials and motivate the reader and another objective could be to present factual information in a realistic way. Thirdly, prior knowledge of the subject among the learners. Research shows that when the learners have prior knowledge on the subject, using visuals does not have a lot of impact on them because when reading the words, they can easily build mental pictures of the content. For example, it would not

have as much impact using illustrations to explain how the brake system works to engineers than to use images in novice learners. Visuals are highly effective for novice learners or when presenting introductory lessons.

Clark et al. (2010) says that there needs to be a systematic approach for using graphics in materials. If there is no systematic approach graphics could easily hinder learning, since they might be taking away from the content by diverting attention. There are three areas that are considered while designing graphics. Firstly, is the look and feel which is mainly the theme of the overall style used. Secondly, is the suitability of individual illustrations for each case and thirdly is the layout design of the material which basically is the placement of art in relation to other components like white space, text and the page.

Clark et al. (2010) suggest a five-stage process that should be followed while using graphics. Firstly, one needs to define the goals of the instructional materials. This resonates with Peregrin (2010) who says that the first step is having a clear objective of the main message. Different materials have different objectives like motivating, describing a process or even solving a problem and they call for different styles. The second step is to determine the context in which the materials will be used. The context includes things like, the learner profile, the setting of the learning environment, perhaps style guides to be considered in the case of organizations. The third step is to design a general visual approach which is the look and feel of the visual style to be used. The fourth step is to determine the communication function of different content areas and determine individual styles to match up the different content types. For example, if a certain content area is to explain multiple content it might need a visual with an organizational style like a diagram or chart to present the content. In some cases, photographs will be needed. The last step is to plan and layout the graphics to respond to different psychological instruction events. For example, if the content is introductory and the learners are novices one might consider to use visual content that is simple and focuses on aiding attention and reducing cognitive overload. If the learners are low in personal motivation then it would be prudent

to focus on visuals that promote motivation, for example using realistic pictures that they can identify with and are inspiring.

### *Using visuals for the low literacy audiences*

Buono (2006) gives some guidelines for creating materials for a low literacy outreach. The guidelines give information about various aspects of the materials; the text, visual, format and the layout. The visuals should be used wherever possible to explain the headings and important information and the visuals should relate to the information. It is also necessary to have captions accompany the pictures as pictures could be interpreted differently and the captions guide the reader on what to look for in the picture. The visual style should be simple and should not include extra details, for example they should be simple line drawings. Generally, the materials should have only the basic information the reader needs to know and there should be consistency in organization and formatting.

Osborne (2006) suggests ways in which visual artists could help healthcare professionals to communicate. Visual artists could help the health care professionals draw simple sketches and the idea here is not to make them great artists but to let them appreciate the power of simple sketches. Secondly, the visual artists could assist in the creation of creative health care handouts that have illustrations printed on them and also leave room for the professionals to draw on them and edit them as they like. Thirdly, visual artists could collaborate with health care professionals to help them get low cost but quality visual materials (Osborne, 2006).

According to Osborne (2006) visuals can help tell the health care story by making the materials have proper layout and design. Since most content is developed by health care experts, it is highly likely for the materials to have a lot of text that is hard to read. This eventually makes the materials unappealing and uninviting to read.

Osborne (2006); Houts et al. (2006) agree that visuals actually help the reader recall the information. Visuals also have the ability to

portray complex information in a simple way by using visual symbols.

According to Carstens et al. (2006) visual materials, particularly in developing countries, are often used to supplement, complement or even replace the written word for effective communication. However, the difficult part in this is actually choosing a visual style that is appropriate for the low literacy audience. Sometimes the use of graphical conventions like speech bubbles or even mathematical symbols in illustrations can be a barrier to comprehension (Carstens et al., 2006).

Carstens et al. (2006) looks at the relationship between the complexity and abstractness in visuals and the comprehension among literate and low literacy adults in South Africa. In the study, respondents were shown materials with varying visual styles. The results showed that as the visual abstraction increased there was also an increased difference in the level of comprehension between the literate and low literate audiences. For example, when one wants to portray a conversation between two people, it would be comprehended better with facial expressions and body postures than having speech bubbles (Carstens et al., 2006).

Plimpton & Root (1994) suggest a process for creating materials for a low literacy audience. The first step is to create the content. Here the content creators, who in this case are health experts, write down content that is simplified. Then the artists are incorporated to create the layout design in a way that it will bring people's attention to the material. Thereafter the material that is made is tested with the intended audience and this step is often overlooked. Most of the testing is done by professionals instead of the intended audience. Only after the materials are tested and the intended audience satisfied that then the artists could go ahead and make the final product. Sometimes what makes it hard for people to stick with this step is that feedback and peer review takes time. After the final material is designed and distributed, it is important to track down the distribution of the materials and contact users for feedback (Plimpton & Root, 1994).

## DISCUSSION

The successful use of visuals to enhance communication is dependent on factors like; having the correct procedure and involving the intended audience, using the appropriate style that resonates culturally and socially with the audience and testing the visual tools before roll out.

There are various approaches and guidelines that are reviewed in this literature from different scholars and they focus on three main areas; firstly, how visuals are incorporated in instructional materials. Secondly, how visuals are used to enhance training and thirdly, the correct procedure of using visuals in the materials and in training.

From literature review, it is evident that visual tools are successful in enhancing communication when they are used appropriately in instruction or in instructional materials and when the correct process of using them is followed. If the visual tools are used inappropriately then there is no guarantee in enhanced communication, instead it hinders communication. From literature review, there are four main themes that contribute to what appropriate visual aids are.

### *Simple and consistent*

Firstly, visual aids need to be simple and consistent. The overall visual style used in materials should have less details and less clutter. For example, drawings should be very basic and they should not have unnecessary details because they might divert attention away from the main focal point. In the case of text there should be less words. The best practice is to have around 60% of the information visual and the rest written or spoken. Another case would be colour, in instances where colour does not add much value to the visual aid it is better to use black and white. The layout design should be consistent across the materials. This case could be applied in having at least one visual style that runs throughout the material or even having certain components in certain areas which could even help in faster way finding.

### *Contextualized, user centered visual aids*

Secondly, the visual aids need to be contextualized.

Contextualization means that it is user centered. User centered visual aids start with having a process that considers the needs and pains of the user. For example, understanding their environment, considering their prior knowledge of the topic at hand and the environment they are in, involving them in the process of creating the visual aids and testing.

Contextualization also means that the visual language has elements or cues that they can easily resonate with. It is also important to consider how they interact with the materials and when they do it.

### *Appropriate style to the needs and overall outcome objective*

Apart from addressing the content at hand, visual aids also need to address psychological needs of the audience. There is more to presenting the information in a visual way to aid comprehension. There are also psychological needs which could be to inspire the audience, or to motivate them to conform to a certain behaviour. The psychological needs should be addressed and they may dictate what style or even medium is appropriate to use. The visual designer should have a clear understanding, not only of the content, but also of the main purpose of the message and the main purpose of including visual aids.

### *Having a correct procedure*

As outlined in the literature, having a correct design process is key to appropriate visual tools. The procedure should include different stakeholders and it should begin by first defining the main objective. Here, the main purpose of the message and the main objective of using visual tools is addressed, then one studies the context by taking note of factors like the learner profile and the environment. Then the designer designs the general look and feel of the visual aids based on the context and the message objectives and thereafter determines individual styles for each component of the content. The visual aids need to be tested with the final user before the design is finished and rolled out. Even after the visual aids are rolled, there needs to be a clear strategy laid out for collecting feedback in order to keep

on improving the visual aids. **Figure 3** shows a summary of the ideal process of using visual tools to enhance communication based on literature review. **Figure 4** shows a summary of the ideal characteristics of appropriate visuals tools to enhance communication based on literature review.

Visual designers should work closely with content creators and assist trainers to articulate their content visually during facilitation. They should also assist in providing low cost ways to incorporate visuals. **Figure 5** shows a summary of the three main roles of visual artists in creating visual tools used in training.

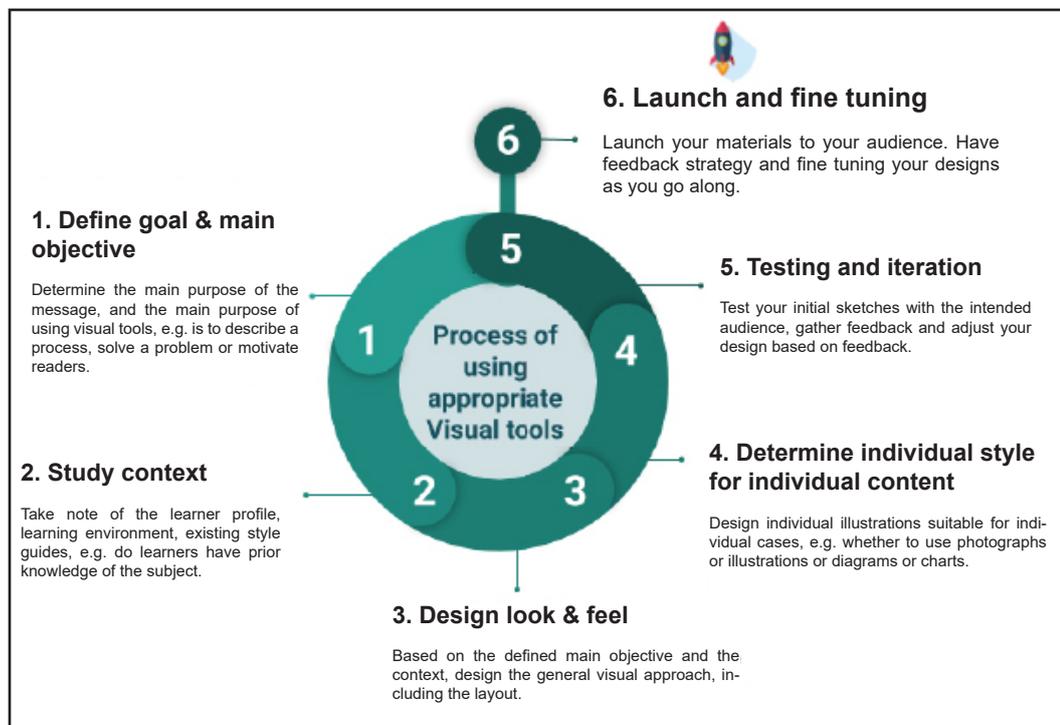
## CONCLUSION

Informal settlements in Kenya are expanding as urban populations increase. As such, informal child care centres are also on the rise. Most caregivers in these centres are not formally trained, yet they offer a crucial service to the education

system in the country. Given the planning and governance constraints in the formal education system, there is a need for a strategic training approach that will equip informal ECD caregivers with skills to enhance learning and child care in informal settlements.

## RECOMMENDATIONS

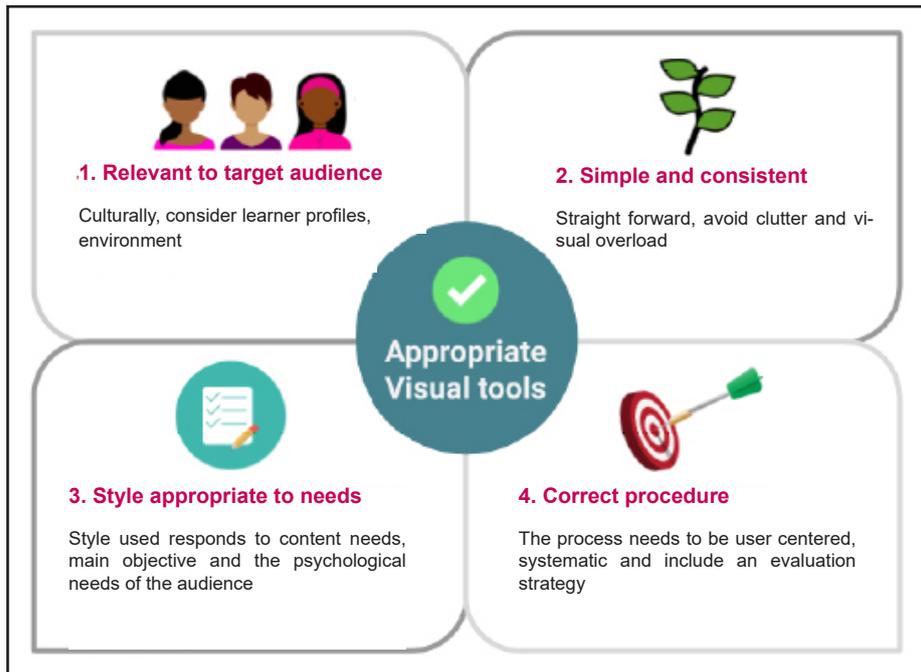
This study established that, if appropriately used, visual aids have a great potential to aid training of child caregivers in urban informal settlements. Appropriate visual aids have to be contextualized, simple and consistent, and designed with a systematic procedure, and respond to psychological needs of the audience. This study recommends a conceptual framework that ensures content that is designed for the caregivers is developed with a visual designer to make the content simple, effective and contextualized. This will also make work easier for the trainers. **Figure 6** shows a proposed framework on how to use visual aids to enhance training.



**FIGURE 3**

A summary of the ideal process of using visuals tools to enhance communication based on literature review

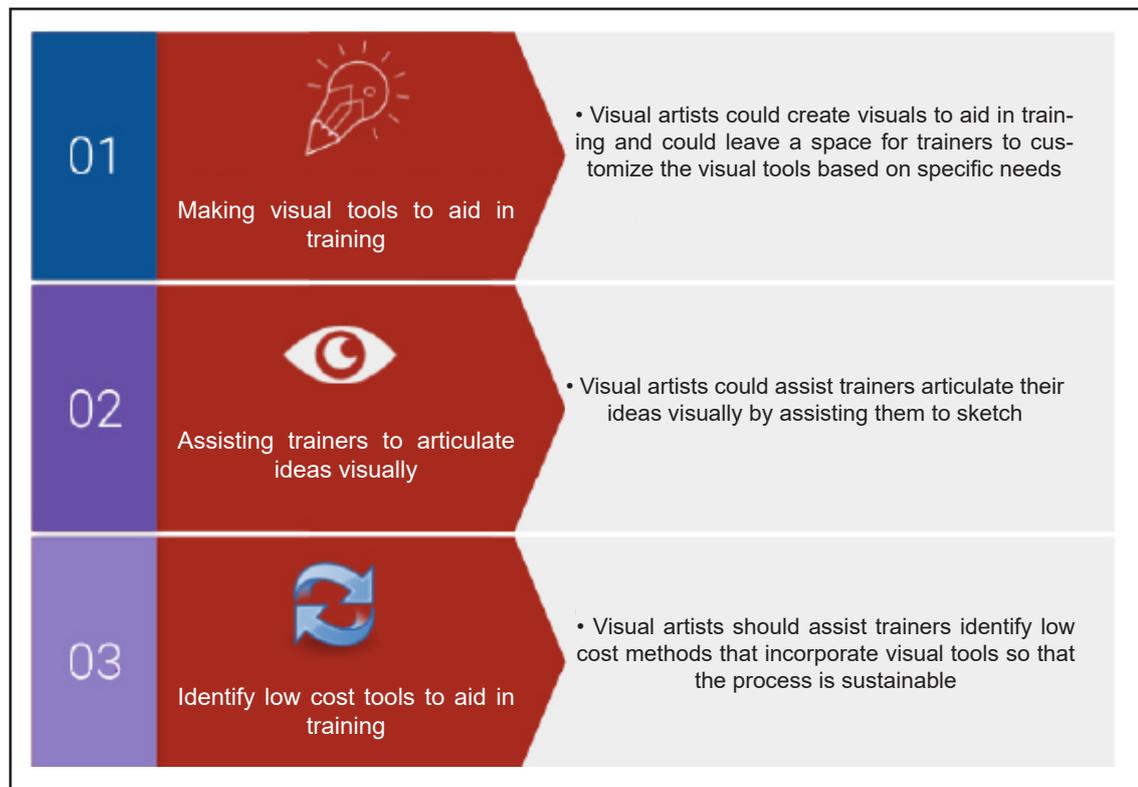
Source: Author 2020



**FIGURE 4**

A summary of the ideal characteristics of appropriate visuals tools to enhance communication based on literature review

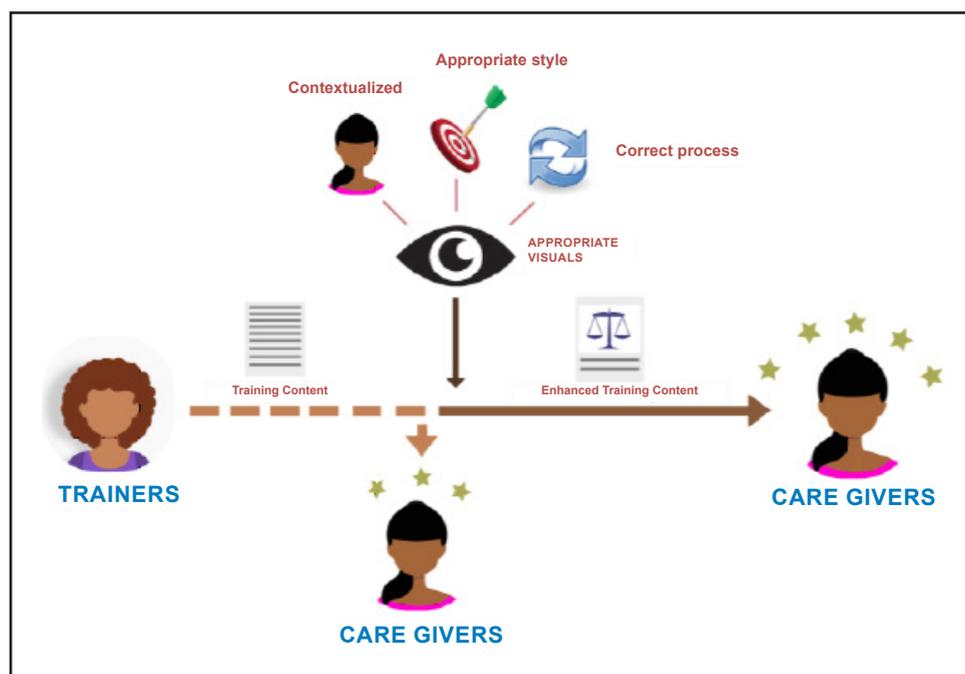
**Source:** Author 2020



**FIGURE 5**

A summary of the three main roles of visual artists in creating visual tools used in training based on literature review

**Source:** Author 2020



**FIGURE 6**  
 A proposed framework on how to use visual aids to enhance training  
 Source: Author 2020

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