CO-DESIGN: CATALYST FOR INCLUSION IN THE DESIGN PROCESS[1]

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Abstract

Older persons are considered custodians of culture and the knowledge they possess need to be preserved for posterity. Is there a good approach to extract this knowledge and package it for posterity? This paper is an analysis of co-design approach and how it can be used to induce, capture and collect the knowledge, ideas, wishes and hopes of a group of older persons for the preservation of a cultural museum. Through the use of co-design tools, the older persons provided visual narratives that were used to redesign RAMA Cultural Centre in Homabay County. A field survey in Homabay County in August 2016 revealed that RAMA Cultural Centre had many cultural artifacts that were not well preserved and were at a great risk of destruction from environmental factors such as pests, molds and theft. Besides these, the older persons who were the curators of the cultural museum, had not been able to successfully integrate the youth in the management of the museum leading to a possible extinction of this indigenous knowledge. The methodology describes the co-design tools and how they were applied to include the older persons in the design of the RAMA Cultural Museum. The discussion is on co-design approach for novice researchers, possibilities and challenges of co-designing with older persons and concludes with learning on how to effectively co-design with non-designers, specifically older persons, tapping into their dreams and aspirations so as to inform as well as inspire the design development process.

Key Words: *Co-design, Co-create, Participatory design, Probes, Prototypes, Generative design tools, Older Persons*

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[1] *Oral Presentation*

INTRODUCTION

Co-design refers to designers and people not trained in design working together in the design development process (Sanders & Stappers, 2014). The 1960s and 1970s witnessed a design community, concerned with the involvement of users in the design process for production of more acceptable products (Cross, 1971) and this has evolved to a present day where co-design has become rigorous and is a widely used approach across a range of contexts such as healthcare management, natural resource management, community mobilizations and so on. Co-deign is considered collective creativity as applied in the whole design process. According to Steen, et al., (2011) co-design is an approach that enables a wide range of people with diverse abilities to make a creative contribution to the solving of a problem. It is on this basis that co-design is considered a panacea to solving a myriad of problems leading to a great interest in it from diferent sectors such as business, healthcare sector, government and private sector, the reason being, through co-design, users are empowered and the design process becomes democratic.

THEORY

How do designers and non-designers engage in a design process? How is information shared between them to the point of a design solution? According to Sanders & Stappers, (2014) co-design considers the 'user' as the custodian of knowledge. The role of the designer is then to develop tools and methods through which this knowledge can be harnessed from the user. Brandt et al., (2013) in looking at ways to engage 'users' talks about their diversity and how the same can affect the nature of engagement. This diversity is a factor of age, gender, language barriers, literacy levels, all of which necessitate creativity in approaches to engagement.

Co-design with communities

One of the key differences between co-design and traditional design processes is that the design team will face a community and not a 'client' and will involve several stakeholders including government officials and NGO representatives amongst others. The designers will work to co-create with people for whom design, design concepts or design processes have not yet been part of their experience. This is one of the reasons why in preparing for such a task, it is important for the designer to immerse into the community in order to understand its culture, needs and structure. It becomes very important to be observant of social dynamics. The co-design process should never be driven by individual interests, but should be communal and

collaborative. To effectively collaborate with the community, the following considerations need to taken:

a. *Build empathy*

Get to know the community before engaging in co-design. Each community is unique and cultures differ from one to the next. Start by knowing the basics; levels of education, language, social structures, expected code of conduct and so on. When a designer becomes one with the community the co-design process becomes easier.

b. *Make use of visual materials*

For the community, it may difficult to understand conceptual ideas on an abstract level. Visualizations have proven to be very useful as a means of presenting ideas and as a basis of discussion and involving the community. Visual clues will reduce complexity and make contexts and correlations tangible and thus comprehensible and will allow people with diverse abilities participate in the design process. Visual aids also form a basis for storytelling and narratives and will complement spoken explanations and written concepts.

c. *Assign roles to the community*

One of the greatest challenges of co-designing is that of treating the community and other stakeholders as equal partners in the design process and allowing each to create. Sometimes the assumption the community makes is that someone has come to solve our problems. It also sometimes becomes very difficult to avoid providing ready-made solutions to the community. Misunderstandings of roles and in consequence frustration can be avoided when processes and roles are continuously and critically reflected upon and explained. The role of the designer is often that of a facilitator and not a creator and for some designers, this becomes difficult. Co-design means that the community should be actively integrated into the design process and be allowed to provide their solutions to their challenges and all parties must be aware that they can or must take a creative role in the process.

d. Feedback

Providing timely feedback is very important in co-design. It creates a platform for further reflection on the outcomes of the process and can be a breeding ground for greater ideas. Timely feedback also builds trust amongst participants.
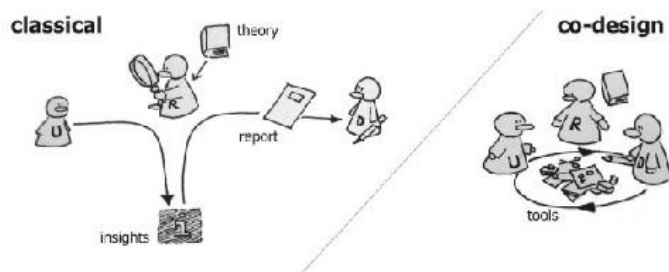
Co-design with older persons

Our ageing populations make it critical that older persons continue to live and participate in their communities. The ageing of individuals is associated with a decline in abilities such as sight, hearing, working memory, fine motor control, speed of response and mobility (Siu, Ng, & Chan , 2011). Accompanying these are degenerative illnesses that come with age and a lack of effective social and family support system for the older persons. These challenges, coupled with policy and governance issues, have led to a surge in the number of studies that seek to address the well being of the older persons (Beverfelt, 1984; Lindsay et al., 2012; Margot et al., 2015; Siu, Ng, & Chan , 2011; Massimi & Baecker, 2006), mainly focusing on co-design for health management, housing needs, access to technology and use of assistive devices. Little has been done in terms of research on how to tap into the tacit knowledge the older persons possess. Studies done by Beverfelt, (1984) on life histories of elderly Norwegians, show that the older persons can make significant contributions to culture in general as well as gerontolgy. Most older persons have a responsibility as culture bearers and their experiences may be used to teach younger generations about culture and for cultural posterity. The challenge is often how to engage the older persons in harnessing this knowledge and expanding its access to the world as a whole.

RESEARCH METHODOLOGY

Co-design approach for design research

In recent decades, co-design has become a widely used approach in design research. In it, users and designers work together to create, propose and develop their ideas and solutions together. Co-design is a versatile approach that offers all stakeholders a means of engagement in collective action, creativity, understanding and mutual learning (Sanders & Stappers, 2014). Through co-design, participants offer constructive solutions in relation to products, services and systems. This approach to design has several advantages as compared to classical design approaches shown in *Figure 1* below:

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Figure 1: Classical roles of users, researchers, and designers in the design process (on the left) and how they are merging in the co-designing process (on the right).

Source: Sanders & Stappers (2008).

One key advantage is that in co-design, there is direct involvement of people in producing tangible ideas as a means to generate insight and creativity. In addition, the collaborative design experience often helps to uncover and address previously unmet or unrecognized needs. Lastly, the shared decision-making involved in co-design allows people to progress towards shared goals in ways that offer mutual benefit for all participants. It has been observed that involving local stakeholders is crucial in the design of products, services and public facilities (King, 2019). As a result, social researchers and design practitioners are involving local stakeholders in developing a knowledge pool for their specific needs through co-design. This participatory process is considered a means to stimulate creativity in developing effective design interventions.

This project aimed to collect and organize local communities observations and to use their insights to improve the existing designs and operations of RAMA Cultural Centre. Members of the local community in charge of the day to day running of the centre were assembled in a two-day workshop to share knowledge and insight through a participatory design process. This approach allowed a multi-perspective view of problems and design solutions.

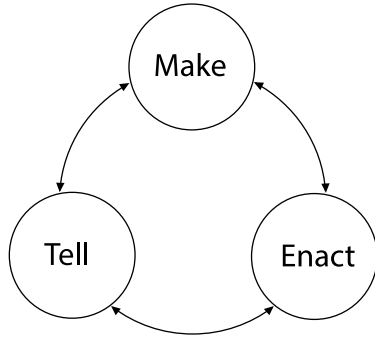## Co-designing with RAMA Cultural Centre members

The researcher in this project applied co-design approach in exploring possible solutions to problems that affect the sustainability of RAMA Cultural Centre. The main objective in establishing RAMA Cultural Centre was to conserve and preserve luo heritage

through collecting, curating and exhibiting luo material culture. This is intended to lead to the establishment of a vibrant community-based tourism enterprise. To grow into the greater vision, the center is currently involved in cultural festivals within and around the Nyanza region. They also organize tourism excursions within Karachuonyo to Lake Simbi Nyaima, Homa hot springs, Gor Mahia Shrine and Otok Pottery. However, the centre faces several challenges, key being that the already collected cultural materials are not well curated and are at risk of destruction from environmental factors. The center itself is also in a debilitated state, putting at risk the cultural materials stored in it. Existing exhibition and display does not effectively promote the cultural materials nor provide knowledge on the same. It was therefore evident that there was need for greater public participation in the refurbishment of RAMA Cultural Centre. Based on these challenges, the researcher conducted a co-design workshop with an aim of building on tacit knowledge of the local community and riding on their vision to build a sustainable centre in terms of activities, visitor numbers and economic benefits. The main objective of the co-design workshop was to improve on the exhibition and display at RAMA Cultural Centre, which the participants agreed on as the backbone of their enterprise. The participatory design research exercise involved a group consisting of six older persons, a designer (undertaking the role of the researcher) and a research assistant. These people were engaged in sharing their views about material culture, how to promote it in the community and best ways of exhibiting and displaying the material culture so as to engage visitors and enable them learn more.

Co-design tools and techniques

Participation in co-design is not a one approach, but a myriad of design activities that together provide the basis for the envisioning of the new. Designers and non-designers engage in activities focusing on telling, making and enacting as ways of enhancing participation. Figure 2: A participation in design by stakeholders involves tools and techniques that combine telling, making and enacting. The tell-make-enact diagram is circular with double-headed arrows to illustrate how the actions are connected and to indicate that participation goes both ways in the circle.
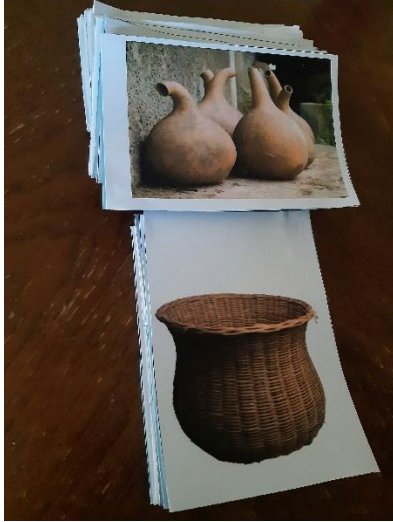
Source: Brandt, Binder, & Sanders, (2013)

Stappers and Sanders, (2008) suggest that in order to participate in the design process, the *users* must be given appropriate tools to express themselves. They suggest the development of co-designing tools and techniques such as three-dimensional toolkits that allow common people to communicate their own ideas.

The main objective of this project was to improve on the exhibition and display at RAMA Cultural Centre. One of the agreed on approaches by the participants on achieving this was to first align the exhibition and display along certain themes. The researcher used probes to enable participants come up with themes for the exhibition and display. Probes refer to design-led approaches that invite participants to express their experiences, feelings and attitudes in forms and formats that provide inspiration for designers (Gaver, Dunne, & Pacenti , 1999). Probing is a form of exploratory and design oriented self documentation method. Probing kits come in endless variations such as post cards, diary books, maps, instant cameras and so on. In this project, the researcher provided the participants with cards *(Figure 3)* that had images of all the cultural materials in the museum[2].

Figure 3: Pictures of cultural materials to be used in Card sorting

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[2] *During the planning for the workshop, the researcher took individual pictures of each item in the centre and printed them on card size papers. This were then used for card sorting*

Source: Author (2019)

Once the themes had been identified, the second step was to come up with a prototype of the physical exhibition and display which would align to the identified themes. The researcher came up with three-dimensional toolkits as shown in *Figure 4*, *Figure 5* and *Figure 6* below:
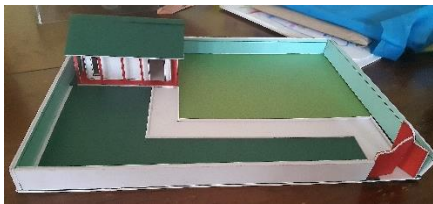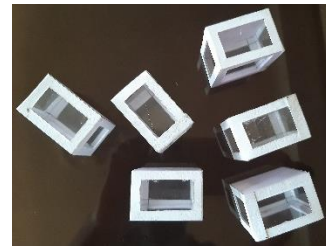

Figure 4

Figure 5

Figure 6

The use of 3D models was informed by the research of Sanoff (2000; 2010) who provided participants with small scale paper based representations of physical components (trees, buildings, people) to allow them to explore physical design options for interior and exterior environments. Similarly, also informed by the research of Sanders, (2003) who has been exploring with the use of 3D prototypes for hospital planning and architecture. Basing this project on the works of the mentioned researchers, participants at RAMA cultural centre were provided with small scale paper models of display units and a model of the interior of the centre and were asked to explore different options of displaying the cultural objects. As they
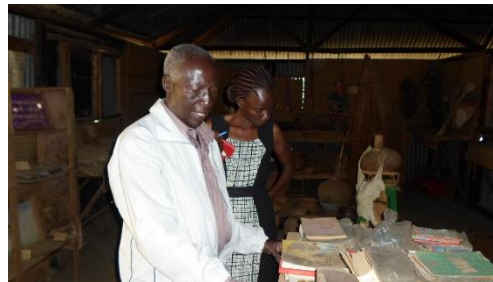
were working on the exhibition and display of the interior space, they also explored the flow of movement within the centre.

FINDINGS

Current State of RAMA Cultural Centre

The physical structure at RAMA Cultural Centre is in a deplorable state. The exterior is made from iron sheets, which are not well reinforced (Figure 7). This has led to instances where the centre has lost some items to thieves who can get easy access to the museum. The interior (Figure 8) is dark with no lighting and poor ventilation. This results to a humid environment, which can cause molds on objects and is also a good breeding ground for such rodents such as rats, which are a danger to the artifacts.

Figure 7 (Left) and Figure 8 (Right): RAMA cultural centre museum, exterior and Interior spaces.

Source: Author (2019)

The cultural items on display needs to be protected from environmental effects such as dust, insects, rodents and accidental breakages through proper displays and preservation. *Figure 9* below shows objects displayed on the ground without a barrier around to prevent them from accidental breakages. *Figure 10* below shows items stacked on to each other probably due to lack of space. This display makes it difficult for visitors to get a full experience of the items. *Figure 11* below shows breakages on items due to improper display. *Figure 12* below shows books and other texts on display but they are not protected from dust and are susceptible to destruction by insects or rodents.

Figure 9: Items on the floor   **Figure 10: Items stack together**

Figure 11: Breakages   Figure 12:Dusty books

It is on this backdrop that this project was about redesigning the exhibition and display at RAMA Cultural Centre.

Exhibition and Display Themes

The older persons came up with a display proposal meant to tell the story of the Luo people. The story revolved around food and according to the group, everything about the Luos can be discussed around food. The story tells how food is gathered, prepared, served, stored and how food by-products are used. *Table 1* below shows items under each category of the stoty:

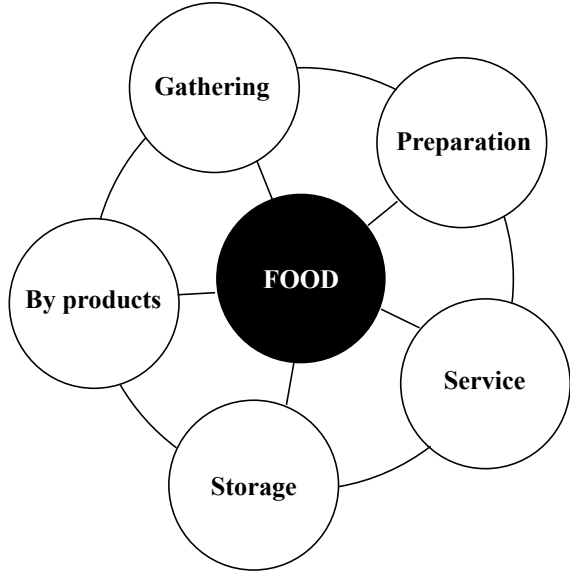Table 1: RAMA cultural centre display narrative

CATEGORY	ITEMS
Gathering	Bows and arrows, Fishing nets, Ropes, knives etc
Preparation	Pots, Grinding stone, Spoons etc
Service	Calabashes, bowls, stools, mats etc

Storage	Baskets, Pots, Food holders, calabashes etc
By-products	Musical instruments such as drums, nyatiti etc
Others	Books

Source: Author (2019)

The visual representation of the proposed exhibition and display of RAMA cultural centre can be summarized in *Figure 13* below:
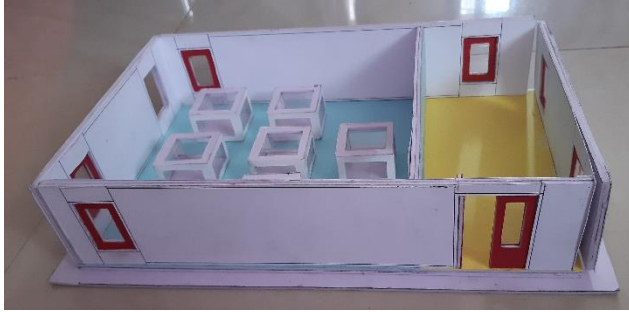
Figure 13: Display narrative at RAMA cultural centre

Source: Author (2019)

Using the provided 3D models, the participants agreed on exhibition and display layout is shown in *Figure 14* below.

Figure 14: Display design for RAMA Cultural Centre

Source: Author (2019)

DISCUSSION

Navigating Co-design as a Novice Researcher

From literature, it is noted that there are a myriad of co-design tools and techniques but no guidelines on the choice of tool or technique for a particular project. This makes it very difficult for young researchers to engage in co-design as an approach for creating. To avoid a 'hit and miss' as related with the tools and techniques, some learnings from this project include but not limited to:

a. *Having an indepth understanding of the participants Demographics*

Demographic is the statistical characteristic of a population such as age, gender, income, education, race and so on. Having a prior knowledge of this can help the researcher determine the appropriate tools and techniques. For instance in this project, the participants were male, elderly, had a form of basic education and would be considered to be of low-income bracket. As a result of this, the choice of tools and techniques to use needed to be visual, quite easy to navigate and devoid of technical jargon.

b. *Mindset*

Mindset, especially when co-designing has been a challenge in design circles for long. Co-design is basically a collaborative process that engages with users in equal partnership with an aim of achieving meaningful, realistic and workable solutions to real social issues. The designer needs to acknowledge the community as the 'expert' while at the same time, the community have to be confident in their ability to create. A

designer getting into this space need to be open and facilitate co-design sessions without undermining the community. This may need a level of education in co-design as a practice. The designer needs to raise awareness in the community and enable them to engage in a way that gives them the confidence in their ability to create.

A community that has a history of political injustices, retrogressive cultural practices and sometimes low literacy levels, may rarely view themselves as capable. In this project, the researcher came to the realization that members of RAMA Cultural Centre have a long history of reliance on aid from the government and aid agencies. Most of them perceived the planned workshops as sessions where the researcher will present her ideas, implement them and engage them in different ways. It took a while for them to adjust to the idea of co-design. The researcher on the other hand had to develop tools and techniques that put them on the creators pedestal.

c. Facilitation

A facilitator is a person who monitors the design process and develops strategies to create new encounters between the community and the design problem. One important characteristic of a facilitator is to play a neutral role. Community participation may involve large numbers of people, each with diverse opinions. The dynamics of large group discussions may often lead to awkward disagreements and dead end discussions. The facilitator then becomes the person to guide the group through such challenges by offering a supportive voice to every participant during the co-design sessions. Facilitation therefore becomes management of team dynamics

Successful facilitation in this project begun by choosing the right tools and techniques, based on the type of participants and the problem to be solved. The next was in guiding the participants along the phases of co-designing. Each activity was clearly defined and expected end result agreed upon. The community was also provided with real-time representation of what was going on during the sessions.

Experiences of engaging with older persons in Participatory design

Empirical research proves that older persons are capable of engaging effectively in participatory design activities (Lindsay et al., 2012; Massimi & Baecker, 2006). However, every designer needs to be cognizant of the fact that age brings with it challenges that may limit the choice for the methods and tools for participatory activities and necessitates that the process is

well thought out. Lindsay et al., (2012) observed that while engaging in participatory design with people living with dementia in the design of safe walking aids, there was a lot of struggle amongst the participants in envisioning the new technologies. A similar observation was made by Massimi & Baecker (2006) when engaging older persons in the development of mobile phones.

Several observations were made in this project as regards working with older persons in a participatory design process. One of this was that the older persons were delighted by the opportunity to discuss their experiences, with a hope that those experiences would be a springboard for great design ideas. The choice of co-design tools and methods should be those that encourage discussion, whether visually or verbally. The language used in design sessions and the structure of the sessions need to acknowledge the limitations brought about by aging. One of these limitations is the inability of older persons to stay focussed on a single issue for a considerable duration of time, making it necessary to have several short sessions with breaks in between. Other limitations included physical and sensory disabilities, difficulty in envisioning future scenarios which is important in participatory design.

The challenges of engaging with older persons in participatory design

Any engagement with older persons is not without its challenges and findings from other studies in this area correlate with the findings of this study. Identified are four key factors to consider in participatory design with older persons.

a) Make use of simple and intuitive co-design tools and methods

Technology is considered good and can make work easier and faster. However, for older persons, adapting to technology is sometimes a challenge. In co-designing with older persons, there is a need to use simple and basic technology, which is intuitive to use. In this project, one co-design approach would be to ask participants to build a photo diary of what they thought a good exhibition and display of a cultural museum would look like. One challenge of this approach is that most of the older persons have mobility challenges and when there was need for travel, it was often not for leisure. This approach would also be limited incase the older persons do not have access to cameras and even if they could get access, they may be limited in the knowledge of how

to use it. Alternative to this co-design approach was the use of sketches. The participants would be allowed to describe in detail examples of good exhibition and displays they have seen. The designer then would translate these into an illustration and all would provide feedback as the sketch is developed. In this project, the older persons were given 3D models to use to reconstruct the exhibition and display at RAMA Cultural Centre.

b) **Build a rapport and relationship with the older persons**

It is often so easy for the designer to focus on getting information from co-design sessions instead of seeking to build a relationship with the older persons. Doing this helps build trust that leads to better participation and a sense of ownership of the project by the older persons. The co-design tools should be those that engage in a way as to create a deeper connection with the older persons. Create an atmosphere where the older persons can freely express themselves either visually or verbally.

c) **Anticipate potential physical and cognitive limitations of older persons**

Based on research, all five senses (taste, touch, sight, hearing and smell) decline with age and as such, you find that most older persons may suffer from low vision, hearing loss and mobility impairments. To mitigate the effects of these limitations on the outcome of the participatory design, start by choosing an appropriate venue. Avoid staircases because there will be those on wheelchairs and walking aids. When communicating, use bigger print sizes and when talking, try to be audible. When addressing older persons, stand or sit in a location where everyone can see your face clearly since some older persons with hearing loss rely on lip reading.

d) **Be flexible and have shorter sessions**

When engaging in participatory design with older persons, be flexible. Allow for time outs when is needed. Let the choice of co-design tools and methods be varied and choice of use optional. Older persons often do have a short concentration span and that must be put into consideration during the planning phase.

CONCLUSION

This project has identified co-design as a versatile approach that offers all stakeholders a means of engagement in collective action, creativity, understanding and mutual learning. As a participatory process that stimulates creativity in developing effective design interventions, it provides a multi-perspective view of problems and solutions. Due to the physical and cognitive limitations of older persons, a lot of consideration needs to be put in place when developing co-design tools for use by them. One key observation is that the co-design tools need to be more visual other than textual. It is also possible to make use of tell activities, make activities and enact activities while co-designing. Preferable would be use of story telling, probes, scenarios and various generative toolkits.

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