



# Education & Learning in Ghana's New Museums

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Museums represent the cornerstone of cultural preservation and promotion, and their design requires intentionality to make them as accessible and engaging as possible.

As we rethink Ghana's museums, we will investigate new ways of presenting narratives, as well as engaging communities from all over Ghana so that they might see themselves properly represented in their museums. In the education section of this report, we will explore the use of principles in education design to better organise Ghana's future museums for deeper engagement with people of all ages and backgrounds.

## Need Statement

Ghana's museums have existed since 1957, with the National Museum being the first to open its doors on

5 March. Since its inception, seven other museums have opened all around Ghana, with their design largely following the tradition of museums as static environments in which visitors engage with artefacts by moving through the space silently and observing pieces on display.

In the 21<sup>st</sup> century, however, it is not enough for museums to simply be containers for art collections and historical artefacts, especially in various African contexts. The sheer volume of history that has been removed or cut off through colonisation means that museum leaders need to be very intentional about engaging audiences to ensure that the experiences they have within the museums stick with them after they leave. There is power in memory and, in a world of increasing hegemony, the act of remembering and imagining is radical. Museums have the potential to be sites for meaningful social engagement and advancement, and the world of education design is purpose-built for improved

interactions between individuals and knowledge systems. The evolution of technology and the energy of younger generations can be harnessed to rebuild museum spaces that preserve our cultural heritage to ensure that Ghana's history is inextricably connected with its future.

In the traditional setup, the education departments of museums deal with engaging children and teachers while curators deal with the "adults" visiting the space. In this reimagining, education moves to the centre of the experience design by assuming that all people visiting the space, not just children, have the potential to engage in fun and unique ways to learn from a history that was previously inaccessible to them. This perspective shift challenges museum designers to be intentional about how they set up a space so that it feels like a cohesive and fun experience that a visitor leaves after having reconnected with lost parts of their history and gained a renewed sense of identity.

## Objective

Ghana's museums will each have a cohesive story and flow internally that builds an interactive experience for all visitors. "Interactive" in this case means that visitors would not passively look at exhibits, but that their other senses would be engaged in their experience; there should be an interplay between the visitor and the exhibit. Visitors should leave Ghana's museums with a sense of wonder at the richness of Ghana's history and endless possibilities for the future. Citizens should gain new perspectives on familiar topics, while international tourists should gain a strong overview of Ghana's place in global history and journey to the present.

This will be achieved by utilising best practices in experience design and a combination of high- and low-technology exhibits that build on each other to form clear theses. This will allow us to move away from the static museum environments that exist today into a more exciting and interactive vision.

From an experiential standpoint, the museum should strive to embody the principles below:

**Interactive and Immersive:** The museum should push toward experiences that engage multiple senses and use diverse media to shine a light on Ghana's proud heritage.

**Accessible to all:** The museum should be able to connect with people from multiple backgrounds, and so should keep language and physical ability access at the core of its design.

**Connect the past, present and future:** In moving towards more experiential exhibitions, links should be drawn between the historical, contemporary and

speculative in order to highlight new perspectives.

## Educational Containers

In order to realise the vision of interactive and accessible museums, there are several potential kinds of exhibits that encourage varied modes of apprehension and learning behaviours.

The definition of a museum has evolved, in line with developments in society and in accordance with the realities of the international museum community. The role of a museum is also as an institution that acquires, conserves, researches, communicates and exhibits for the purpose of study, education and enjoyment, displaying material and evidence of people and their environment. These roles are not restricted to just providing information. Today, a visitor may develop such behaviours as seeing, grasping, analysing, questioning and extracting clues related to life from what they see (1).

There are four main elements to consider when thinking about modes of visitor apprehension in museums, as articulated by the Faculty of Architecture, Planning & Surveying, Universiti Teknologi, Malaysia (2), who are world leaders in space and experience design:

**Contemplation:** This deals with aesthetic beauty and individual perception of specific works. It is most commonly used in art museums.

**Comprehension:** This deals with perceptions of artefacts in context, and is most commonly used in historical, archeological and ethnographic museums, and tends to be the model that traditional museums lean most heavily into.

**Discovery:** Visitors explore specimens grouped by category, and the institution uses exploration as a means of visible storage. This is common in Natural Science Museums.

**Interaction:** This deals with kinaesthetic response to stimuli, with live demonstrations and multimedia exhibitions at the centre of activity. It is most commonly employed by Science Museums.

In deciding what Ghana's future museums will be, it is critical to recognise that design must be intentional in incorporating elements from each of these four modes in order to reimagine institutional spaces. Engaging visitors' senses of contemplation, comprehension, discovery and interaction at different points in their museum experience allows us to craft narratives that leave lasting impressions. A key aspect of incorporating education design throughout museum spaces is in the ability to manage visitors' experiences; museums should be dynamic spaces that transform as a visitor's journey progresses. In conjunction with these modes of apprehension, different learning behaviours should also be taken into account, which are categorised along the following lines as articulated by the Universiti Teknologi faculty:

**Cognitive:** The assimilation of facts and figures learned through repetition and concrete experiences.

**Affective:** The challenging of attitudes, beliefs and values to increase empathy with other viewpoints.

**Social:** The development of cooperation and communication skills.

**Psychomotor Skills:** Manual dexterity, crafting and manipulation.

**Personal:** Increased sense of identity and self-confidence, motivating further exploration.

By combining modes of apprehension and learning behaviours, we can recategorise our museum exhibits to ensure they tap into multiple possibilities and become the dynamic forces of wonder that we desire.

Here are a few examples of exhibits and experiences categorised by the apprehension modes and learning behaviours they engender:

| Type of exhibit           | Description  | Apprehension Modes                            | Learning behaviours               |
|---------------------------|--|---|-----------------------------------|
| Terrarium Space           | Exploration of plants native to Ghana with miniature models and real shrubs and flowers potted in the space. Theme of conservation; and narratives concerning traditional beliefs about, and uses for, various plants. Encourages change in thoughts on traditional practices related to plants in Ghana.  | Comprehension<br>Discovery<br>Interaction     | Affective<br>Personal             |
| Live craftsmanship spaces | Rooms where weavers at Kente looms, bead makers, basket weavers, etc. conduct live demonstrations of their crafts, along with orators who tell engaging stories of their histories. These can be curated as performances, with collaborations with local theatre groups. There could be experimentation sections where visitors can try their hands at these crafts for short periods. | Comprehension<br>Contemplation<br>Interaction | Social<br>Psychomotor<br>Personal |
| Simulated reconstructions | Using 3D mapping, historical sites all over Ghana can be recreated in museum spaces for visitors to get a sense of the rest of the country.  | Comprehension<br>Discovery                    | Affective<br>Cognitive            |
| Preserved artefacts       | Strategically spread throughout the space, these artefacts underscore other exhibits, giving a sense of history to the space.  | Comprehension<br>Contemplation                | Cognitive<br>Personal             |
| Futures black box         | Combinations of live and recorded performances shown here give a deeper sense of immersion to visitors about imagined futures. Collaborations with Afrofuturist creators introduce Ghanaians to visions of the future dreamt up by other Ghanaians.  | Contemplation<br>Interaction                  | Affective<br>Social               |

## Design Methods

In this section, we will dig into exactly how to transform our museum spaces from an experience design standpoint. This will serve as a map for how to organise exhibits from a user-centred, rather than curator-centred, perspective. Placing the users (in this case, visitors) at the core of our design process allows us to take into account nuances from their point of view, which will enable us to create richer and more inclusive experiences. Ghanaians

come from all walks of life and from different educational backgrounds, and they each have a unique perspective and varying levels of experience with interacting with art and artefacts; we need to design for this diversity. Essentially, we wish to move from treating visitors as spectators to treating them as participants.

The experience design process is summarised below. Once an objective has been set for an exhibit,

we would use this process to build exhibits in a more user-centric way:

## Inspiration

**Understanding user personas:** Who are we designing for? What are their needs and aspirations?

**Analogous inspiration:** Who is currently doing this well? What can we learn and adapt from them?

## Ideation

**Narrative crafting:** What stories do we want to tell? Why do these stories matter?

**Communication design:** How should the space look so as to effectively tell these stories?

**Space design:** How should the space function? How should people flow through it?

## Implementation

**Team profiles:** Who do we need to execute this?

**Technology:** How do we leverage the latest tools to augment experiences, and to connect with the world outside the museum?

**Community engagement:** How do we engage Ghanaians from all over the country to shape the narratives and experiences of the museum?

As we dive into inspiration, ideation and implementation, we will illustrate how each of these concepts builds into a new vision for Ghana's museums, with examples to further illuminate how different directions could play out.

## Inspiration

### Understanding user personas

The first step in strong experience design is to answer the question of "who are we designing for?" Creating personas is a useful

tool in focusing design, and this involves answering questions about potential wants, needs, pain points and current ways of experiencing museums. The User Experience Researcher would run this process. Starting from this point allows us to be more intentional in our design. Here are a few brief examples below:

### Adwoa

SHS STUDENT / FROM GHANA

#### Her aspirations

A place to spend time with friends that is exciting and ever-evolving

#### Her needs

A way to see herself in a new light and be proud of her identity

#### Her pain points

Struggles with self-confidence. Lack of access to relevant historical information; most information is buried in dense texts

#### Her current museum experience

Wanders around and takes pictures of objects that are interesting and shares them on social media. Interest quickly dwindles

### Mawuli

PARENT / FROM GHANA

#### His aspirations

A place to spend time with friends that is exciting and ever-evolving

#### His needs

A way to see herself in a new light and be proud of her identity

#### His pain points

Struggles with self-confidence. Lack of access to relevant historical information; most information is buried in dense texts

#### His current museum experience

Wanders around and takes pictures of objects that are interesting and shares them on social media. Interest quickly dwindles

### Jelani

ENTREPRENEUR / FROM THE USA

#### His aspirations

To explore landmarks and discover places to recommend to other friends

#### His needs

To find potential diasporic connection points to Ghana

#### His pain points

His thought processes are grounded in Western ideologies that he is looking to shift by connecting with various African histories

#### His current museum experience

Goes to specific exhibits that he came to see, spending long periods of time in each

If we assume that Adwoa, Mawuli and Jelani are our prime target audiences, for example, our design can be positioned to speak most directly to them. In the persona building exercise, we will create numerous examples and use our objectives as a museum space—and bring in data on potential market sizes—to drive our design. This exercise also forces us to be clear about who we primarily aim to serve.

### Analogous Inspiration

While we aim to create experiences that are as original as possible, it is important to understand if there are existing entities around the world that have effectively executed on ideas that we are interested in, which we can look towards for inspiration. From the ways that technology has been implemented to unique methods for telling stories, there are opportunities for inspiration all across Africa and around the world. The experience design team, fleshed out in the implementation section, would be responsible for putting together a picture of analogous inspiration.

For example, LamasaTech's Survey system (3) could provide inspiration for technology that we may wish to use in Ghana's museums. The intuitive nature of the platform makes it easy for visitors to share feedback and allows designers to more effectively iterate on exhibitions. See more on this in the technology section below.

Another inspiration could be the experiential nature of the Exploratorium (4), which has a clear design brief mandating designers to make every exhibit as playful as possible; a principle that shines throughout the museum. Meanwhile ImagiNation Afrika (5) and its location in Dakar, Senegal

provide inspiration for highly interactive, play-based experiences. Our ability to articulate strong principles and live by them will be decisive in the success of this endeavour. Finally, Play Africa's (6) project in Johannesburg, South Africa embodies the principles of fun as a means of sharing knowledge.

## Ideation

### Crafting narratives

The next question to ask once we have created personas is "what stories do we want to tell?". Strong narratives are at the heart of good experience design and help to shift us away from a series of objects arranged chronologically.

What links do we want to highlight between the past, present and future? What are the little-known stories that benefit from more exposure? How can we reach our visitors intellectually and emotionally? The museum may have an overarching narrative that each exhibit feeds into, or a series of narratives in each exhibit, but the cohesion of these narratives is critical to the museum's success.

These narratives form the basis for roleplaying and storytelling opportunities in which we engage the theatre community to support live exhibits (more on this in the community engagement section below). We can also craft adventure arcs to weave throughout the museum, which will be further explored in the gamification section below.

For example, we may have a theme of the influence and evolution of water bodies throughout Ghana's history. The narrative may involve traditional beliefs about various water bodies as well as how Ghanaians have interacted

with water through time. Visitors could be encouraged to draw their own conclusions about Ghanaians' relationship with water after exploring the varied exhibits around that theme.

### Communication Design

After creating our first versions of personas and narratives, the look and feel of the museum will then come under review. Design theory will be employed to select the best colours, fonts and other messaging in the museum to most effectively support the selected narratives for our target audiences. The visual design of the space needs to mirror the narrative structure in order to make messages more impactful.

For example, an exploration of water bodies in Ghana might include a river-themed graphic flowing on the floor to lead people through various exhibits in a way that preserves narrative integrity. Graphic designers will be encouraged to incorporate various elements from the exhibition into the signage to maintain immersion in the experience.

### Space Design

In principle, the museum must be very dynamic, meaning that the various spaces should be able to transform to accommodate different exhibits. Features such as wall hangings, movable walls and multipurpose halls with foldable furniture will maximise our ability to change the space to suit our needs. Whether we are displaying artefacts from around Ghana or hosting live artistic performances, our space should be able to switch between modes to allow for multiple kinds of experiences. This principle has been used to great effect in classrooms around the world to allow educators to host varied experiences in the same space.

## Implementation

### Team setup

In order to reimagine museum spaces effectively, we need to form an experience design team that is focused exclusively on visitor experience, and how the space is organised to influence this. This team would need to collaborate closely with museum curators to ensure that exhibits and experiences fit into the overall flow of the museum and have engaging enough elements to leave lasting impressions. The main roles required in the team are:

#### *Senior Experience Designer*

This person is responsible for creating user-focused designs informed by market analysis and interaction design best practices. In collaboration with curators and artists, the designer would create experiences to put into effect the narratives we want to share.

#### *User Experience Researcher*

This person is responsible for sourcing insights on potential visitors to inform design. They would need to run extensive primary research through mixed methods, as well as secondary research to understand the different visitors to the museum as much as possible.

#### *Communication Designer*

This person is responsible for all graphic and written communication in the space. They are highly skilled in visual design and understand colour theory and typography, among other areas, which they use to make the space as effective and aesthetically pleasing as possible.

### Technology

Technology's application in museum spaces has seen transformations in visitor management, exhibit design and

gamification of entire visits all over the world. Ghana's museums could be continent leaders for innovative use of technology that augments museum experiences.

### Gamification

Gamification is the application of principles from game design to other experiences in order to improve engagement. It can be used to great effect in a museum setting; including elements such as treasure hunts can bring families or other groups together by creating new objectives in the space.

The museum experience will be integrated into a mobile application that visitors can access during their tour, in order to engage in new ways with the exhibits. This application can be synced with hardware in the museum such as iBeacons, which allow us to create custom experiences. For example, a virtual treasure hunt associated with an exhibit can alert visitors when they have reached a place of interest in the particular quest they are on.

This technological element of the museum also allows us to connect with the Ghanaian developer community, as it gives them the opportunity to create solutions for design challenges. For examples of games that have been integrated into museum design, Build a pyramid (7), Full Steam Ahead (8), and Biomedical game 'GEN' (9) provide strong inspiration.

### Visitor Management

Technology will also be a critical part of our ability to track and manage visitors. Electronic kiosks will be placed at strategic points in the space for informational and feedback collection purposes. These will be at the point of experience where visitors are most likely to give honest and useful feedback.

Products like LamasaTech's (10) interactive directory kiosks will be crucial.

In visitor management, technology's greatest value-add is the access to data, which we can use to fine-tune the museum experience over time. Ticket sales are the main data point that many institutions have tracked so far, but these figures do not tell a complete enough story of how visitors experience the space and so lack information that might help designers continually improve. In short, what gets measured gets managed. Through a combination of traditional methods like surveys and polls, as well as online and social media traffic tracking, data on ticket and website sales, as well as Internet of Things (IoT) tracking internally, we can build a strong picture of who is visiting and what they are most interested in during their visits.

The iBeacons mentioned in the gamification section, for example, can provide precise movement analytics which help identify "dead zones" in the museum where people are not engaging at all, as well as the areas people are finding to be of greatest interest.

Examples of metrics we would track include:

#### *Stopping behaviours:*

Total time spent in an area; proportion of visitors who stop at a particular element.

#### *Tech interaction:*

Number of visitors who access certain videos; time spent on particular videos.

#### *Observable demographics:*

Estimated age of visitors; organisational or educational affiliation of visitors.

Mastery of this data also allows us to write more persuasive grant

proposals in the future as we build a stronger idea of exactly how to use funds to improve experiences. Staffing levels throughout the museum, and our ability to make future predictions about exhibit design, are also significant secondary effects of identifying and tracking the right data.

### Exhibits and experiences

Virtual and augmented reality can play a major role in exhibit spaces. With 3D mapping, we can create virtual reconstructions of traditional landmarks all over Ghana in the museum which would allow visitors to experience much more than is physically present. Initiatives like the Zamani Project (11) provide inspiration for what is possible with concerted effort. By digitising historical sites, we can bring landmarks from all over Ghana to visitors in specific locations.

The museum will also be a multimedia space with projected images and speakers designed and arranged to completely immerse visitors in the exhibitions on display. The technological elements of the museum will require extensive training for staff to use and maintain the tools, which further improves the quality of museum curators and technicians.

### Community Engagement

Well-designed museums open the door to engaging various Ghanaian communities in ways that have positive ripple effects throughout society. The revamped museums need to connect with Ghanaians from all over the country in order to shape the narratives and experiences of the museum. There are numerous communities in the country that are currently not engaged in museums, and there is an opportunity to interlink them in

service of deepening our collective relationship with our culture.

Here are some of the major collaborations that could support in the museum's growth:

#### *Theatre Community*

The museum's live exhibits will need actors, dancers, set designers and many more to help in creating immersive experiences for visitors. From large institutions such as the National Theatre (12) to rising stars including the Accra Theatre Workshop (13), the museum initiative provides the opportunity for many artists to collaborate in creating engaging and educational experiences.

#### *Software Developer Community*

In order to build the technology necessary for interactive exhibits, the Ghanaian software developer community could be instrumental in building the backend for applications, games and other products for the museum. Facebook Developer Circles Accra (14), forLoop Ghana (15), Google Developer Groups (16) and Women Techmakers Accra (17) are just a few of these communities that have been growing over the past few years and which could be extremely helpful in creating homegrown products.

#### *Educator Community*

Schools hosting trips and adventures for students, as well as curriculum designers transforming exhibits into curriculum guides for students, provide opportunities to codify exhibitions into new media.

#### *Visitor Community*

Finally, there is an opportunity to bring all visitors to the museum into communal

experiences through various events such as themed trivia competitions and spotlight discussions.

In conclusion, Ghana's museums are on the brink of radical transformation that will propel our nation to the forefront of cultural and historical preservation in the world. Should this reimagining be successful, I hope that Ghanaians build a new sense of pride in the richness of our culture—which will resonate with visitors from all over the world as well. Our willingness to embrace educational best practices will allow us to connect more deeply with our past in order to better visualise our future. We must recognise the diversity of perspectives that exist within our great nation to create experiences that reflect a beauty that is greater than the sum of these parts.

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