

Designing for Cultural Awareness: A Gamified Web Solution to Showcase the Silver Jewellery of Jharkhand

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Abstract—This research work delves into the rich tradition of silver Jewellery in Jharkhand, especially its deep-rooted significance among tribal communities like the Santhal, Ho, and Munda. These ornaments are more than adornments—they carry stories, rituals, and a sense of identity passed down through generations. Through a blend of ethnographic observation, visual research, and community interaction, the study captures the fading nuances of this craft. As interest wanes, particularly among the younger generation, the research explores how gamification—using elements like quizzes, storytelling, and interactive games—can breathe new life into these traditions. By designing a playful, web-based experience, it aims to spark curiosity and pride in cultural heritage. At its heart, this study is both a tribute and a call to action: to preserve the artistry of silver Jewellery not just in museums or archives, but in the everyday awareness of those who carry its legacy forward.

Index Terms—Silver Jewellery, Jharkhand Craft, Gamification, Awareness.

I. INTRODUCTION

The traditional silver Jewellery of Jharkhand, rooted in tribal customs and artisanal heritage, is rapidly losing its cultural visibility. Young generations are unaware of the history, symbolism, and craftsmanship behind these ornaments. This research addresses the problem of low awareness and proposes a gamified learning experience as a tool to engage, educate, and preserve interest in this unique craft. This research holds significance in the context of preserving and promoting the intangible cultural heritage of Jharkhand. It proposes gamification as a tool not only to spread awareness but also to make the learning process interactive, engaging, and fun for diverse audiences. The study attempts to fill the gap between traditional crafts and modern communication

mediums by using game mechanics like storytelling, challenges, rewards, and interactive exploration. The findings of this research can provide valuable insights for designers, cultural organizations, educators, and government bodies to adopt creative strategies in heritage promotion. The main objective of this research is-

-To explore how gamification can be used as an effective tool to create awareness and engagement around the silver Jewellery of Jharkhand.

Therefore, this study aims to highlight the cultural importance of this traditional Jewellery while understanding the current level of awareness among people, especially the youth. It also focuses on analyzing the role of gamification in promoting heritage crafts and proposes a model that makes learning about Jharkhand's Jewellery interactive, engaging, and accessible to a wider audience.

II. LITERATURE REVIEW

According to previous studies, the existing research on the silver Jewellery of Jharkhand primarily focuses on its cultural, traditional, and aesthetic significance within tribal communities. Jharkhand is home to several tribal groups like Santhal, Munda, Oraon, Ho, and others, each of whom have their unique styles and patterns of Jewellery making. Most of the studies and literature available highlight that the silver ornaments worn by these tribes are not just decorative but hold deep-rooted meanings related to social identity, customs, and rituals. Jewellery pieces like Hansuli (neckpiece), Jhumka (earrings), Paijan (anklets), Bichhua (toe rings), Chudha (bangles), and Mundri (rings) are commonly seen in their tradition and are believed to signify prosperity, protection from evil, and status in society [1-8].

Researchers have also mentioned that nature plays a vital role in the design language of these ornaments. Motifs inspired by elements like flowers, leaves, birds, animals, and geometric shapes are widely used, symbolizing the close connection of the tribal communities with nature [9]. Existing documentation explains that the making of these ornaments involves traditional handmade techniques passed down through generations, using simple tools and skills. However, the available research is limited mostly to academic writings, museum archives, and government handicraft records. The studies are often descriptive and informative, but lack modern representation or efforts to connect with new-age audiences. In literature, the usage of gamification and interactive media is still in process. Additionally, several researchers have pointed out the decline in demand for traditional silver Jewellery due to changing lifestyle preferences, increasing influence of modern Jewellery designs, and migration of tribal youth towards urban culture. These factors have contributed to a gradual loss of interest and awareness regarding this heritage craft.

Gaps in Current Knowledge

While there are existing research and documentation available on the silver jewellery of Jharkhand, most of it is limited to cultural studies, academic records, or museum collections. These sources provide valuable information about the types of jewellery, their motifs, techniques, and their cultural significance within tribal communities. However, a noticeable gap exists in how this knowledge is being communicated, shared, and experienced by the modern audience, especially

among the younger generation. One of the key gaps identified is the lack of digital presence or interactive platforms that allow users to explore and learn about this jewellery in an engaging way. The younger generation, who are more connected to digital media and interactive content, are often unaware of these traditional crafts due to the absence of innovative representation methods. Additionally, there is minimal research or application of gamification in the field of traditional jewellery promotion, particularly in the context of Jharkhand's silver jewellery. While gamification has been successfully used in education, tourism, and branding across the world, its application in the Indian handicrafts or jewellery sector remains largely unexplored [1-8].

Another significant gap is the absence of storytelling and user engagement strategies that could connect people emotionally to the jewellery's history, cultural background, and symbolic meanings. Current knowledge resources mostly focus on the design and types of jewellery but fail to create an emotional or interactive connection with users. Moreover, artisans and local craftsmen, who are the real carriers of this art form, face challenges in preserving and promoting their skills in the competitive and modern jewellery market. There is a lack of research focusing on how new-age tools like gamification can support artisan communities, create market interest, and preserve cultural heritage in a sustainable way. This study, therefore, aims to address these gaps by exploring the use of gamification as an innovative medium to promote awareness, engagement, and education around the silver jewellery of Jharkhand.

Theoretical Framework

This research is grounded in the concept of gamification, which involves integrating game design elements into non-game contexts to boost user engagement, motivation, and learning outcomes. In recent years, gamification has been effectively applied across various domains, including education, marketing, healthcare, and notably, cultural heritage preservation. By transforming passive experiences into interactive and enjoyable activities, gamification fosters deeper connections and understanding among participants. In the realm of cultural heritage, gamification has emerged as a potent tool to enhance visitor engagement and knowledge acquisition. According to a systematic literature review conducted by Marques et al. (2023), there is a noticeable rise in the application of gamification within heritage practices, particularly through immersive virtual platforms. Their study highlighted that gamified experiences are not only designed to engage visitors but also play a vital role in improving their understanding of cultural and historical narratives.

Marques et al. (2023) emphasize that while gamification is widely used to promote engagement, it also serves as an innovative approach for preserving and sharing intangible aspects of cultural heritage in dynamic ways. To effectively apply gamification in promoting Jharkhand's silver jewellery, this research will incorporate key gamification elements identified in the literature:

- Storytelling: Crafting compelling narratives that convey the origins, myths, and cultural significance of Jharkhand's tribal silver jewellery.
- Challenges & Quests: Designing interactive tasks such as quizzes and missions that encourage

users to explore and identify various jewellery types, motifs, and traditional crafting techniques.

- Rewards & Achievements: Implementing a system of digital rewards, including badges and levels, to recognize user accomplishments and sustain motivation throughout the learning journey.
- Interactive Exploration: Developing virtual platforms that allow users to engage with jewellery pieces through digital try-ons or virtual museum tours, thereby enriching the educational experience.

By integrating these gamification strategies, the research aims to create an engaging and educational platform that not only raises awareness but also fosters a deeper appreciation for the traditional silver jewellery of Jharkhand. This approach seeks to bridge the gap between cultural heritage and contemporary digital engagement, ensuring the preservation and revitalization of this art form among diverse audiences.

III. METHODOLOGY

The research methodology adopted for this study centers around a primary data collection approach using Google Forms. Since the objective of the research is to understand people's awareness, preferences, and emotional connection to silver jewellery from Jharkhand along with their perception of gamification as a tool to enhance interest, a survey method was considered most appropriate. A structured questionnaire was created and distributed through Google Forms to a diverse group of respondents from different age groups, professional backgrounds, and cultural contexts, as shown in Table 1. The survey aimed to gather qualitative insights into the participants' familiarity with traditional silver jewellery, their appreciation of its cultural significance, and their opinions on how digital interventions like gamification could be integrated to preserve and promote traditional craftsmanship. The collected responses provided valuable primary data, highlighting current knowledge gaps, trends in public interest, and potential areas where gamification strategies could be effectively applied. This method was selected for its efficiency in reaching a wider audience quickly and for enabling easy analysis of qualitative feedback without the need for physical fieldwork.

Additionally, the use of Google Forms ensured that the survey remained easily accessible and user-friendly, encouraging greater participation. The digital format allowed respondents to complete the survey at their convenience, leading to more thoughtful and detailed answers. The method also helped in organizing and visualizing the data systematically through automated tools like charts and spreadsheets, supporting deeper analysis and interpretation for the study.

The analysis of the survey shown through the Google Form gives a clear idea about the participants, their knowledge of Jharkhand's silver jewellery, and their interest in learning through games. Most of the people who answered were young and male. While some had heard about Jharkhand's silver jewellery, many had never bought or owned any tribal or handcrafted pieces. When they think of silver jewellery, many imagine it as old-style, oxidised, or heavy, while others think it is costly.

Even with these views, most people said they like both traditional and modern jewellery designs. Everyone agreed that traditional jewellery-making skills are slowly fading away. Many showed interest in learning about this craft through fun and interactive games. A good number said they would like to try apps with stories, virtual try-ons, or quizzes. Getting discounts on jewellery was the most popular reward idea that would encourage them to join such games.

Table 1: Analysis of the survey

CATEGORIES	PERCENTAGE
Participant Details Analysis	
Gender	
Male	85.70%
Female	14.30%
Age	
16-23	100%
Awareness of Craft	
Have you heard of Jharkhand's silver jewellery craft before?	
Yes	57.10%
No	42.90%
What comes to your mind when you think of silver jewellery?	
old-fashioned, oxidised, heavy	42.80%
Expensive	28.60%
Have you ever bought or won tribal/handcrafted silver jewelry?	
Yes	85%
What would you prefer in jewellery design?	
Both (Traditional and Modern design)	71.40%
Do you believe traditional jewellery craftsmanship is disappearing?	
Yes	100%
Gaming Preferences for Craft Learning	
Would you be interested in learning about silver jewellery through interactive games or experiences?	
Yes	71.40%
If a game or app was created to explore silver jewellery of Jharkhand (stories making, virtual try-on, quiz) would you like to experience it?	
Definitely	42.90%
May be	42.90%
What kind of rewards would motivate you to participate in a gamified jewellery experience?	
Discounts on jewellery purchases.	57.1%

Rationale for Selecting Specific Methods

The selection of a qualitative research approach based on online secondary research was a conscious and practical decision considering the scope and limitations of this study. The primary aim of this research was to explore and understand the cultural significance, design patterns, symbolic meanings, and traditional practices associated with silver jewellery in Jharkhand. Since the research was more focused on cultural representation and storytelling rather than statistical analysis or numerical data, the qualitative method proved to be the most suitable. Additionally, due to the unavailability of direct access to the field or physical interaction with artisans and local communities, online research became the primary source of data collection. Through this method, various authentic sources such as government reports, published research articles, case studies, and online documentation were explored to gather reliable information. This approach allowed a broader perspective as it included the studies and experiences of different experts who have already researched or documented the jewellery culture of Jharkhand. It allowed the researcher to focus on exploring cultural values, heritage, and design elements, which are essential for developing a gamified approach to spreading awareness about the rich tradition of silver jewellery in Jharkhand. Thus, this method fully aligns well with the research objectives.

IV. DATA COLLECTION

For this research study on Gamification in Silver Jewellery of Jharkhand, a combination of online research platforms and digital survey tools was used for data collection. To gather secondary data and information for the literature review, platforms like Google Scholar and ResearchGate were extensively used. These platforms provided access to various research papers, journals, and articles related to silver jewellery, gamification techniques, and cultural heritage preservation. For primary data collection, Google Forms was used to create and distribute a structured questionnaire among participants. The questionnaire focused on understanding public awareness, perception, and interest towards traditional silver jewellery and the possibility of promoting it through gamification. The online survey method allowed easy participation and responses from a wide audience within a short period of time. Additionally, general web searches and articles from Google were also referred to for gathering visual references, motifs, and understanding the tribal jewellery culture of Jharkhand.

V. PROPOSED SOLUTION

As an outcome of this research, a gamification-based idea has been proposed to increase awareness and engagement towards the traditional silver jewellery of Jharkhand. The idea focuses on creating an interactive website where users can not only explore and learn about the jewellery but also play games and shop Fig.3 for authentic silver jewellery pieces. The core idea of the game revolves around two major interactive features — *Treasure Hunt* and *Quiz Challenges*. In the Treasure Hunt game, when users click on the “Treasure Hunt” Fig.1 button, an interactive map of Jharkhand

appears on the screen. This map highlights different regions known for their unique silver jewellery. Users can click on these regions to explore and complete small tasks like quizzes, identifying motifs, or solving clues related to jewellery traditions of that area. On completing each task, users collect virtual coins, jewellery cards, or badges. Once all regions are explored, users receive special rewards like discount coupons or gift cards, which can be used to buy jewellery from the site. This treasure hunt game encourages learning in a fun way while promoting awareness about Jharkhand's silver Jewellery. Thus, users receive special rewards like discount coupons or gift cards, which can be used to buy jewellery from the site.

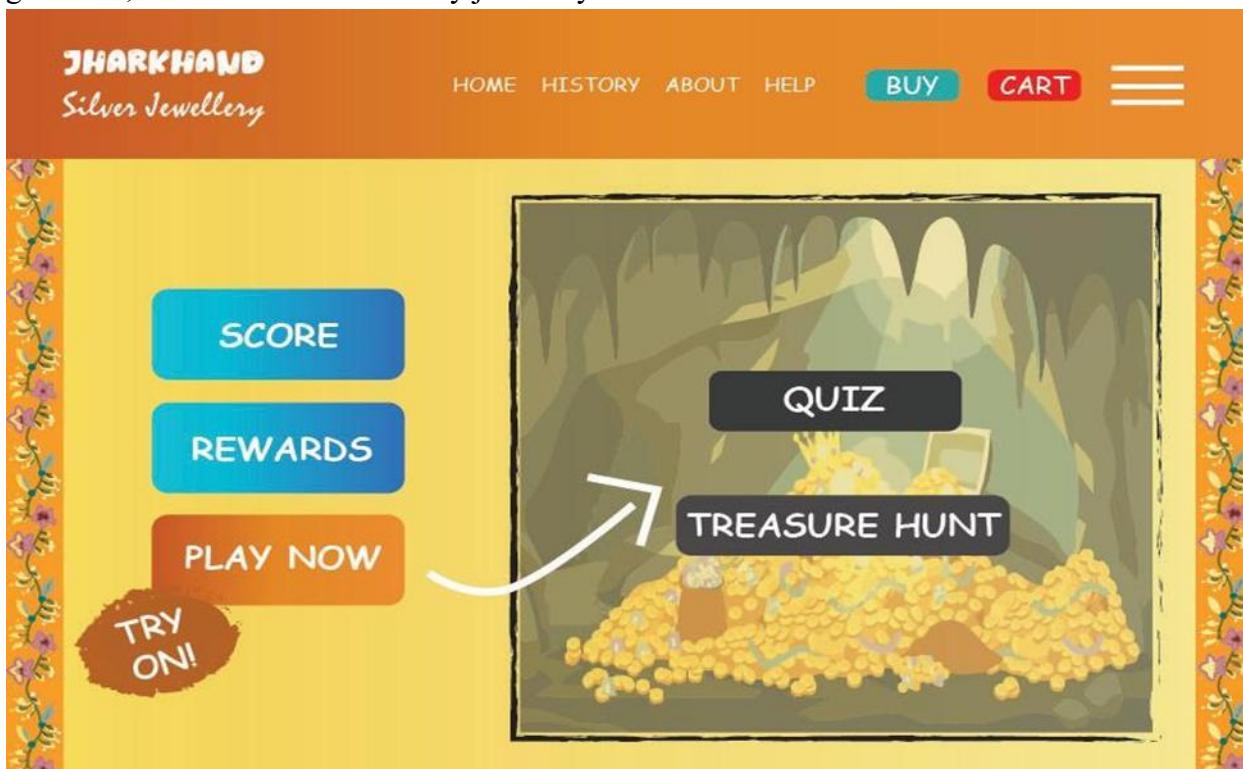


Fig.1 Design approach with framework

For example:

“Find the jewellery piece used by tribal brides in Khunti.”

“Guess the meaning of this motif used in anklets.”

“Collect 3 jewellery facts from Saraikela to unlock the next level.”

Another key element of the game is the *Quiz Section* Fig.2, where users will answer interesting and informative questions based on their learning during the treasure hunt or by exploring the site. The quiz will include multiple-choice questions, image identification rounds, fun facts, and trivia related to the jewellery culture of Jharkhand. Correct answers and participation will reward users with virtual coins, badges, and points.

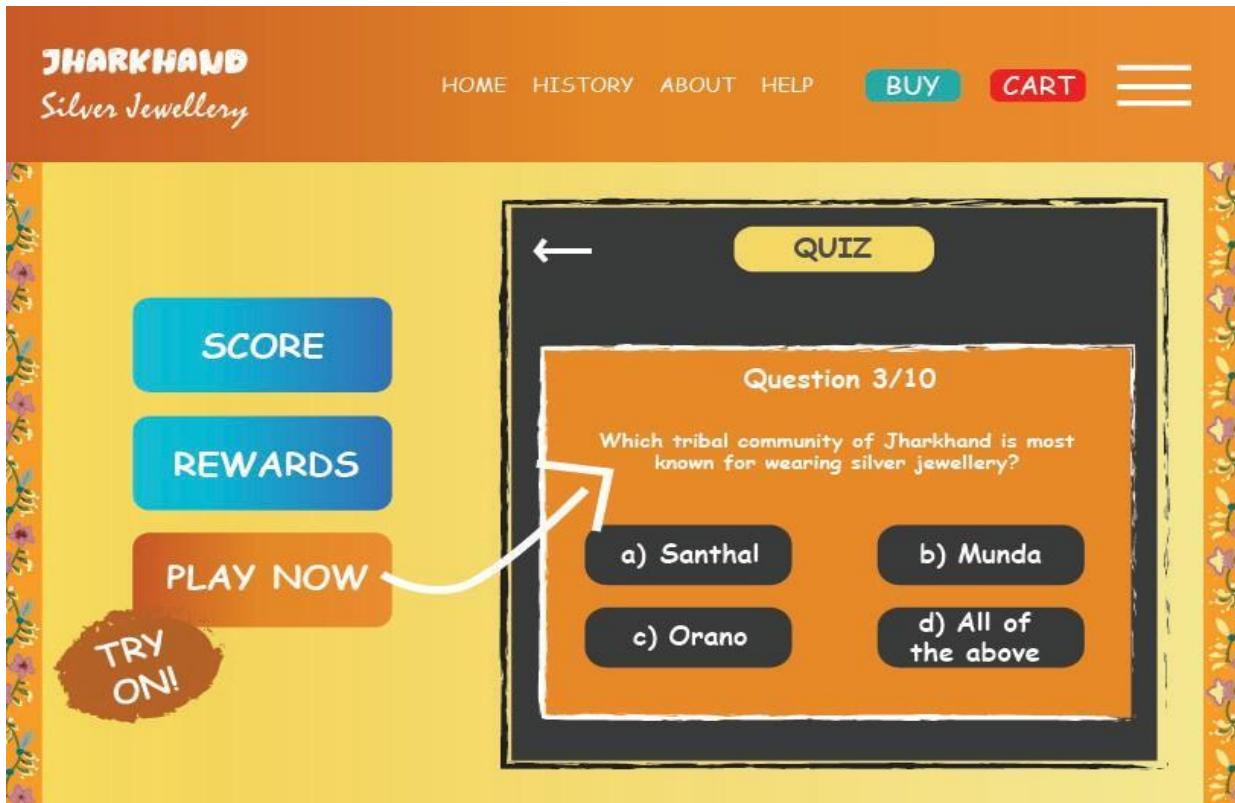


Fig.2 Design approach with framework.

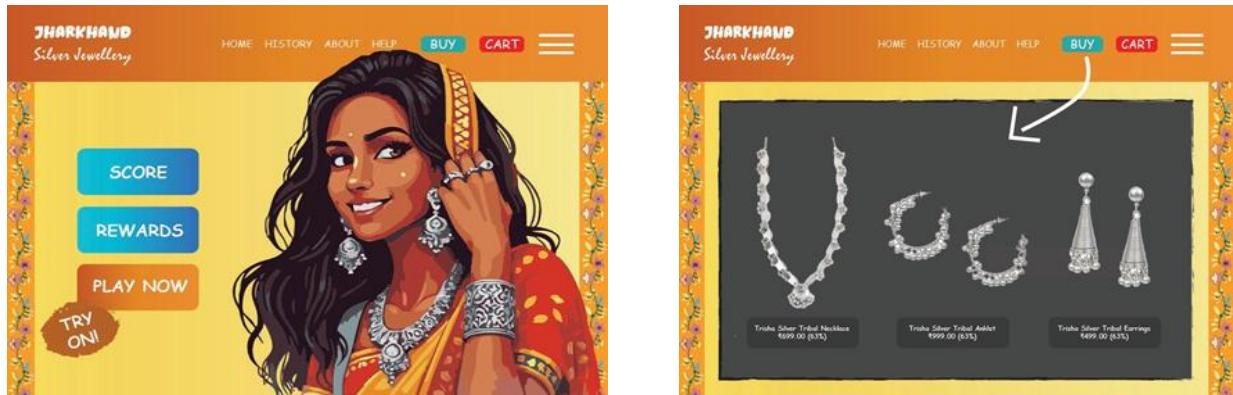


Fig. 3 The Game landing page and Shop page.

VI. CONCLUSION

In conclusion, this research paper has explored the cultural significance and aesthetic beauty of silver jewellery of Jharkhand while focusing on the potential of gamification as a modern tool for spreading awareness. The study was entirely based on online research, including surveys, literature reviews, and secondary visual analysis, which helped in understanding the changing preferences of people towards traditional jewellery. The responses collected through Google Forms reflected that many individuals still lack awareness about the unique designs and cultural value of Jharkhand's silver jewellery. However, their interest in learning through engaging methods like games, quizzes, and interactive platforms highlighted the scope of gamification in this field. This research opens up

possibilities for future work where actual gamification models, mobile applications, or interactive campaigns can be developed to promote not just Jharkhand's silver jewellery but also its rich cultural heritage among a larger audience.

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