



CHALMERS
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Beyond the Archive: Interaction Design for Visibility and Reflection in Women's Sports History

A Research through Design Study of Feminist and Participatory
Museum Interaction Design

Master's thesis in Interaction Design

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Gothenburg, Sweden 2026

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Abstract

Visibility in sports history is not merely about who is represented and who's stories are brought to light from the archives, it is also a matter of question for design. This master's thesis explores how interaction design, grounded in Feminist HCI and participatory design methodologies, can be an active participant in challenging the dominant narratives and concurrently encourage reflection in public museum spaces.

Using a Research through Design (RtD) approach, this study documents the design and development of a physical, interactive installation exhibited at Gothenburgs Sports Museum. The artifact utilizes a playful, analogue spinning wheel mechanism to present hidden narratives of women's sports history.

Based on qualitative evaluations, this research conceptualizes four transferable key factors that constitute the study's design knowledge: (1) *Tangible and Playful Interaction* as an entry point to complex themes, (2) *Chance-Based Content Selection* to subvert traditional user control and mirror the fragmented reality of marginalized history, (3) *Emotional Engagement as a Catalyst for Reflection*, demonstrating how productive discomfort triggers personal awareness, and (4) *Visibility through Framing*, which underscores that design framing structures should be treated as a core mechanism for shaping visibility and meaning-making.

Keywords: Museum Experience Design, Tangible Interaction, Research through Design, Feminist HCI, Participatory Design, Women's Sports History

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1

Introduction

In the summer of 1926, Slottsskogsvallen in Gothenburg was filled with thousands of spectators. They had all gathered there to witness the second ever Women's Olympic Games, in a time where women were explicitly excluded and unwelcome in most sports in the official Olympic Games [1], [2]. The games in Gothenburg were successful in many ways. The pioneers involved with organizing the event, and those who participated despite the then occurring medical myths and social norms about women in sports paved the way for future generations of sportswomen. World records were broken and women's abilities proven [3].

Despite the success, many of these athletes returned to a life of anonymity and their achievements were systematically omitted from the dominant historical narrative of sports. These stories are a few of many that have remained in the shadows, since sports history has often been documented and communicated through narratives that foreground male athletes, competitions, and achievements [2]. This imbalance and structural exclusion contribute to a broader visibility gap, which most likely affects how we perceive and value women's athletic contributions today.

Museums are not an exception to which women's contributions have been under-represented [4], [5]. In shaping how history is communicated and understood by the public, museums carry a crucial role [6]. Through exhibitions and installations, museums have potential to highlight overlooked narratives and encourage visitors to reflect on historical material. Instead of presenting history as a static collection of facts, interactive technologies can help move beyond passive observation and create more engaging and participatory visitor experiences, potentially fostering deeper engagement and reflection.

Interaction design offers tools not only for engagement but also for challenging dominant narratives and creating alternative forms of representation. The way exhibitions are designed influences how stories are told and whose perspectives are represented [7], [8], [5]. By drawing attention to issues of representation and inclusion, feminist theory provides a useful framework for addressing historical imbalances such as the underrepresentation of women in sports history. From a feminist design perspective, interaction design can be used to create empathetic, inclusive, and critical experiences that foreground marginalized voices [9].

Similarly, participatory design emphasizes collaboration and the inclusion of multiple perspectives in the design process. Rather than positioning designers as the sole

decision-makers, participatory approaches involve stakeholders and users in shaping design outcomes. In the context of museum installations, participatory design can help ensure that the resulting experience reflects diverse viewpoints and creates opportunities for meaningful engagement.

This thesis builds on an ongoing collaborative project with Gothenburg Sports Museum. Through a Research through Design (RtD) approach, the development of an installation is documented. By combining feminist theory and participatory design through facilitating co-design workshops with athletes, designers and regular museum visitors, the aim is to identify design qualities that allow invisible histories to be felt and understood in a modern museum setting. This thesis explores how these design approaches can inform the development of an interactive museum installation that addresses the historical visibility gap in women's sports and how the installation can act as a catalyst for reflection. The final outcome will consist of a working installation and a qualitative analysis through observations and semi-structured interviews.

Ultimately, this project seeks to explore how intentional interaction design can address the visibility gap in women's sports history and encourage reflection. By doing so, we can ensure that the roar of the thousands of spectators at Slottsskogsvallen is finally heard and that the eminent women who participated are finally seen.

1.1 Background

If you go to your local library and look at the sports book, they will almost certainly be predominantly about men. If you go to a university library, the bulk of the writing in sports history and sociology assumes male standards. Switch on your television to look at sports programmes and it's the same story - you can be 90 per cent sure to see male rather than female performers; or go to a pub and listen to conversations about sports and they will inevitably be conducted by men talking about male competitions. [2, p. 1]

Historically, sports have been dominated by men. Women's participation in sports has been framed as inappropriate and incompatible with dominant ideals of femininity [10], [11]. The traces of history are still encountered, as gender disparities in sports persist. In many aspects, the field of sports is favoring men, resulting in women's sports being systematically positioned as less valued, both socially and economically [2].

Research documents significantly lower participation rates among girls and women, compared to boys and men [12]. These differences cannot be explained solely by individual choice, they are shaped by broader social and cultural factors. Cárcamo et al. point to the influence of early formed gender perceptions around sports, where males are viewed as superior in sports, while femininity is considered weak and fragile.

The image of women in sports is constructed and reproduced in both conscious and

unconscious ways [2]. One way in which the stereotypes are reinforced is through cultural media, as attitudes of adolescent girls towards sports are shaped by the accessible and socially circulated images of femininity [2]. For instance, in popular cultural formats such as contemporary teen films, the regressive and stereotypical portrayals of adolescent sportswomen are often reproduced [13].

Regarding overall media representation in sports, it is also strongly skewed in favor of men [2], [14], [15]. Although there is a growing visibility of women's sports, it has not altered the underlying gendered power structures within sports [11]. The emerged visibility is often intertwined with the commercialization of the female body where athletic representation becomes linked to aesthetic and sexualized forms of visibility rather than solely sporting performance [2]. Once female athletes are represented in media, they are often portrayed in ways that align with conventional gender norms, positioning female athletes within roles such as objects of men's heterosexual desire or in relation to familial identities such as mothers, wives, or girlfriends [15].

Together, these patterns of imagery and representation shape public perception of who belongs in sports and whose achievements are valued. There is research that emphasizes the transformative potential of visible and empowering role models. As Isikgöz et al. argues, inspirational female athletes can function as compelling symbols of empowerment, motivating young girls to aspire toward equality and participation [16]. This underscores the importance of increasing the visibility of women athletes, alongside adopting critical and reflective approaches to representation.

The Role of Museums

In museums, representations are commonly formed around stereotypical notions of masculinity and femininity. Women presented in museums are often presented as more passive and undeveloped, in comparison to how men are portrayed [5]. As masculinity and femininity are relative concepts which are socially and historically constructed [11], they are subject to change. Cultural institutions undoubtedly play a crucial role in either reinforcing or challenging dominant narratives. As producers of public history and collective memory, museums are uniquely positioned to reshape how women's athletic achievements are framed and understood. Hooper-Greenhill emphasizes the importance of museums to recognize their broader social responsibility in shaping knowledge and influencing public understanding [7]. In this sense, museums are active participants in cultural politics, determining which histories are made visible and how they are presented.

Furthermore, Callihan and Feldman argue that increasing women's presence within museums is insufficient without addressing underlying structures of power. While their analysis focuses on institutional leadership and labor dynamics [17], this work extends their critique to exhibition design and visitor experience.

The Position of Interaction Design

This thesis positions interactive museum design as a means of challenging entrenched gendered narratives and enabling more equitable representations of women in sports. It explores how the design of an interactive installation can create conditions for disrupting dominant historical framings and for reflection, ultimately seeking to move beyond the archives.

1.2 Problem Statement

Tolvhed argues that women's sports history remains underexplored, partly due to a disciplinary gap where sports historians have paid limited attention to women's sports, while gender historians have overlooked physical culture and sports [18]. This fragmentation contributes to the continued marginalization of women's sports within academic discourse. A similar gap can be identified within feminist scholarship more broadly, where feminist critiques have extensively examined media such as film, television, magazines, and historical narratives, but have comparatively rarely engaged museums as sites of analysis [5], [19]. Together, these gaps indicate that both women's sports history and its institutional representation remain under-theorized and under-communicated. This limited scholarly attention further underscores the need for alternative and methods of communication, such as interactive museum installations, to make these histories visible and to support broader public engagement and understanding.

1.3 Research Objective and Research Question

The purpose of this research is to explore how interaction design can serve as a tool for making marginalized histories visible and engaging, in terms of encouraged reflection. Specifically, the project seeks to examine how feminist theory and participatory design approaches can be applied within a sports museum context to foreground women's sports history. By integrating interaction design theory and Research through Design with feminist design perspectives and participatory design methods, the thesis aims to contribute both theoretically and practically to discussions on inclusive museum practices.

To summarize the introduction, the historical underrepresentation of women in sports history continues to shape how sporting history is portrayed today. Museums and interactive installations hold the potential to highlight marginalized stories and invite visitors to reflect on these representation issues. Therefore, this study explores how interaction design can contribute to addressing the visibility gap in women's sports history and encourage users to reflect.

The guiding research question for this study is the following: *What are key factors for designing an interactive museum installation that addresses the visibility gap in women's sports history and encourages visitor reflection?*

1.4 Scope and Delimitations

This thesis focuses on the design and development of an interactive museum installation that addresses the visibility gap in women's sports history in the context of the Gothenburg Sports Museum. The study is therefore limited to this specific museum context and focuses on women's sports history. Findings may not be directly generalizable to all museums, but aim to provide transferable design principles and reflections.

Due to the limited time frame, the study focuses primarily on design qualities, interaction concepts, and visitor responses during the design process, rather than the long-term impact of a completed installation stationed in a museum setting.

The project adopts a delimited focus on women's sports history in relation to the 1926 Women's Olympic Games, and the historical context surrounding it, in accordance with requirements and interests expressed by the Gothenburg Sports Museum. While the project engages with questions of gender representation and visibility, it does not aim to provide a comprehensive representation or historical analysis of women's sports history as a whole. Instead, historical material is used as a foundation for exploring interaction design and visitor engagement.

The project is also limited by the availability of historical material provided through archives, photographs, statistics, and other documentation related to women's sports history. As a result, the design and content of the installation are shaped by the accessible material available during the project period.

The participatory design activities and user tests involve a limited number of participants due to the time constraints and scope of a master's thesis project. Consequently, the findings should not be understood as universally representative of all museum visitors or user groups. Rather, the study aims to generate qualitative insights into how interactive and tangible design elements may support engagement and reflection in a museum context.

Furthermore, although the project explores visitor reflection and emotional engagement, the study does not attempt to quantitatively measure psychological constructs such as empathy. Instead, reflection and engagement are examined qualitatively through observations, workshops, and semi-structured interviews.

1.5 Disposition

The following section presents the theoretical framework of the study. The chosen methodology and data collection methods with justifications and discussion are then presented in section 3. In section 4, the results of the study are presented, followed by a section for discussion of the study's outcome, and recommendations for further research are lastly presented. In the final section, conclusions are presented.

2

Theory

Together, feminist theory and participatory design provide a theoretical and ethical foundation for the design of the installation and the thesis. These perspectives collectively inform how visibility, interpretation, and engagement are understood in the design and evaluation of the installation.

2.1 Feminist Theory in Design

Feminist theory in design provides a critical perspective and understanding of how design practices are never neutral, but instead actively participate in the production and reinforcement of social, cultural, and institutional power relations [19]. Within this perspective, design is understood as a situated practice that shapes what is made visible, whose perspectives are prioritized, and which narratives are legitimized. In this project, informed by feminist theory.

In contrast to approaches that assume an objective design process, feminist design explicitly challenges the “male default” embedded in many technological and institutional systems [9], including museum practices [5]. The persistent association between sports and masculine prowess [11] highlights the need for feminist design interventions that challenge dominant assumptions about athletic authority and visibility. Rather than attempting to rewrite history, a feminist theory approach to museum design seeks to reframe historical narratives by shifting the perspectives through which visitors encounter and interpret the past [19].

Within museum studies, Hein argues for the integration of feminist theory as a way to critically interrogate interpretative frameworks and institutional authority. Hein suggests that feminist approaches have the potential to “energize and revitalize museums and broaden the base of their appeal” [19, p. 29], positioning feminist theory not only as a critical lens but also as a generative force for rethinking how museums engage with audiences and construct historical narratives. This aligns with broader critiques in museum and heritage studies that highlight how exhibitions are shaped by selective processes of inclusion and exclusion, often reflecting dominant cultural perspectives [6], [5]. Porter critiques the common claim of museums to represent history “as it really was,” arguing that this apparent neutrality obscures the interpretative processes through which collections and exhibitions are constructed, thereby reinforcing an illusion of objectivity and authenticity [5].

Adamek and Gann demonstrate how the absence of artifacts that represent women’s work and achievements can shape institutional narratives over time, leading to the reproduction of interpretative frameworks dominated by male. In their study, the lack of material related to women in a science museum context resulted in exhibitions that reinforced a predominantly male framing of scientific history [4]. This highlights how processes of selection, curation, and display contribute to the construction of historical narratives, rather than merely reflecting them. They further argue that addressing the underrepresentation of women in museum collections requires an active and engaged curatorial stance. Rather than passively responding to available material, museum professionals are encouraged to actively seek missing narratives, share interpretative authority, and develop more inclusive exhibitions [4]. While Adamek and Gann focus on curatorial practice, their argument can be extended to interaction design in museum contexts, where design decisions similarly influence which narratives become visible, how they are framed, and how visitors are invited to engage with them.

In interaction design and human-computer interaction (HCI), feminist theory provides a key framework for critically understanding how technology influences social relations and power structures [20], [21], [22]. Bardzell argues that feminism is a natural ally to interaction design, as both are concerned with participation, power, and the shaping of lived experience through designed systems [22]. She proposes feminist HCI as an approach that foregrounds values such as pluralism, participation, advocacy, ecology, embodiment, and self-disclosure, thereby expanding the scope of what is considered meaningful and successful design. From this perspective, interaction design is not merely concerned with usability or efficiency, but with the ethical and experiential dimensions of technological mediation.

Extending this view, Rode emphasizes that designers inevitably inscribe values into technological artifacts, whether implicitly or explicitly. As such, design becomes a site where cultural assumptions and social norms are both reproduced and challenged. By intentionally embedding progressive values, designers can contribute to reshaping understandings of gender roles and social relations within technological and interactive systems [21].

More recent feminist approaches to design further emphasize the entanglement of power, knowledge, and representation in digital and material systems. D’Ignazio and Klein argue that data and its visual and material representations are never neutral, but always shaped by historical and structural inequalities. Their concept of “data feminism” highlights the importance of challenging power asymmetries through design practices that make marginalized perspectives visible and legible [20].

In this thesis, feminist theory is therefore employed as both an analytical lens and a generative framework for design practice. It informs the design of an interactive museum installation that seeks to address the historical underrepresentation of women in sports.

2.1.1 Inclusive Design

According to the Inclusive Design Research Center, "Inclusive design is design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference." [23].

For a design to be considered inclusive, the process and the tools must be inclusive [23]. In that sense, the design should be "guided by the individuals that have difficulty or are excluded from the existing designs". The design team should ask "who is still missing?" at each iteration and the guiding individuals should not be "relegated at the margins to the role of subjects of research or token participants in design exercises. Co-designers are not just invited to a "table" that wasn't designed with them, but included from the beginning to design an inclusive process." [23].

2.1.2 Translating Feminist Theory into Design Goals

Empathized by Sharp et al. is that: "one cannot design a user experience, only design *for* a user experience" [24, p. 13]. With respect to that, one main design goal for the project in this thesis is to design conditions for reflection through participation and embodiment [22].

The goal with the design is to surface and make historical narratives accessible and to engage visitors not only cognitively but also emotionally and physically [19],[22], to encourage critical reflection on gender inequality in sports, rather than passively deliver information [21], [4].

2.2 Interaction as Meaning-Making

Although the strengthened position for interaction design as a design discipline, together with disciplines such as product design, information design, graphic design, fashion, and architecture, Human-Computer Interaction is rooted as the "human face of engineering, and accordingly it has deep ties with psychology, science and technology studies and social informatics" [22, p. 1302]. Within this context, interaction design is primarily concerned with how people interact with technology, in contrast to industrial design, which is more concerned with optimizing functions and the value of products and systems [25].

Interaction in this thesis is conceptualized as a core component of meaning-making rather than a purely functional interface between visitor and content. Drawing on museum studies that understands exhibitions as constructed and multi-layered representations [5], [8], meaning is not treated as pre-existing within the historical material, but as something that emerges through engagement with the exhibition environment. In interactive museum contexts, this process becomes particularly explicit, as visitors actively participate in shaping their interpretative trajectory. Accordingly, interaction is understood as a generative process through which historical narratives are not only accessed but also framed, negotiated, and interpreted.

This aligns with Hassenzahl's understanding of user experience as subjective, situated,

and emotionally mediated rather than purely instrumental [26]. This is particularly relevant in museum contexts, where visitors encounter exhibitions through personal expectations, prior knowledge, social settings, and physical environments. Consequently, the experience of historical narratives is shaped not only by the informational content itself, but by how visitors interact with, interpret, and emotionally respond to the exhibition as a whole, meaning that interpretation is always situated rather than fixed. Similarly, design can be understood not only as problem-solving, but as a practice of engaging with complex, embodied, and situated experiences [27].

2.2.1 Interaction as Exploratory Engagement

Building on this, interaction is further understood as a process that can be shaped through specific experiential mechanisms. One such mechanism is unexpectedness. Rogers describes unexpected interaction as “experiencing something different to what normally one would expect in a similar situation,” arguing that it can increase engagement and support reflection [28, p. 13]. In a related sense, Bal argues that effective exhibitions may produce “the shock of unexpected visions,” disrupting habitual ways of seeing and interpreting [29, p. 100]. Rather than being incidental, such moments of disruption can be understood as deliberate design strategies that challenge expectation and open space for reflection. Another mechanism is the use of game-inspired structures, often discussed under the term *gamification*. Kapp describes gamification as the use of game elements in non-game contexts to enhance engagement and motivation [30]. In museum settings, such approaches can support active participation by introducing rules, feedback, and progression that encourage visitors to engage with content in more exploratory ways.

Taken together, these perspectives establish interaction not only as a process of meaning-making, but as something that can be designed to actively shape how meaning emerges. Interaction can therefore be understood as a condition that structures engagement, interpretation, and reflection through embodied experience. Within this framing, interaction is also conceptualized as exploratory engagement. Rather than positioning visitors as passive recipients of predefined narratives, interactive systems can create conditions for curiosity, discovery, and self-directed exploration. In museum contexts, this is particularly significant, as visitors do not simply receive information but actively construct meaning through movement, selection, and interpretation [8].

Exploratory engagement thus shifts attention from efficient access to information toward processes of discovery. Through exploration, visitors encounter content in non-linear and sometimes unpredictable ways, which can reveal the fragmented and constructed nature of historical narratives. This is especially relevant when addressing underrepresented histories, where absence, selection, and framing are central to how narratives are produced.

In the context of this thesis, exploratory engagement is therefore understood as a design strategy for increasing both engagement and critical reflection. By positioning interaction as exploration, the design invites visitors to actively uncover and interpret women’s sports history, and in doing so, reflect on how visibility and omission shape

historical understanding.

2.3 Designing a Meaningful Museum Experience

In the early days of museums, their main purpose was to collect and preserve objects to be presented to the public. Since then, the focus have shifted from collections to visitors [31], communication [6] and to provide educational services [32]. Museums today are more than displaying objects. As argued by Smith and Iversen, museums are intended to change how people experience and perceive the world by introducing new ways of thinking. The role of the interaction designer is thus to design exhibitions that meaningfully connect cultural heritage with the lived experiences of contemporary audiences [33].

2.3.1 Experience Design

The user experience regards how people feel about a product [24]. Norman highlights that experience is what establish how people remember their interactions, and therefore is experience design critical. For a design to be considered good, it has to take care, planning, thought and understanding of a user's behavior.

From an interaction design perspective, visibility is not achieved solely through the presence of information, but through meaningful engagement with that information. As Norman notes, a design must be used in order to achieve its purpose [25]. In this thesis, engagement is therefore understood as a necessary condition for making overlooked histories visible and for creating opportunities for visitor reflection.

According to Norman, fundamental principles of experience design are: affordances, signifiers, constraints, mappings, feedback and conceptual models [25]. Norman describes affordances as the relationship between a physical object and a person. For an affordance to be effective, meaning that people can understand what actions are possible, it has to be discoverable and perceivable [25]. It could also be described as attributes of an object that allows people to understand how to use it [24]. A signaling component of affordances, such as a label of instructions, is what Norman call signifiers [25]. Constraints is a way of restricting the user interaction and can be used to prevent users from making mistakes [24]. In that sense, constraints can force a desired behavior [25]. Mapping regards the relationship between two set of things. Spatial correspondence can make it easier for a user to understand how devices are being controlled [25]. Feedback is the communication of the results of an action. It must be immediate, otherwise there is a risk that the user quit the interaction [25]. Conceptual models are explanations of how something works, "A good conceptual model allows us to predict the effects of our actions." [25, p. 128]

Furthermore, Sharp et al. highlights the importance of designing a consistent interface, referring to that user use the same elements for achieving tasks. They argue that an inconsistent interface makes it hard for users to remember how to use it [24].

Historically, usability has been the main objective of HCI [24] and continues to be

positioned at the core of the discipline [22]. It regards effectiveness, efficiency, safety, utility, learnability and memorability of interactive products, but does not address the overall quality of the experience [24].

Usability criteria are proposed to provide quantitative indicators and usability goals are being described as more objective than user experience goals [24]. However, Bardzell suggests that usability evaluation approaches (e.g., mental models, Fitts' Law, Hick's Law, and usability lab protocols) are underpinned by values that have historically been associated with masculinity. Similar value orientations can also be traced within dominant design methodologies (e.g., waterfall and agile, design principles) [22].

Sharp et al. divide user experience goals into desirable ones, such as engaging and rewarding, and undesirable ones, like boring and unpleasant [24]. At the same time, some researches argue for uncomfortable interaction and its benefits for entertainment, enlightenment and a richer user experiences [34], [35].

2.3.2 Tangible Interaction

In contrast to traditional forms of museum displays, which are often characterized as “hands-off” and positions the visitors as passive observers, “hands-on” exhibits encourage visitors to touch and actively interact with the content [36]. This shift toward interactivity reflects the broader transformation in museum practice, where increasing emphasis is placed on creating meaningful and engaging relationships between museums and their visitors. As argued by Hooper-Greenhill, visitors are no longer contented with passive observation but instead seek more active, sensory, and immersive encounters with exhibits [6]. The educational value of such approaches is supported by previous research, as people generally prefer to learn by doing [24]. For instance, Phichai et al. demonstrate that participants interacting with tangible interfaces in museum exhibitions were able to gain domain-specific knowledge through interaction [37]. Together, these perspectives highlight the potential of interactive exhibits to facilitate both engagement and learning by involving visitors more directly in the experience.

Furthermore, tangible interaction is argued by Antle et al. to create conditions for slowing down user interaction and thereby support deeper reflection [38]. By Hooper-Greenhill, activity and involvement are argued to facilitate durable changes of perception [6], which is, as previously mentioned a main intent of museums [33].

2.3.3 Science Communication

The shift in museum practice from a focus on collection toward communication is described by Hooper-Greenhill. She argues that museums produce messages to their visitors through exhibitions, and the phrasing of words can highly influence attitudes towards the past, as well as the present [6]. The power of words should therefore be acknowledged, as further argued by Hooper-Greenhill. Dominant societal values can unintentionally be reproduced through museum texts when perceived as normal or natural, rather than socially constructed and historically positioned, thus

contributing to the reproduction of existing power relations [6]. In this sense, museum communication is not primarily a matter of individual intent but of normalized ways of seeing and representing the world. This perspective is particularly relevant for the present study, as it suggests that the lack of representation of women's sports history is not accidental, but produced through broader societal structures. Hooper-Greenhill suggests expanding both the number and diversity of museum contributions and argues that it can challenge the curatorial monopoly over interpretative narratives [6].

2.3.3.1 Feminist Approach to Science Communication

In Data Feminism, D'Ignazio and Klein stated that data are not neutral or objective, but rather a product of unequal social relations [20]. This is in line with Biester's research, that highlights how gender bias in AI systems can emerge in ambiguous query situations, where models either retrieve only men's results or implicitly favor male-associated outcomes by generating responses that more closely align with men's events than women's [39].

Central to feminist thinking is to perceive all knowledge as situated. Knowledge is connected back to its roots, the context in which it was produced and it is the responsibility of those evaluating or building upon the knowledge to consider the context and conditions under which it was produced [20]. The authors note: "This context allows us, as data scientists, to better understand any functional limitations of the data and any associated ethical obligations, as well as how the power and privilege that contributed to their making may be obscuring the truth." [20, p. 153]. This perspective is directly relevant to the design of the museum installation itself, where the selection and presentation of content are shaped by the designer's choices.

Increased visibility is not merely a matter of representation, but also of cultural legitimacy. As Spagert and Wolf note in relation to science communication, visibility contributes to challenging established stereotypes and reshaping perceptions of expertise [40]. Within museum contexts, this suggests that exhibiting women's sports history may influence how athletic competence and historical significance are culturally understood.

2.3.4 Learning

Designing for visibility and designing for learning are closely interconnected, as visibility constitutes a prerequisite for engaging with and reflecting on content, while learning depends on how that content is framed, structured, and made interpretable. In this study, design for visibility is understood as a prerequisite for learning, as it determines which narratives are made accessible to visitors, while design for learning concerns how these narratives are framed, interpreted, and transformed into reflective understanding.

Hooper-Greenhill argues that entertainment and enjoyment within museums should not be viewed as separate from education, but rather as important conditions for effective learning, emphasizing that "learning is best achieved in circumstances of

enjoyment.” [6, p. 140]. This perspective challenges traditional notions of museums as primarily informational institutions and instead positions visitor engagement as central to knowledge formation.

From this perspective, learning in museums is understood as an active and interpretative process. Hooper-Greenhill further argues that exhibitions must provide visitors with structures through which information can be understood and connected to prior experiences. When exhibitions create opportunities for visitors to relate historical material to their own existing knowledge and perspectives, the communicative process remains active and meaningful [6]. This highlights the importance of interaction, contextual framing, and participation in supporting reflective forms of learning.

According to Sharp et al., when designing for learning, the interface should be designed in a way that encourages exploration [24]. Rather than neutrally convey, museums can create interpretative environments that encourage visitors to engage critically with historical narratives. As Bal argues, exhibitions can communicate underlying ideas and perspectives without explicitly prescribing political conclusions, thereby supporting reflective rather than didactic forms of engagement [29].

Museum experiences can be understood as situated and contextual rather than purely informational encounters. Falk and Dierking conceptualize the museum visit as the interaction of three overlapping contexts: the personal, sociocultural, and physical context. According to this model, meaning-making in museums emerges at the intersection of visitors’ prior knowledge and identities, the social environment in which the visit takes place, and the physical and material design of the exhibition space [8]. Similarly, Porter argues that museum exhibitions should be understood as constructed representations composed of multiple layers of meaning, including spatial layout, visual design, objects, sound, movement, and curatorial selection [5].

Together, these perspectives position museum exhibitions not as neutral containers of historical facts, but as designed environments in which meaning is actively produced through the interaction between exhibition design and visitor interpretation. This is particularly relevant for interactive installations, as it highlights how engagement and interpretation are shaped not only by content, but also by interaction design and visitor context.

2.4 Participatory Design

Participatory design complements the theoretical framework by placing feminist principles in practice. Rather than designing for users from a position of detached expertise, participatory design emphasizes involvement of stakeholders in the creative process. It addresses the representational gap in sports history by ensuring that the selection and presentation of narratives are informed by stakeholders with situated knowledge and lived experience. The necessity of incorporating participatory approaches in feminist interaction design is highlighted by Bardzell [22].

Participatory design approach is also consistent with Hooper-Greenhill’s emphasis on evaluating exhibition concepts with target audiences and relevant stakeholders

throughout the development process. She argues that ongoing testing is particularly essential for interactive exhibits, where visitor engagement and usability are fundamental to their effectiveness [7]. In line with this perspective, evaluation is not positioned as a final validation stage in this thesis, but as an embedded and continuous component of the design process.

What differs participatory design from other similar approaches, such as co-design, experience-centered design and conventional interaction design is through its explicit commitment to core principles of mutual learning, democratic participation, user empowerment, and the recognition of all participants as knowledgeable and skilled contributors to the design process [41].

The use of participatory design in this study is further supported by broader perspectives on participation as a driver of change and improvement. As argued by Kelty, participation has moved beyond being understood as beneficial to participants, to be expected to affect structures, institutions, organizations, and technologies. Participation is, as also argued by Kelty a "principle of improvement, an instrument of change, a creative force. It no longer threatens, but has become a resource: participation has been made valuable." [42, p. 24]. In this sense, participation is not only about inclusion, but also acts as a means of improving and strengthening the design outcome. Therefore, in this study, the contributions of the workshop participant's does not merely represent user perspectives, but functions as a resource to shape the design, refine concepts, and identify key factors relevant to addressing the visibility gap in women's sports history.

2.4.1 A Critical Perspective

While participatory design is often positioned as a means of empowering users through inclusion in the design process [41], critical perspectives highlight that participation does not automatically lead to equal power relations [43].

It is important to acknowledge that participatory processes in design do not remove designer control, but rather redistribute it in partial and situated ways. As Kelty argues, participation has increasingly become understood as a resource for improvement and change, rather than a disruptive or oppositional force [42]. While this framing highlights the productive potential of participation, it also risks obscuring the asymmetries that remain between designers, institutions, and participants.

The aim of participatory design in this project is not to legitimize already existing plans or using the approach with the intention to only benefit the designers, which are critical perspectives of participatory design [43]. It is rather used with the aim to redistribute authority and support the inclusion of multiple perspectives in shaping the installation, grounding in feminist theory approaches that emphasize that knowledge is situated and that design inevitably involves acts of selection, framing, and exclusion [20]. Within this project, participatory workshops informs key aspects of the installation, including thematic categorization and design decisions.

However, an important note is that power asymmetries between designers and participants remain present in how input is interpreted and translated into design

decisions. The goal is not to eliminate designer authority, but to make it visible, accountable, and open to influence. In this sense, participation becomes a means of challenging interpretative monopolies rather than dissolving them entirely.

3

Methods

The research question is exploratory and design-oriented, with the aim of identifying key factors that inform the design of an interactive museum installation. While feminist design and participatory design inform the project’s theoretical perspective, Research through Design (RtD) provides the methodological framework through which these ideas are explored and materialized in practice.

3.1 Methodological Framework

The methodological approach of this thesis is situated at the intersection of Research through Design and participatory design. Rather than approaching design as a purely problem-solving or commercially driven activity, this study positions the design process as a primary means of inquiry and knowledge production. In addressing the sociocultural complexities of the visibility gap in women’s sports history, the design artifact is treated as an active site of investigation, while stakeholders are engaged as co-interpreters of this underrepresented historical domain.

Within Research through Design, the act of designing functions as a primary driver of knowledge. Rather than treating design as a final outcome, RtD positions the iterative development of prototypes as a form of inquiry [44]. In this understanding, knowledge emerges through cycles of creation, testing, and critical reflection of artifacts, where the design process itself constitutes research. This perspective aligns with Gaver, who argues that in RtD the production and interpretation of design artifacts are central to generating research contributions [45].

This approach is particularly appropriate for the present study, as the research question concerns how interaction design can support visibility and reflection in the context of women’s sports history. Addressing such a question requires the exploration of design possibilities in practice. The installation therefore functioned not only as a design outcome, but as a research instrument through which different forms of interaction, representation, and engagement could be investigated and critically reflected upon.

A holistic approach was also considered required to address the research question, as the problem involves interrelated social, institutional, and design-related dimensions that cannot be understood in isolation. RtD is well suited to address this type of problem, as it adopts a holistic approach that integrates knowledge and theories from

multiple disciplines, allowing a more comprehensive understanding of the complex and situated nature of the research context [44]. In this way, the approach enables both conceptual and practical insights to emerge through qualitative, practice-based inquiry.

While RtD provides the structural framework for developing the installation, participatory design informs the collaborative and democratic orientation of the research process. Given that historical marginalization is inherently normative and value-laden, addressing it requires the inclusion of multiple perspectives and a decentring of the designer's singular viewpoint.

Workshops are central to participatory design. Bødker et al. describe workshops as "a structured design event in which participants with different backgrounds meet in mutual learning and joining reflection processes where they exchange knowledge and ideas about current or future practice." [41, p. 53]. In this study, workshops were used to involve participants in collaborative reflection and co-design activities, shifting the role of participants from passive evaluators to active contributors. Through methods such as speculative brainstorming and discussions of themes in women's sports history, the workshops created spaces for critically engaging with the sociopolitical implications of the design.

The combination of RtD and participatory design results in a dialogical research process in which design artifacts and collaborative reflection continuously inform one another. Prototypes function as tangible prompts that support discussion, interpretation, and critique during workshop sessions. The qualitative material generated in these sessions, such as reflections on emotional responses to historical content and interpretations of visual prototypes, goes beyond usability feedback. Instead, it constitutes a core analytical resource that informs how the design contributes to addressing the visibility gap in museum contexts.

3.1.1 Data Collection

Within the RtD framework, data collection is not treated as a separate phase but as an integrated part of the design process, where empirical material is continuously generated through engagement with prototypes and participant input. This approach is particularly suitable for exploring experiential and interpretive questions, such as how interaction design can contribute to making women's sports history more visible and engaging within a museum context.

To support this exploratory and iterative process, multiple qualitative methods were combined. Semi-structured interviews were used to capture participants' individual experiences and interpretations of the prototypes. This method was chosen due to its flexibility, allowing participants to articulate personal reflections while still providing structure around key aspects of the interaction, such as usability, understanding, and engagement.

Workshops were used as a participatory design method to involve stakeholders and target users in the early and ongoing development of the concept. This method was selected because it enables collaborative knowledge production and supports the

inclusion of multiple perspectives in the design process. Rather than positioning participants as evaluators only, workshops allowed them to actively contribute ideas, critique emerging concepts, and engage in collective reflection on both content and experience.

What is important to note is that most of the data collected were in Swedish and the quotes presented in the Result section are attempted to be directly translated from Swedish to English.

In addition to empirical data generated through user engagement, literature studies were conducted to establish a theoretical foundation for the project. This was necessary in order to situate the design work within existing research on feminist design, interaction design, museum studies, and the representation of women in sports history. The literature also served as a conceptual lens through which empirical findings could be interpreted and understood.

Together, these methods were selected to support a holistic understanding of the research problem, combining theoretical grounding with empirical, experience-based insights. This triangulation of methods strengthens the analytical depth of the study and aligns with the iterative and exploratory nature of RtD.

3.1.2 Data Analysis

The collected empirical material was analyzed using thematic analysis, a qualitative method described by Braun and Clarke as a foundational approach to qualitative data analysis. Thematic analysis is a flexible and widely used method for identifying, analyzing, and interpreting patterns of meaning, referred to as themes, within qualitative data. The method enables the researcher to examine participants' experiences, perceptions, and reflections in depth while also allowing for rich and detailed descriptions of the dataset [46].

One of the central strengths of thematic analysis is its methodological flexibility. Unlike more rigid analytical approaches tied to specific theoretical traditions, thematic analysis can be adapted to different research contexts and epistemological perspectives. This flexibility made the method particularly suitable for the present study, which combines participatory design, feminist design perspectives, and a RtD approach. Since the study aimed to explore the experiences, interpretations and reflections of the participants about the installation and its content, thematic analysis provided an appropriate framework to systematically interpret the qualitative material gathered through workshops, observations and semi-structured interviews.

Once all data had been collected and transcribed, the material was imported into FigJam to support the analysis process. The material that was imported was quotes that have been highlighted in the transcription documents. A thematic analysis was conducted to identify recurring patterns and themes across the dataset. The transcribed interviews, workshop data, and user-testing feedback were reviewed iteratively and coded based on their relevance to the research aims. Codes were then grouped into broader themes through a process of comparison and refinement.

FigJam was used as a visual workspace to organize and cluster codes, facilitating the identification of relationships and recurring patterns across different data sources. To maintain traceability throughout the analysis, color-coding was used to distinguish between sources such as user-testing sessions, workshops, and observations. This enabled comparisons across datasets and supported the development of the themes and key factors presented in the results. Through this iterative process, preliminary themes were identified, reviewed, and refined before being synthesized into the key factors that form the basis of the results chapter.

The findings presented in the results section are based on these occurred themes from the thematic analysis including data from all stages of the process. A theme in this context is understood as "something important about the data in relation to the study goal" [24, p. 322]. Themes are patterns of something considered important and relevant for the study.

Analytical Criteria

The analytical criteria were developed in relation to the research question: *What are key factors for designing an interactive museum installation that addressed the visibility gap in women's sports history and encourages visitor reflection?* Accordingly, the analysis served two main purposes: (1) to evaluate user interaction with the prototype, and (2) to inform iterative design decisions, particularly regarding the selection and presentation of content.

The interaction dimension focused on observable user-system interaction, including tangible manipulation, engagement patterns, and interaction sequences. These aspects were analyzed to understand how different interaction design choices influenced user engagement and opportunities for reflection.

The content dimension focused on the selection, structuring, and presentation of historical material. This included an analysis of how visual and auditory elements were integrated, and how the system's categorization and framing influenced access to and interpretation of content. Importantly, findings from user testing and workshops were also used as a basis for deciding what types of content should be included or prioritized in subsequent iterations.

In addition, attention was given to how participants responded to the visibility of historical narratives within the installation, particularly in terms of how interaction mediated access to information and how this related to moments of reflection.

Together, these analytical criteria were used to identify and synthesize key design factors relevant to address the visibility gap in women's sports history through interactive museum design.

3.2 Procedure for Development and Design

The following section outlines the development and design process of the project, from the initial prerequisites and client-defined requirements to the early stages of concept ideation. The process was iterative and collaborative, grounded in a RtD approach where concepts were continuously explored, evaluated, and refined through

discussion, sketching, and reflection. Particular emphasis was placed on balancing the client's practical and thematic requirements with the project's broader aim of creating an engaging and reflective museum experience addressing women's sports history.

3.2.1 Prerequisites and Requirements

Since the thesis builds upon a previously initiated design project, certain preconditions and preliminary insights had already been established prior to the beginning of this thesis. Earlier exploratory work included initial fieldwork and visits to museums and exhibitions conducted for inspiration and contextual understanding. These investigations contributed to an initial understanding of how interactive technologies, spatial design, and narrative communication are used within museum environments, and informed the subsequent development of the installation concept.

Prior to the start of this thesis, some preliminary understanding of the subject area had been developed through earlier coursework related to interaction design and museum contexts. This provided a general thematic familiarity with how interactive systems can be used to communicate historical narratives.

The project was carried out collaboratively within a design team consisting of three interaction design students. The previous course functioned as the initial foundation for the project, where early concepts, themes, and design directions were first explored. This prior work provided an initial base that the thesis could further develop through a more research-oriented and iterative RtD approach.

As the present thesis builds directly upon this prior work, the wheel concept was already established at the outset of the study. Rather than treating this as a fixed constraint, the thesis approaches the existing prototype as an initial design artifact within a RtD trajectory. The focus is therefore not on originating a new concept, but on iteratively developing, testing, and critically reflecting on the existing design in relation to interaction, visibility, and museum-based meaning-making.

The collaborative nature of the project also influenced the design methodology. Concepts and prototypes were iteratively refined through collective critique and reflection, allowing for ongoing reflection and negotiation of design decisions. This collaborative approach aligns with participatory and iterative design principles, where knowledge and design outcomes emerge through dialogue, shared exploration, and successive refinement.

Following outlines the requirements defined by the client, which formed the initial framework for the development of the installation. These requirements established the conceptual, thematic, and practical boundaries of the project, and guided the early stages of ideation and design development. While the design process involved iterative exploration and reinterpretation of these constraints, they remained an important reference point throughout the project to ensure alignment with the museum's expectations, contextual constraints, and intended audience.

Based on the client brief, the installation should be designed as a modular and easily

transportable interactive exhibit. The concept should communicate the events of 1926, as well as the broader historical conditions for women in sports.

The design should be visually appealing and engaging, with an emphasis on creating curiosity and encouraging visitors to continue exploring the content. The use of digital screens is required to support the presentation of information and interactive elements.

The content must include essential factual information about the Women's games, such as sporting disciplines, participating nations, ceremonial aspects (e.g., the opening procession), and contemporary perceptions of female athletes. Medical perspectives on women in sports during the period should also be included to provide historical context.

The target audience is broad and inclusive, with a particular emphasis on attracting younger visitors while remaining accessible and engaging for all demographic groups.

3.2.2 Concept Ideation

The ideation phase was conducted collaboratively in the design group. It consisted of several structured sessions aimed at generating, developing, and evaluating potential concepts for the installation. Individual creative work was combined with collective discussion, allowing both divergent and convergent thinking to guide the development of ideas.

The first stage focused on individual brainstorming and sketching. Each group member independently generated ideas based on the project brief and the initial discussions about the goals of the installation. During this stage, earlier concepts were revisited and reflected on which aspects from previous ideas were worth retaining or further developing.

After a designated period of individual work, the group reconvened and each member presented their ideas and sketches to the others. These presentations served as the starting point for a collaborative discussion in which the ideas were examined from multiple perspectives. During this phase, the group reflected on the strengths and weaknesses of the different proposals and began identifying potential connections between them.

Following the presentations, the ideas were further developed individually, but now informed by the group discussion. At this stage, greater emphasis was placed on evaluating the feasibility and practicality of the concepts. Questions such as how the interaction would function in practice, how easily the concept could be implemented within the exhibition space, and whether the proposed interaction would support the intended visitor experience were considered. In addition to assessing feasibility, possible combinations of ideas were explored to identify elements that could be merged to form more comprehensive concepts.

Throughout this stage, the group members continued to comment on and build upon each other's ideas. Sketches were refined, interaction scenarios were elaborated, and certain concepts were expanded to include additional features or design elements.

This iterative exchange allowed ideas to gradually evolve from rough sketches into more structured proposals.

Once the ideas had been further developed, the group held another discussion session in which the concepts were collectively evaluated. At this point, the focus shifted toward narrowing down the range of options. Ideas that were considered the least feasible were removed from further consideration.

The selection process was supported by a dot-voting method. Each group member was given a limited number of votes and asked to place them on the ideas they considered strongest in terms of concept, feasibility, and relevance to the project brief. This process helped identify the ideas that had the greatest collective support within the group. As a result, four concepts emerged as particularly promising.

These four ideas were then prepared and presented to the project's client, Gothenburg sports Museum, for feedback. During this presentation, the concepts were explained in terms of their interaction design, potential visitor experience, and alignment with the goals of the exhibition. Among the proposed ideas, the client showed the strongest interest in the concept involving the spinning wheel, which subsequently became the main direction for further development in the project.

3.3 User Testing

The user testing consisted of pilot tests and mid-fidelity testing, conducted to iteratively evaluate and refine the design through participant feedback and observed interaction.

3.3.1 Pilot Tests

A series of pilot tests were conducted early in the design process, to evaluate the initial concept of the installation. The primary objective of these tests was to validate the core concept and assess the clarity of the interaction between the physical or digital interface and the displayed content. The full testing protocol for the pilot tests is provided in Appendix A.1.

Participants

A total of five participants took part in the pilot tests. They were selected through convenience sampling from the designer's immediate social networks, without taking into account gender or level of sports interest. This approach was chosen due to the high degree of accessibility. Although the sample was drawn from personal contacts, these individuals were selected as representatives of the general museum-going public. Because the sample was not randomized, the findings should be interpreted as indicative of the visitor experience rather than a definitive profile of museum-visitors.

Ethical Considerations

Ethical guidelines were strictly followed to ensure participant safety and data integrity: Participation was entirely voluntary, and participants were informed of their right

to withdraw at any time. No personal data was collected during the sessions. All observations and feedback were documented anonymously.

Setup and Procedure

The tests utilized a mixed-device setup consisting of a mobile interface for the "spinning wheel" and a computer screen for the primary content delivery. The procedure followed a standardized protocol:

Introduction: Participants were briefed on the voluntary nature of the test without over-explaining the installation to avoid bias.

Interaction: Participants used a mobile device to interact with the wheel while a synchronized slideshow (via Google Drive) updated on a nearby computer screen based on the wheel's results.

Thinking Aloud: Users were encouraged to verbalize their thoughts during the process to provide insight into their cognitive experience.

Observation Criteria

Specific behaviors were monitored, including body language, points of hesitation, and whether the participant's focus remained on the wheel or the screen.

Data Collection

Data collection was conducted through semi-structured interviews carried out immediately after participants had interacted with the prototype. The interviews aimed to capture participants' experiences, interpretations, and reflections regarding both the interaction itself and the communicated historical content. Conducting the interviews directly, following the interaction allowed participants to reflect on the experience while their impressions and reactions remained immediate and contextually grounded.

The semi-structured interview format was chosen in order to balance consistency across participants with the flexibility to explore unexpected insights and individual perspectives in greater depth. While a predefined set of themes and evaluative questions guided the interviews, participants were encouraged to elaborate on their experiences and discuss aspects they found particularly engaging, unclear, or memorable.

The interviews focused specifically on several key areas related to the installation's interaction design and communicative qualities. Particular attention was directed toward how participants perceived the relationship between the tangible interaction (spinning the wheel) and the resulting digital output presented on the screen. The interviews also explored participants' understanding of the installation's overall narrative, thematic framing, and intended message concerning women's sports history.

In addition, the interviews examined motivational and experiential aspects of the interaction, including whether the installation encouraged curiosity, engagement, and a desire to continue exploring the content through repeated interaction. Questions additionally addressed participants' interpretations of the installation's purpose, the clarity of the interaction flow, and their overall emotional and cognitive response to the experience.

The collected material from the pilot testing was intended to inform subsequent design iterations by identifying strengths, shortcomings, and areas requiring refinement. Insights gathered through the interviews contributed to adjustments concerning interaction clarity, content structure, visual communication, and the overall pedagogical and experiential qualities of the installation.

Due to the exploratory and low-fidelity nature of the pilot tests, the interview data was documented through written notes rather than audio recordings or full transcriptions. Observation notes and written participant responses were subsequently used as the basis for thematic analysis.

Data analysis

The material collected during the pilot user testing was analyzed using thematic analysis following the framework proposed by Braun and Clarke [46]. Observation notes and participant comments were reviewed repeatedly in order to identify recurring patterns related to usability, engagement, confusion, and motivation.

During the coding process, particular attention was given to participants' reactions to the interaction flow, the clarity of instructions, the relationship between the spinning wheel and the screen content, and how participants interpreted the conceptual framing of the installation. The resulting themes informed the early iterative design process by highlighting both strengths and shortcomings within the initial low-fidelity prototype. The analysis therefore functioned as a foundation for identifying necessary adjustments and guiding subsequent design iterations.

3.3.2 Mid-Fidelity User Testing

To evaluate the interaction design and the emotional resonance of the narrative, a series of mid-fidelity user tests and semi-structured interviews were conducted. The full testing protocol for the mid-fidelity tests is provided in Appendix A.2.

Participants

The participants for these tests were selected with the intention of approximating a broad spectrum of potential museum visitors rather than targeting a highly specialized user group. To support this, individuals with varying backgrounds, levels of familiarity with museums, and differing levels of prior knowledge regarding women's sports history were included in the study. This approach was intended to generate insights into how the installation might be experienced and interpreted by a more general museum audience, reflecting the diverse perspectives and expectations typically present within public museum environments.

Ethical Considerations

Prior to the commencement of each session, participants were informed of their rights following standard ethical research protocols. It was explicitly stated that:

- Participation was entirely voluntary.
- No personal data would be collected or stored.
- Participants had the right to withdraw at any time without providing a reason.

- All documentation and subsequent analysis would be conducted anonymously.

Setup and Procedure

The test was designed to simulate the "museum moment" using a hybrid setup consisting of a physical wheel prototype and a digital Figma slideshow. The procedure were as follows:

Contextual Briefing: Participants were given a brief introduction to the project's theme: the history of women's sports with a specific focus on the 1926 Women's Olympics.

Pre-Interaction Reflection: Before engaging with the wheel, participants were shown the introductory text on a screen. They were asked to reflect on their initial thoughts and emotional responses to the framing of the "visibility gap."

Physical-Digital Interaction: Participants were introduced to the physical wheel. Following a "Think-Aloud" protocol, they were encouraged to vocalize their thoughts as they performed the physical act of spinning the wheel.

Content Exposure: Based on the interaction, the researcher manually triggered the digital slides in Figma that corresponded to the specific category the wheel stopped on, simulating the automated system of the final artifact."

Observation Criteria

During the interaction, the researcher performed non-participant observations, focusing on behavioral patterns such as:

Interaction Mechanics: How did they spin? (Fast, slow, or cautious).

Repetition and Engagement: Did they spin the wheel multiple times? How long did they spend absorbing the content before re-engaging?

Data Collection

Following the participants interaction with the wheel, semi-structured interviews were conducted to capture deep qualitative data.

The questions were categorized into four thematic areas:

Emotional impact: Investigating if and how the participants' feelings shifted before, during, and after the physical act of spinning.

Content comprehension: Evaluating the clarity of the information, whether the amount of text was appropriate, and if the "surprising" nature of the historical facts led to new knowledge.

Critical reflection: Assessing if the installation succeeded in making the participant think differently about whose stories are told in sports history.

The physical-digital Link: Specifically questioning the perceived connection between the physical effort of the spin and the subsequent intake of digital information.

Data analysis

The mid-fidelity user testing was analysed through thematic analysis in order to examine how participants experienced the more developed prototype and its interactive,

visual, and narrative qualities. Compared to the pilot tests, the mid-fidelity prototype enabled a more detailed exploration of visitor engagement, content interpretation, emotional responses, and interaction patterns.

The collected material, consisting of observation notes, interview responses, and participant reflections, was coded iteratively with a focus on identifying recurring themes connected to interaction design, content presentation, engagement, reflection, and experiential qualities. Particular attention was directed toward how participants interacted with the tangible interface, how they navigated and interpreted the content, and whether the installation encouraged curiosity, discussion, or critical reflection regarding women's sports history.

The thematic analysis enabled patterns across participant experiences to be identified and interpreted in relation to the study's research question. The resulting themes were used to evaluate the effectiveness of the design decisions and to identify key factors contributing to meaningful and reflective museum interactions.

3.4 Participatory Design Workshops

In line with the Participatory Design approach [41], participatory co-design workshops were conducted with the objective to inform the design.

3.4.1 Workshop 1

Workshop 1 had a generative focus, meaning that the main aim was mainly to generate categories or sections for the spinning wheel. The objective of the workshop was to transition from abstract feminist critiques of sports history to concrete design qualities for the spinning-wheel installation. By employing participatory design, the study aimed to democratize the design process, ensuring that the "invisible" narratives prioritized by the participants directly informed the installation's information architecture.

Participants

Five participants took part in the workshop, of which two are interaction designers and three are active athletes. The decision to include participants with diverse backgrounds was informed by methodological recommendations presented by Bødker et al. [41]. All participants were selected through convenience sampling due to the high degree of accessibility.

The participants were exclusively women as a deliberate feminist methodological decision. This choice is grounded in the project's focus on the historical marginalization and underrepresentation of women's sports experiences within both sporting culture and museum narratives. From a feminist design perspective, participatory settings are never neutral; mixed-gender group compositions may risk reproducing existing power asymmetries that shape whose voices are heard, legitimized, or centered. In such contexts, there is a risk that women may take up less space, moderate their contributions, or that discussions become indirectly shaped by dominant (often male-coded) perspectives.

An all-women workshop setting is intended to create a safer and more enabling space for discussing experiences of invisibility, exclusion, and structural inequality. It reduces the likelihood that interaction dynamics are influenced by gendered authority relations and allows participants to engage more freely with sensitive or politically charged topics. This structure is therefore not about exclusion for its own sake, but about methodological focus: strengthening the conditions for situated knowledge, amplifying historically marginalized perspectives, and ensuring that feminist commitments to voice, representation, and narrative authority are materially enacted within the research process.

Workshop Structure and Procedure

The 60 minutes long workshop was held digitally, with Microsoft Teams and Figma's Figjam as facilitating tools. It was structured into five distinct phases, moving from thematic exploration to functional conceptualization. First, the participants performed an individual brainstorm to identify marginalized themes in women's sports. They were asked to write down on sticky notes what they personally think should be given more attention regarding women's sports and women's sports history. After a while, they were asked to collaboratively categorize all sticky notes into themes and to name the themes.

For the next phase participants were given cards with stories on women's sports history that they were asked to rank based on their perceived urgency for museum visibility.

This phase was followed by a prototyping phase where participants mapped the prioritized themes onto a low-fidelity model of the spinning wheel.

Finally, a selection of color palettes was evaluated to determine which visual identities best communicated the overall theme.

A full version of the script used for the workshop structure is provided in Appendix A.4, complementing the description in this section.

Ethical Considerations

Strict ethical protocols were followed. Before the workshop took place, participants had provided informed consent of their participation, audio recording and data anonymization. They were given the option to have their name published. The full questionnaire used as a consent form for participation in the workshops is provided in Appendix A.3.

Data Collection

Data was audio recorded and some comments written down. The Figjam board also served as a mean for data collection.

Data Analysis

The first workshop was analyzed using thematic analysis in order to explore participants' initial perceptions, associations, and ideas related to women's sports history, museum experiences, and potential interaction concepts for the installation. Since the workshop was conducted within a participatory design framework, the analysis focused not only on verbal discussions but also on sketches, written notes, and

collaborative activities produced during the session.

The workshop data was reviewed iteratively to identify recurring patterns in how participants discussed engagement, accessibility, emotional resonance, and ways of communicating historical content within a museum context. Initial coding focused on expressions related to interest, relevance, interpretation of historical narratives, and preferred modes of interaction. Particular attention was also given to how participants framed opportunities and challenges in making women's sports history more visible and engaging for a broad audience.

The coded material was subsequently grouped into broader themes that reflected shared perspectives and emerging design directions. These themes not only informed early design requirements, but also directly contributed to the development of the categorization system used in the spinning wheel concept. In particular, the thematic clustering process resulted in the identification of the initial content categories that were later implemented as interaction options within the wheel interface.

In this way, the workshop functioned both as an exploratory design activity and as a direct input to the structuring of the installation's interactive content, bridging participant insights with concrete design decisions in the subsequent prototype iterations.

3.4.2 Workshop 2

Workshop 2 focused on the content of the screen and the enhancing of the experience as a whole by shaping the atmosphere. In contrast to the previous workshop, which primarily explored what information should be communicated, this workshop shifted the focus toward how the content is experienced, interpreted, and emotionally framed by visitors.

The aim of the workshop was to identify design qualities that move beyond purely informational delivery and instead actively encourage critical reflection and engagement. A central objective was to explore how visual, narrative, and atmospheric elements could be used to influence the emotional tone of the installation and support deeper interpretative engagement with women's sports history.

Rather than focusing solely on clarity or usability, the workshop foregrounded experiential dimensions such as atmosphere, emotional response, and interpretive openness. This included investigating how different forms of visualization, textual framing, and thematic composition might shape the visitor's understanding and emotional engagement with the content. The workshop therefore functioned as a transition from content definition to experience design, moving from what is communicated to how it is communicated and felt.

Participants

To support a multi-faceted analysis of the experience, participants were selected based on their diverse backgrounds and areas of expertise. This approach was guided by the intention to include multiple perspectives on interpretation, communication, and user experience rather than relying on a single homogeneous user group. In

total, three participants took part in the workshop, all female as argued for earlier:

One professional communicator, contributing expertise in message structure, narrative clarity, and visual communication strategies.

One regular museum visitor, representing the target audience perspective and providing insight into the intuitiveness and accessibility of the experience.

One athlete, offering a situated perspective on the representation of women in sports and the emotional and cultural relevance of the content.

Together, these participants provided a balance between expert knowledge, lived experience, and audience perspective, allowing the workshop to address both communicative effectiveness and experiential depth in the evaluation of design directions.

Workshop Structure and Procedure

The script underlying the workshop structure is presented in Appendix A.5, following is a complementing description of the structure and procedure.

The session began with a reflection on the project's core narrative to establish the foundational emotions the installation should evoke. A plain text was shown to the participants. They were asked to write down their thoughts and feelings that may have occurred from that text. The text subject for discussion is: "“An Olympic competition truly demands its man. Neither the psyche nor the physique of a woman are suited for such competitions.” - Erik Bergvall, manager of Stockholm Stadium (1928)".

A screen mockup of the The Body-category (Figure 4.8) was used as a probe to identify what was missing in the current visual delivery. The same text as before was placed in the mockup and the participants were asked to reflect on their thoughts and feelings, and to examine if they differed from before when they read the plain text.

Participants were then asked to step in to the role as designers. The concept of the wheel and its chance based nature was explained. To identify success factors, the group discussed design factors that would create the "worst possible" version of the screen. One that was boring and did not encourage reflection, thereby identifying the necessary elements.

Still situated in the role as designers, participants were asked to discuss: "If we only have 5 seconds to make a visitor want to know more, what do we show?" and place their thoughts on post-it notes.

The Deep Dive: Forward (Framåt): Discussed how to design for a positive and empowering experience, focusing on how interaction design can evoke feelings of strength and optimism. The aim was to consider how the installation could foster a sense of hope for the future and encourage visitors to feel empowered to contribute to change.

The Deep Dive: The Gaze (Blicken): Explored how to design for a provocative and critical experience, focusing on how interaction design can evoke a sense of being

observed or scrutinized. The aim was to investigate how the installation could create an unsettling or reflective atmosphere.

The Deep Dive: The Resistance (Motståndet): The final phase included discussions on how systemic oppression could be manifested through design took place. The aim was to investigate how interaction design could represent structures of resistance and exclusion, and how these dynamics might be expressed and experienced within the installation.

Ethical Considerations

Workshop number two followed the same strict ethical protocols as the workshop before. Again, the full questionnaire used as a consent form for participation in the workshops is provided in Appendix A.3.

Data Collection

The session was audio-recorded and the recording was transcribed to text, followed by a translation to English. The Figjam board and participants' digital post-it notes served as a mean for data collection as well.

Data Analysis

The second workshop was analyzed through thematic analysis with a stronger focus on evaluating and refining emerging design concepts and interaction qualities. Building upon insights generated during earlier stages of the project, the workshop aimed to explore participants' responses to more developed ideas, content structures, and experiential elements within the installation.

The analysis focused on identifying recurring patterns related to participant engagement, interpretation, emotional reactions, and reflections concerning both the interaction and the historical content. Special attention was directed toward discussions surrounding narrative framing and the balance between informative and experiential elements within the installation.

Through iterative coding and thematic clustering, the analysis generated themes related to visitor curiosity, participation, interpretative openness, and critical engagement. These themes were subsequently used to evaluate and refine the installation's design direction and to identify key experiential and interaction-related factors relevant to the study's research question.

4

Results and Data Analysis

This section presents the results of the design process, including the rationale behind central design decisions. It first outlines the progression from early concepts and prototypes to the final installation, followed by a detailed description of the completed design. Because this study follows a Research through Design approach, the results are integrated throughout the iterative design process rather than presented solely as a final outcome. Finally, the section answers the research question by presenting the identified key factors for designing an interactive museum installation that addresses the visibility gap in women's sports history and encourages visitor reflection.

4.1 Design Process and Rationale

The design process was conducted iteratively through successive phases of concept development, prototyping, participatory workshops, and user testing. The process began with concept ideation, followed by the development of a low-fidelity prototype and initial pilot testing. Insights from this stage informed Participatory Design Workshop 1 and the subsequent mid-fidelity prototype, which was further evaluated through user testing. Finally, Participatory Design Workshop 2 focused on refining the experiential and visual qualities of the installation, leading to the development of the High-Fidelity prototype and final installation.

4.1.1 Initial Concept and Development of Concept

From the early stages of the project, discussions within the design team emphasized the importance of creating an installation that minimized waiting times and allowed multiple visitors to engage with the experience simultaneously. This ambition informed the initial ideation process and guided the development of the project's first conceptual direction.

The initial concept included a tangible rotating wheel that functions as the primary interactive component of the installation. The wheel displayed the names of participating countries from the 1926 Women's Games, and visitors would interact with the exhibit by physically spinning it. This tactile interaction was intended to create an intuitive and engaging point of entry into the historical material, while also introducing a playful and exploratory element to the museum experience. The playful interaction should not be understood as a shift away from the serious content, but

as a strategically designed entry point that allows complex and potentially difficult historical narratives to become more accessible for reflection.

When the wheel would stop on a selected country, an adjacent screen would activate and present information related to that nation's participation in the games. The displayed content was envisioned to include participating sports disciplines, the number of athletes competing within each discipline, and contextual information concerning societal attitudes toward women's sports at the time. Different forms of visual representation were explored in order to communicate this information effectively, including bar charts, athlete icons representing participation numbers, and illuminated silhouettes that would gradually light up to visualize the scale of participation.

Alongside statistical information, the concept incorporated archival material connected to the selected country. This included historical press quotations, training photographs, images from athlete parades and entrances, action photographs of competitors, group portraits, and reproductions of posters or newspaper pages. The intention was to combine quantitative information with more experiential and narrative-driven material in order to contextualize the historical events and strengthen visitors' connection to the content.

Auditory interaction was also considered as a component of the experience. As the wheel slowed down, a subtle mechanical clicking sound would reinforce the tactile nature of the interaction and contribute to a satisfying physical experience. Once a country had been selected, short audio clips could be played, such as fragments of national anthems or archival crowd sounds from 1926. Variations in the soundscape were additionally discussed, for example through quieter audio cues for countries represented by smaller delegations.

As the design process progressed, limitations of the initial concept became increasingly apparent. Although the rotating wheel provided a clear and intuitive interaction, the installation risked becoming overly focused on the communication of factual information, such as participation statistics and country-specific data. While informative, this structure offered limited opportunities for deeper engagement, emotional connection, and critical reflection.

In addition, feedback from the client raised concerns regarding the narrow thematic framing of the concept. By centering the interaction primarily around countries and participation statistics, the installation risked overlooking broader historical, cultural, and societal dimensions of the 1926 Women's Games. Concerns were also raised regarding the availability and depth of historical material if the experience relied too heavily on detailed country-specific data.

These reflections led to a reconsideration of the overall design direction. Rather than focusing primarily on informational presentation, the concept development phase shifted toward creating a more interpretive and exploratory experience. A central ambition became to encourage curiosity and active exploration by introducing elements of unexpectedness and discovery, reinforcing the gamified nature of a lucky wheel. This allow visitors to navigate the historical material in a less predetermined

manner and aligns with the design implications of Sharp. et al., that emphasize designing for exploration when designing for learning [24].

To support this process, affinity diagramming was used as a method for organizing and interpreting collected historical material, insights, and ideas. Facts and historical elements considered particularly compelling or thought-provoking were grouped into thematic clusters in order to identify patterns, relationships, and potential narrative directions. Through this process, several thematic categories emerged as possible entry points for interaction, including *Fun Facts*, *Contestants*, *Countries*, *The Resistance*, and *Behind the Scenes*.

The emergence of these categories marked a significant shift from the original data-driven structure toward a more multidimensional narrative framework. While categories such as *Countries* retained elements of the initial concept, categories like *The Resistance* and *Behind the Scenes* introduced perspectives related to societal opposition, gender norms, and lesser-known stories surrounding the games. This expanded structure enabled the installation to move beyond communicating what happened during the 1926 Women’s Games and instead explore why these events were historically significant and how they were shaped by broader cultural and societal contexts. These initial categories were subsequently revised as part of an iterative design process informed by both theoretical considerations and participatory input to better balance clarity, interpretative openness, and alignment with the project’s aim. The final set of categories is presented and described in more detail in a later segment.

4.1.2 Prototyping the First Low-Fidelity Version

The first low-fidelity prototype was developed to explore the relationship between the tangible interaction and the digital content presentation. The prototype consisted of a mobile-based spinning wheel interface (4.1) paired with a Google Presentation (4.2) that provisionally functioned as the installation screen, where each slide represented one thematic category. This setup allowed the interaction flow and content structure to be tested without requiring a functional technical implementation.

The purpose of the prototype was primarily exploratory. Rather than evaluating visual polish or technical precision, the prototype was used to investigate how participants understood the interaction, navigated the content, and interpreted the overall purpose of the installation. The low-fidelity format also enabled rapid iteration and modifications based on participant feedback.

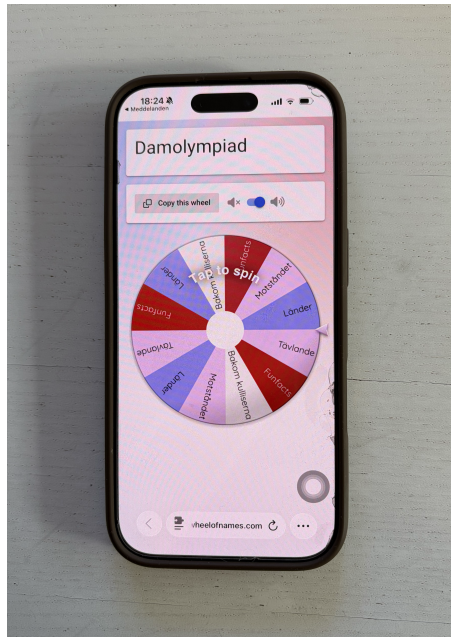


Figure 4.1: Mobile-Based Low-Fidelity Wheel

Motståndet



Vid Damolympiaden i Göteborg 1926 var det tydligt att männen fortfarande styrde villkoren för idrotten – även kvinnors idrott. Trots att kvinnorna visade prov på stor skicklighet och uthållighet, var tävlingarna noggrant reglerade, organiserade och kommenterade av manliga ledare, tränare och journalister. Beslut om vilka grenar som skulle tillåtas, hur lång löpning som ansågs ”lämplig” för kvinnor, och hur prestationerna skulle rapporteras i pressen låg helt i männens händer. Även den tidens hyllade framgångar för kvinnliga friidrottare möttes ofta av misstänksamhet eller överdrivna varningar om deras fysiska begränsningar, vilket visar hur starkt patriarkala strukturer fortfarande präglade möjligheterna för kvinnor inom idrotten.

Figure 4.2: Google Presentation of the Category The Resistance (Motståndet)

4.1.2.1 Pilot Testing

Pilot testing was conducted to evaluate the initial interaction flow, usability, and clarity of the concept. Overall, participants quickly understood the relationship between the spinning wheel and the corresponding screen content, indicating that the connection between the physical interaction and the digital response was relatively intuitive.

However, several usability-related issues emerged during testing. One participant expressed uncertainty regarding the “Tap to spin” instruction on the mobile interface, suggesting that the interaction cue lacked sufficient clarity. One participant also

experienced frustration due to a perceived delay between the wheel interaction and the screen update, expressing that: "The delay makes you a little tired and you want to move on to something else. Did I do something wrong or is there something wrong with the program?". Since the prototype relied on manually coordinated transitions within the Google Presentation, a slight delay naturally occurred between the physical interaction and the visual response. Despite being a technical limitation of the prototype itself, the delay negatively affected the perceived responsiveness of the interaction and led the participants to question whether they had interacted incorrectly.

The pilot tests also revealed differences in attentional focus among the participants. Two participants primarily focused on the screen content, while two participants directed more attention toward the wheel itself and one participant continuously shifted focus between the two elements. This highlighted the importance of considering how attention is distributed within an interactive museum installation that combines physical and digital components.

In relation to content and interpretation, a recurring issue concerned the participants' understanding of the installation's overall purpose. Several participants expressed uncertainty regarding why they were interacting with the wheel and what the intended takeaway of the experience was.

The thematic categories and content were generally perceived as interesting; however, repeated appearances of the same category created frustration and contributed to a sense of repetitiveness. This repetition negatively affected the perceived variation and discovery within the interaction.

Motivation to continue interacting with the installation varied depending on participants' level of understanding and engagement with the concept. Participants who were curious about the historical material and interested in exploring additional content expressed a willingness to continue spinning the wheel. In contrast, participants who struggled to understand the installation's purpose demonstrated lower motivation to continue interacting with it. The latter suggests that it is important for users to rapidly comprehend the context for the installation to successfully engage users.

Suggested Design Measures

Based on the pilot testing, several potential design improvements were identified. One important consideration involved providing clearer contextual framing for the installation. Introducing a short explanation or introductory element was discussed as a way to communicate the purpose and intended experience more effectively to visitors.

Adjustments to the wheel itself were also proposed. Reducing the number of fields and categories on the wheel was considered necessary in order to minimize repetitive outcomes and create a more varied interaction experience. Participants additionally suggested using fewer but visually larger fields to improve readability and reduce the likelihood of repeatedly landing on the same category.

Technical responsiveness was identified as another important aspect requiring improvement. Although the delay between the wheel and screen was primarily caused

by the low-fidelity nature of the prototype, the tests demonstrated the importance of minimizing latency between physical interaction and digital feedback in the final installation. This aligns with Norman’s emphasize on that feedback must be immediate, to minimize the risk that the user stops the interaction [25].

Finally, visual aspects of the interface were reconsidered. Alternative color palettes were explored, and the clarity of the “Tap to spin” instruction was reviewed in response to participant feedback.

Design Modifications

Following the pilot tests, several of the suggested design measures were implemented. The number of sections on the wheel was reduced so that each category appeared only once, decreasing repetition and supporting a greater sense of variation and discovery during interaction. In addition, multiple alternative color palettes were produced and evaluated as part of the ongoing visual development process.

No direct changes were made regarding the contextual framing of the installation at this stage. Since the prototype primarily aimed to explore interaction flow and conceptual structure rather than represent a finalized exhibition experience, it was considered too early in the design process to introduce a fully developed narrative introduction. Nevertheless, the identified need for clearer contextual communication remained an important consideration in later design iterations.

Similarly, no immediate modifications were made to the “Tap to spin” instruction. As the instruction functioned as a constant interface element within the prototype, the issue was instead documented and carried forward as a consideration for future refinements of the interaction design.

4.1.3 Participatory Design Workshop 1

Workshop 1 had as previously mentioned a generative focus, with the main objective to generate categories. Following is a presentation of the outputs, as described by Bødker et al. as immediate results directly linked to the workshop activities, and the outcomes, that is what it means for the design process [41].

4.1.3.1 Outputs

Together, the following outputs form a participant-informed foundation for the installation’s content, structure, interaction design, and visual expression, with particular relevance to how visibility and reflection can be supported in the final design.

The participants contributed with a broad set of reflections on what aspects of women’s sports and its history are currently underrepresented. These reflections were documented individually (They were asked to individually write down on sticky notes what they personally think should be given more attention regarding women’s sports and women’s sports history.) and subsequently organized into collaboratively defined thematic categories. The emerged categories emphasize the participants’ perspectives on how women’s sports history can be more visibly and meaningfully structured.

From this sequence of the workshop, three themes emerged: *Norms and Attitudes*, focusing on the way women athletes are perceived, second *Attention*, regarding women's sports gaining less attention than men's sports, and third *Male-focus*, about the way research is centered around male bodies and the salary differences, favoring the male athletes. Presented below is what was written on the post-it notes and to which category it was assigned.

Norms and Attitudes:

"How much we have actually had to fight to get here today! Not many people assume that the road was easy, but it can be easy to forget. Keep history close at hand."

"It can be easy to forget sometimes if you are not very involved, that women still fight a lot today, even though a lot has changed and become better, but it needs to be even better."

"How differently men and women have been treated, but what it also still looks like."

"Women who give birth to children "should" be at home with them and can therefore be excluded, while men who have children are expected to put their sports first."

Attention:

"Generally to be seen and take as much space as male sports."

"To be seen more in the media, for example. Sports research should be done as much as on men. Fighting spirit and respect should be given more attention. That we cannot be treated in any way (for example, the incident with the American hockey team and Trump). It reflects an unfair treatment towards us women in sports."

"That women's sports do not receive as much attention as men's sports and are not considered to be as "entertaining". Media coverage is significantly lower, there are not as many large events, etc."

"As a female athlete, you are often met with a somewhat unkind attitude and are not always taken seriously, and people can be somewhat condescending."

Male-focus:

"That sports have always been based on men and their bodies, and that things that usually concern women, such as menstruation and the like, are taboo to talk about or adapt to."

"That there is generally more research on the male body and that it affects, for example, injury rehabilitation and training plans when it comes to women's health."

"The large wage differences, it is much more difficult for women to be able to live on their salary from their sports."

"A large part is also about resource allocation, to even out the gap a little."

"That female achievements should be celebrated and be worth just as much as male ones."

Following, a prioritization of historical content was established. Through a ranking exercise, participants evaluated different historical events based on perceived relevance,

4. Results and Data Analysis

engagement, and interest. This activity provided an indication of which stories may be most effective in capturing attention and fostering engagement among museum visitors.

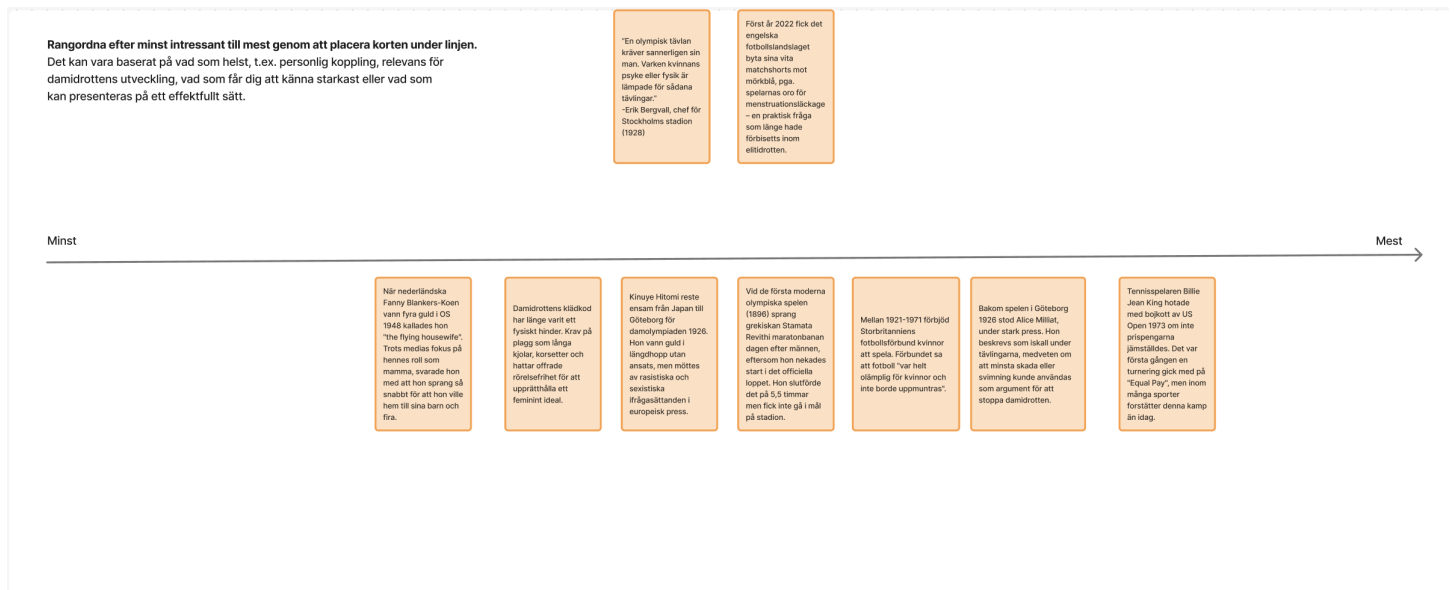


Figure 4.3: Workshop 1, Ranking Exercise

The card that in the end placed as the most interesting had the text: "Tennis player Billie Jean King threatened to boycott the 1973 US Open unless prize money was equalized. It was the first time a tournament agreed to "Equal Pay," but in many sports, this struggle continues to this day.". The motivation for placing it first was that it probably had a strong ripple effect. One participant expressed: "Equal pay, it was still early when she did that, I now see. It was probably a driving force. Or rather, it gave other women in sports a mandate to actually make some demands." , whereupon another participant asserted: "And it's relatively close in time too." . The discussion continued with: "But also threatening a boycott, that's a pretty big thing to do. She has played her sports and still dared to take that chance. In this case, maybe mainly for female tennis players, but it did create ripples in the water."

Placed the second was the card with the text: "Behind the games in Gothenburg in 1926 was Alice Milliat, under strong pressure. She was described as ice-cold during the competitions, aware that the slightest injury or fainting could be used as an argument to stop women's sports."

Third on the scale was: "Between 1921 and 1971, the Football Association of Great Britain banned women from playing. The association said that football was "completely unsuitable for women and should not be encouraged". It was expressed: "That very thing, that football was banned. It has led to women's football not being as far ahead as men's football. And that really set it back enormously. And only now is women's football starting to catch up, at least in England and other countries. Still quite neglected in Sweden. And I can only imagine what it would have been like if women had been able to continue playing football and not been banned. What

the wage gap would have been like, what the interest would have been like. It is moving forward, but it is going so incredibly slowly.", about it.

Fourth: "At the first modern Olympic Games (1896), Greek athlete Stamata Revithi ran the marathon course the day after the men, as she was denied entry into the official race. She completed it in 5.5 hours but was not allowed to cross the finish line at the stadium."

Fifth: "Kinue Hitomi traveled alone from Japan to Gothenburg for the 1926 Women's Olympiad. She won gold in the standing long jump, but was met with racist and sexist scrutiny in the European press.". This was placed as less interesting, since it was not surprising that there was racism and sexism at that time. One participant noted: "I mean in some way it's not that surprising that there was racism and sexism in 1926." .

Sixth: "The dress code in women's sports has long been a physical barrier. Requirements for garments like long skirts, corsets, and hats sacrificed freedom of movement to uphold a feminine ideal.". Participants reflected on the tension between functionality and expectations of femininity, arguing that athletic clothing should primarily support performance rather than conform to aesthetic standards or the male gaze.

Seventh and last: "When Dutch Fanny Blankers-Koen won four gold medals in the 1948 Olympics, she was called "the flying housewife". Despite the media's focus on her role as a mother, she responded by saying she ran so fast because she wanted to get home to her children and celebrate.".

The last two cards that can be seen over the ranking line in 4.3 were excluded from the discussion to keep the time frame for the workshop.

As a third step of the workshop, participants contributed to the conceptual design of the interactive installation. Building on the "wheel of fortune" concept, they proposed thematic categories to be represented in the installation, types of content to be displayed (e.g., narratives, facts, media) and approaches to encourage visitor reflection and critical engagement.

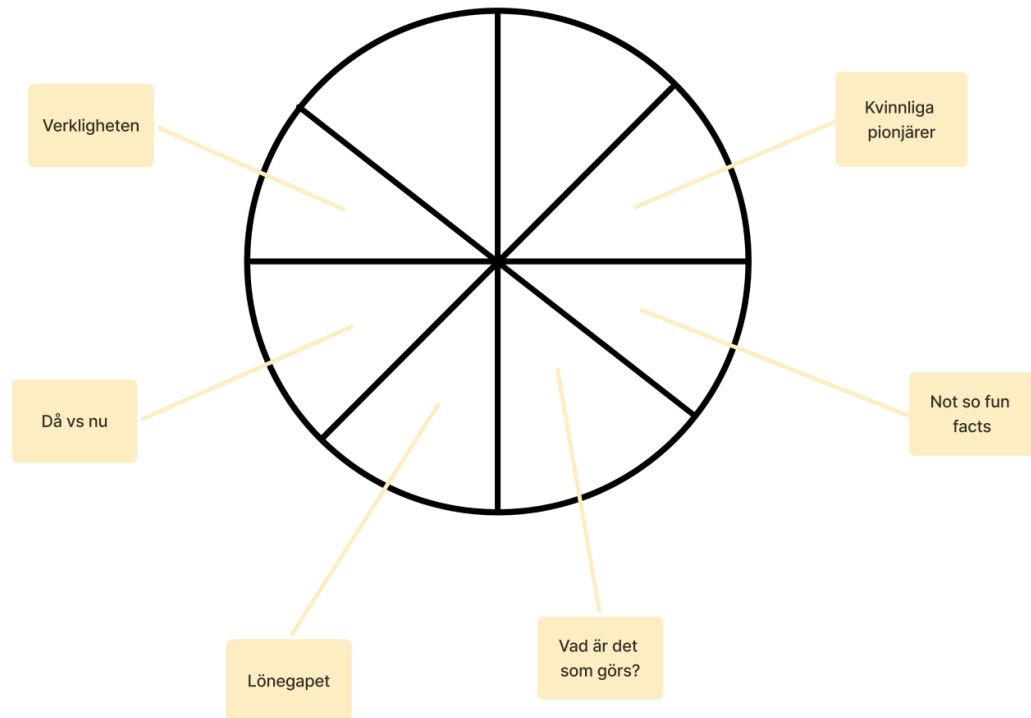


Figure 4.4: Workshop 1, Suggested Categories for the Wheel

The suggested categories, visible in Figure 4.4 were: Female pioneers (Kvinnliga pionjärer), Not so fun facts, What is being done? (Vad är det som görs?), The pay gap (Lönegapet), Then vs Now (Då vs nu) and The reality (Verkligheten).

Suggested types of content:

Participants suggested that the installation should support multiple content modalities, particularly film, image, and text. Moving image was generally preferred when available, as it was perceived as more engaging, while static images and text were considered appropriate alternatives when video material was not accessible. This indicates a preference for flexible multimodal content delivery, where the format adapts to the type of material available.

Suggested approaches to encourage visitor reflection and critical engagement:

Participants suggested several approaches to encourage reflection and critical engagement, including the use of attention-grabbing newspaper-style headlines and concrete references. These strategies were perceived as ways to make the content more accessible while still prompting interest and engagement.

In addition, several participants emphasized the importance of presenting content in an unembellished manner. As one participant stated, “You shouldn’t be too kind,” while another noted that one should not “sugarcoat reality, or history for that matter.”.

As a final step of the workshop participants selected visual directions by voting on color palettes they perceived as appropriate for communicating the theme of women’s sports history. While some relied on intuition for their voting, others had more reasoning behind:

"Now I’m going to reason a little out loud. Because if you think like this, oh it’s a lot about women. And then you think, oh pink. But you might want to move away from that a little. And use a little darker colors to actually give some kind of seriousness. And not only like, hey, here’s some girl history, some girl facts.".

"My thought was pretty much that I’m thinking of having a palette that’s not too happy and bright because it’s not such a happy and bright subject." ... "I was thinking about this really dark, boring one for a while, just because it’s supposed to symbolize that we have a somber background behind us. At the same time, I don’t think it’s engaging. So then I think more about this one that is a bit colorful, there are engaging colors and such in it. But it’s not like the gladdest.".

"I probably agree with most of what has been said, that there is a lot that is darker and more somber but also that you get so much energy from all the inspiring stories. I also thought about the one on the left, the middle left, but I felt that the one on the right has this strong red and the slightly darker brown. Which has a little more energy or strength. The darker brown is much darker than the others. On the one hand, you have the dark stories but also the strength that you take from them. And that you also have slightly brighter colors that are perhaps with hope for the future. So that’s why I went more towards the right instead of the left. It felt a little more... All the colors there felt a little kinder while this one had both.".

The dot voting results are presented in Figure 4.5.

Rösta på vilka färgkombinationer som känns mest passande.
Vilken färgpalett bär bäst fram det budskap vi har pratat om idag?

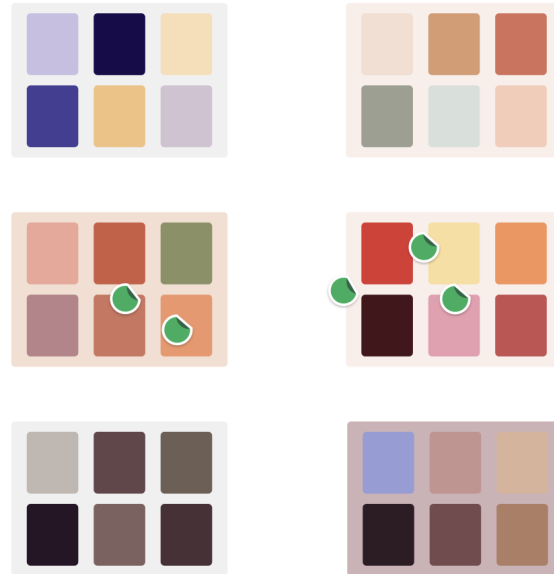


Figure 4.5: Workshop 1, Dot Voting on Color Palettes

4.1.3.2 Outcomes

The first participatory design workshop resulted in several concrete contributions to the design of the installation. Decisions were made on what categories to include, representing participant perspectives on how women’s sports history should be structured and communicated. Some of the suggested categories were directly incorporated, while others were framed a slightly differently, but still originated from the workshop discussions. All suggested categories are accounted for in the design.

As the installation responds to a context in which increased visibility of women’s sports does not necessarily result in structural change [11], the design aims not only to present women’s sports history, but also to highlight the persistence of gendered power relations within sports culture. The categories on the wheel act not only as navigational labels, but as thematic and interpretative frameworks that structure how the content is framed and perceived by visitors.

These eight thematic categories reflect both historical experiences and contemporary issues and form the basis for the installation’s narrative structure:

(1) Pioneers (“Pionjärerna”), focuses on individuals who broke new ground and challenged societal barriers, highlighting their contributions to future generations. This category was developed based on themes identified in the workshop discussions. The importance of pioneers in women’s sports was established early in the workshop discussions. Participants emphasized the foundational role these individuals have played in enabling the development of women’s sports, as well as the value of understanding their historical struggles. As one participant expressed: “Especially when you think about how far women’s sports have actually come, that it’s because

of female pioneers like these that sports have been practiced. And to then gain more understanding and insight into what it was like for them. To fight against headwinds like that” . This highlights the significance of foregrounding pioneering figures in the design, not only to acknowledge their contributions but also to support deeper reflection on the social and historical challenges they faced.

(2) Then / Now (“Då / Nu”), compares historical and contemporary conditions, emphasizing both progress and remaining inequalities. This category was developed based on themes identified in the workshop discussions, where participants explicitly suggested contrasting past and present perspectives. As one participant proposed, “You can also have it as then and now, something like that. This is how it was then, now it’s like this, something like that. Maybe then you can also see that, even though we’ve come a long way, we really haven’t come very far. Participants emphasized the potential of such comparisons to raise awareness, expressing that: “I think it can be really eye-opening” . Together, these insights suggest that structuring content through temporal contrasts can support critical reflection by enabling visitors to recognize both historical developments, the persistence of exclusion within women’s sports, and how they are interlinked.

(3) The Shadow Side (“Skuggsidan”), presents the negative and often overlooked aspects of women’s sports history, including sexism, marginalization, and forgotten narratives. This category evolved from the suggestions from participants of the categories "Not so fun facts" and "The reality". It was shaped around making visible the struggles and structural disadvantages that women athletes have faced. Participants reflected both on historical mistreatment and on how many inequalities remain present today despite social progress. This category was intended as a heavier and more emotionally charged theme, aimed at evoking feelings such as frustration, injustice, and anger in order to encourage critical reflection.

(4) The value (“Värdet”), addresses economic inequalities, lack of professionalism, and structural undervaluation of women’s sports. Participants highlighted issues such as wage disparities, unequal resource allocation, and the difficulty for women athletes to sustain themselves financially through sports. They also emphasized the importance of recognizing and valuing women’s athletic achievements on equal terms with men’s. This reflects the broader structural conditions within sports described by Hargreaves, where men’s sports has historically been prioritized socially, culturally, and economically, contributing to the systematic devaluation of women’s sports [2].

(5) The Gaze (“Blicken”), explores objectification and the influence of male norms on women athletes’ appearance and representation. This category emerged from discussions surrounding objectification and the influence of male norms on the appearance and representation of women athletes, particularly in relation to sports clothing. Contemporary examples, such as debates surrounding women’s beach volleyball uniforms, were highlighted as evidence that women athletes are still expected to “please the male gaze”. The category therefore became associated with ongoing structures of objectification and gendered representation within sports culture.

(6) The Resistance (“Motståndet”), highlights the historical periods marked by ex-

clusion, institutional bans, and active opposition to women's participation in sports. This category was added with the intention of provoking critical and emotional engagement. While the category itself did not directly emerge from the workshop discussions, participants' reactions strongly support its relevance. In particular, expressions of frustration highlighted how the history of women's sports is characterized by uneven and contradictory progress. As one participant reflected: "It's also about how we're always making small steps forward, but sometimes taking steps backwards. Like now we have a women's olympiad, but now we're going to be racist against athletes from other countries instead.". Participants also expressed empathetic frustration when reflecting on individual experiences of exclusion, for example: "Imagine how excited she must have been"...and then to be met with that." These responses suggest that emphasizing resistance within the installation can evoke affective engagement and encourage critical reflection on the structural barriers that have shaped women's sports.

(7) The Body ("Kroppen"), addresses myths, biases, and structural inequalities embedded in medical and scientific understandings of the female body in sports. This theme was strongly emphasized by participants during the workshop, who highlighted how gendered assumptions continue to shape both expectations and conditions for women in sports. Participants highlighted through their post-it notes and discussions how sports is often structured around male bodies and experiences, while aspects associated with women, such as menstruation, pregnancy, and motherhood, remain marginalized or insufficiently accommodated. In addition, concerns were raised about structural gaps in knowledge production. Participants pointed to the lack of research on women's bodies and its impact on areas such as injury rehabilitation and training practices.

The category, as well as The Gaze, further relates to how women athletes are represented and made visible within sports culture. As discussed by Hargreaves [2] and Cooky et al. [15], visibility is often shaped through conventional gender norms, where female athletes are associated with appearance and sexuality rather than athletic performance alone.

Together, these insights underscore the importance of addressing tangible inequalities, revealing how deeply rooted assumptions about the female body continue to influence women's sports.

(8) Forward ("Framåt"), focuses on progress, hope, and the overcome obstacles. Originates from the suggested category "What is being done" and the discussions on "power" and progress where participants expressed how they felt empowered and energized by the inspiring stories. A theoretical justification for this category is Isikgöz et al. emphasis on the transformative potential of visible and empowering role models [16].

Additionally, one participant perceived the "flying housewife", a more lighthearted card as interesting, and reacted with astonishment when reading it, suggesting that balancing heavier categories with lighter can enhance the experience.

By including categories as Forward and Pioneers is also thought to strengthen the

chance-mechanism, as these two categories could be considered a "win" in the lucky wheel.

4.1.4 Prototyping the Second Mid-Fidelity Version

The second iteration of the prototype included the physical wheel in combination with a screen-based interface. However, this version was not fully functional, but remained in a partially implemented state.

4.1.4.1 Wheel Design

The color palette for the wheel was informed by input gathered from participants during the first workshop. Rather than being determined solely by the design team, this decision emerged through a participatory process in which co-designers contributed their preferences, associations, and interpretations of different color schemes. This collaborative approach ensured that the visual design was not only aesthetically considered but also grounded in user perspectives, reflecting what potential visitors found engaging, meaningful, and appropriate for the subject matter.

Regarding typography, Brother 1816 Printed Black was the selected font due to its strong and noticeable characteristics, with the aim to draw attention to the categories on the wheel. Another reason for choosing this font is that it has a vintage aesthetic, which aligns with the historical context.

The use of both icons and text for category titles aims to balance clarity with engagement. While icons support fast recognition, text provides clear meaning. This helps to ensure that the category labels on the wheel are understood consistently. In addition to their functional role, icons also contribute to the visual and experiential quality of the installation. They have the potential to make the interface more engaging, approachable, and visually appealing, which can encourage exploration and lower the perceived barrier to interaction. This is particularly relevant in museum contexts, where encouraging curiosity and sustained attention is as important as efficient navigation. The combination of icons and text therefore supports both usability and a more inviting, playful visitor experience.

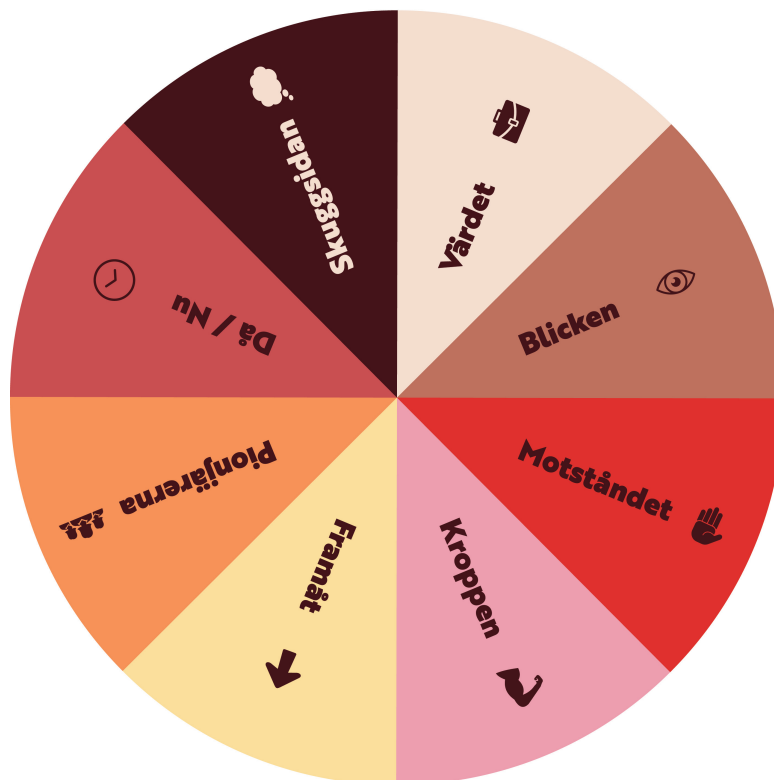


Figure 4.6: Digital Design of the Wheel

4.1.4.2 Screen Design

The background of the start screen had a neutral creme-white color and a text with a call for action: "Welcome to spin the lucky wheel". This text is intended to act as a signifier, as described by Norman [25]. The screen is illustrated in 4.7, which shows the initial visual layout of the interface.



Figure 4.7: Digital Design of the Start Screen

Each category screen was designed as filled from edge to edge with a picture that had a grainy noise texture effect to evoke a sense of historical and archival materiality. Where available, authentic archival photographs were incorporated in order to strengthen the connection to the historical context.

To reinforce the relationship between the screen content and the corresponding categories on the wheel, a consistent visual coding system was applied. Each image was overlaid with a low-opacity color aligned with the respective category color, complemented by an inner shadow effect using the same hue. The category title was prominently displayed on top of the composition to support immediate recognition and orientation within the interface.

In addition, a fact box containing textual information of varying lengths was positioned over the imagery. This element functioned as the primary carrier of descriptive and contextual information, creating a layered visual hierarchy between image, category identification, and informational content.



Figure 4.8: Digital Design of the category The body

Following are descriptions of the designed categories screens:

The Pioneers: A picture of Alice Milliat, a pioneer. A portrait of Alice Milliat, positioned as a central figure in the organization of the Women's Olympiad. Text: "Behind the 1926 Gothenburg Games stood Alice Milliat, under intense pressure. She was described as ice-cold during the competitions, aware that the slightest injury or fainting could be used as an argument to stop women's sports.". This category frames historical agency through the figure of a key organizer whose role is often marginalized in dominant sports histories. Rather than presenting progress as an abstract development, the screen foregrounds individual negotiation and institutional pressure, highlighting the precarious conditions under which women's sports was legitimized.

Then / Now: Half of the screen a picture from the Women's Olympiad in 1926, representing then and the other half of the screen a modern picture of women running. Text: "Then: In 1926, it was believed that sports could damage women's reproductive organs. Now: Today, we see that research on female athletes is still decades behind that of men.". This category constructs a temporal contrast that is not purely progressive but instead emphasizes continuity in structural inequality. By placing historical medical discourse alongside contemporary research disparities, the design problematizes linear narratives of progress and invites reflection on persistent epistemic gaps in knowledge production about female athletes.

The Shadow Side: A black-and-white image of a person reading a newspaper, representing media reception and public discourse. Text: "No valuable experiences have yet been gained, no dignified forms have existed for how women's sports should be conducted. When the film from the women's Olympics in Gothenburg was shown to the Stockholm audience at the 'Palladium', people laughed heartily at the whole

thing. Likewise, people went to the stadium more to witness a sensation, a circus spectacle, than to enjoy beautiful movements and harmonious body culture. (Charme, nr 18, 1926, p. 21)". This category exposes the role of media and public discourse in constructing women's sports as spectacle rather than legitimate athletic practice. The inclusion of explicitly evaluative and dismissive language highlights how cultural narratives contributed to de-legitimization and ridicule, reinforcing the marginal position of women athletes within early sports history.

The Value: An image showing athletes participating in the 1926 Women's Olympiad receiving recognition during a medal ceremony. Text: "The Swedish record holders were described as "office and factory girls" for whom sports were only seen as a healthy break from work, not a possible career.". This framing reveals how women's athletic achievements were often contextualized through domestic or labor-related identities, rather than recognized as professional or elite sporting performance. The category thus highlights how recognition was simultaneously granted and through gendered assumptions about work, class, and femininity.

The Gaze: A vintage photograph of male spectators observing off-frame subjects. Text: "Many comments were directed at the appearance of the female athletes. In Dagens Nyheter on 29 August 1926, there were sexualized descriptions and comments. The athletes were often called "girls", and individual participants were highlighted with detailed comments about their appearance. For example, Halina Konopacka, a Polish participant, was described as tall, slim and the "coquettishest lady" of the competition who engaged in stretching exercises that the journalist considered inappropriate.". This textual framing reveals how athletic performance was frequently secondary to aesthetic and sexualised evaluation, illustrating how visibility itself is structured through asymmetrical power relations.

The Resistance: A photograph of Sweden's national team competing in the Women's Olympiad 1926. Text: "The opposition to women's competitive sports was great during the 1920s. Critics argued that competition went against women's nature and could even be harmful to the body. It was also considered inappropriate for women to show physical exertion in public. Instead, activities such as gymnastics, swimming, and outdoor activities were promoted as more suitable for women.". This category situates women's sports within a broader ideological conflict over gender norms and bodily legitimacy. It highlights how institutional and cultural resistance shaped what forms of physical activity were considered acceptable, reinforcing hierarchical distinctions between "appropriate" and "inappropriate" female embodiment.

The Body: A woman running towards the finish line and men that are observing and assessing her. Text: "'An Olympic competition truly demands its man. Neither the psyche nor the physique of a woman are suited for such competitions.'" -Erik Bergvall, manager of Stockholm Stadium (1928)". This category highlights the tension between physical capability and cultural expectations of fragility. The textual material reflects contradictory perceptions of the female athletic body, simultaneously admired and constrained, revealing how bodily strength was both recognized and rhetorically contained within gendered frameworks. The digital design of this category is illustrated in Figure 4.8 .

Forward: A parade walking in Slottsskogsvallen during the Women's Olympiad in 1926. Text: "Dear sportswomen! We humbly surrender. Until now, we have viewed your sporting activities with skepticism and believed that the apron is a more beautiful ornament than some running pants. This attitude, ladies, belongs to the past since yesterday. Because we were at Vallen yesterday, and we came, we saw and we gave up!". This concluding category frames historical discourse as a performative shift in perception, yet the tone of the archival quotation is also marked by irony and rhetorical spectacle. The design positions this ambivalence as central: recognition is expressed, but through language that simultaneously reveals the fragility and performative nature of such acceptance.

4.1.4.3 User Testing

This version of the prototype was evaluated through user testing. The test revealed that regarding the interaction and engagement, the physical wheel was consistently perceived as a strong trigger for curiosity and initial interaction. Participants described the act of spinning the wheel as inherently inviting, with several responses indicating that the tangibility of the interaction contributed to an immediate willingness to engage with the installation. One participant expressed: "You want to spin. It's something you only see others do on TV.". This statement highlights how familiarity with similar interaction formats from mediated contexts (e.g., television or game shows) contributed to an intuitive understanding of the interaction, while also creating a sense of novelty in the museum setting. The physical enactment of a culturally recognizable interaction appears to lower the threshold for engagement by drawing on prior experiential references.

The distinction between physical and purely screen-based interaction was also emphasized by participants, who perceived the material component of the wheel as a key factor in sustaining interest. One participant noted: "There is a big difference between physical interaction and a digital wheel. It connects the physical and the digital. It wouldn't have been as interesting to just click on a screen.". This suggests that the hybrid nature of the interaction was experienced as more engaging than a purely graphical interface. The physical component appears to contribute a tangible dimension that enhances perceived involvement and presence within the interaction.

Following the interaction, several participants expressed a desire to continue exploring the installation, indicating a sustained level of engagement beyond the initial action. One participant described this as being: "eager to see more". This response indicates that the interaction did not only function as an entry point, but also as a mechanism for maintaining curiosity and encouraging further exploration of content.

In addition, two participants framed the interaction in relation to game-like structures, particularly those associated with chance and reward systems. This analogy contributed to an immediate motivation to engage with the installation: "A wheel triggers you to spin, like a lottery.". This comparison suggests that the interaction leverages familiar mechanics of anticipation and unpredictability, which in turn stimulate engagement. However, it also implies that the meaning of the interaction may initially be interpreted through playful or game-oriented frameworks, which can

influence how the installation is approached and understood in the first moments of interaction.

The interaction was generally described as both enjoyable and positively engaging. A recurring observation was that the mechanism of being assigned content through the wheel, rather than actively selecting it, contributed to increased interest and anticipation. Participants suggested that this element of chance introduced a layer of unpredictability that enhanced engagement with the content.

When asked whether the physical interaction of spinning the wheel influenced their experience of the content, participants consistently indicated that it had a positive effect: "Yes, for the better. If you had chosen words, you would have been a little less interested. Now you were assigned a word." and "Marginally better". These responses suggest that the perceived lack of control over selection shifted the interaction from a deliberate choice-based system to a more exploratory and serendipitous experience. This shift appears to have increased attentiveness, as participants were required to engage with the outcome rather than selecting familiar or preferred categories.

Connection to Content

In terms of content engagement, participants described a clear difference in how information was received compared to more conventional, self-directed forms of interaction. The wheel structure introduced an element of surprise that influenced how the material was interpreted and remembered. One participant noted: "A surprise element that makes you remember it better.". This suggests that the interaction design not only supports engagement but may also contribute to cognitive processing and retention by framing information as an unexpected outcome rather than anticipated content. The element of randomness appears to encourage users to reflect more actively on the meaning of each category, rather than passively consuming information.

Emotional Response and Historical Awareness

The installation succeeds in highlighting the gaps in historical writing by presenting information that the participants had not previously encountered.

The historical quotes evoke strong emotions such as frustration, anger and disappointment. Several participants react to how normalized sexist language was during the 1920s.

The historical quotations presented within the installation elicited strong emotional responses, including frustration, anger, and disappointment. Participants reacted particularly to the normalization of sexist language and attitudes in the 1920s, often expressing surprise at the explicitness of the discriminatory discourse. This indicates that the installation was successful in making historical inequalities perceptible in a direct and affective manner.

Several participants also indicated that, while they were already aware of gender inequality in historical sports contexts, the installation provided concrete and detailed examples of how these inequalities were articulated in practice. This shift from abstract awareness to specific historical articulation was perceived as significant, suggesting that the installation contributed to a deepened understanding of women's

sports history.

The category Forward was frequently highlighted as an important contrast within the overall experience. Participants described it as providing a lighter and more positive counterpoint to the otherwise emotionally heavy content, thereby creating a sense of narrative balance within the installation.

Visitor Reflection

The installation also appeared to stimulate reflective processes related both to historical conditions and contemporary sports culture. Participants reflected on the structural barriers faced by women in early sports history, particularly in relation to participation and the persistent focus on appearance over performance. This suggests that the installation supported not only historical learning but also critical reflection on gendered evaluation systems in sports.

Furthermore, several participants drew explicit parallels between historical conditions and present-day structures, suggesting that the installation reinforced the perception that inequalities in women's sports remain relevant today. In this sense, the experience functioned as a bridge between historical content and contemporary discourse, encouraging users to consider continuity rather than rupture.

The installation also prompted reflection on narrative authority and representation. Participants noted that the experience made visible how male-dominated sports histories have historically shaped dominant narratives, thereby marginalizing women's contributions. This indicates that the design succeeded in foregrounding issues of visibility and omission within historical storytelling.

Visual Design Feedback

In addition to interaction and content, participants provided positive feedback regarding the visual design of the installation. The aesthetic qualities were described by participants as following: "It looks very professional." and "Nice color palette". This suggests that the visual framing contributed positively to the perceived credibility and overall experience of the installation.

Suggested Design Measures

The tests revealed some clear areas that could be adjusted to optimize the experience. One of the biggest problem is that participants initially have difficulty understanding what the installation is about and what the purpose of the wheel is. Clearer signifiers are needed. Another problem that was noticed regards language barriers. Some words in the historical texts are perceived as complicated or difficult to understand, which creates a need for simplifications or explanations.

One participant expressed a desire for more than the text that was presented, one suggested a "read more" button.

Technical feedback: The wheel's spin speed was noted. One participant declared that the wheel "May spin for slightly too long". A suggested measure is to change wheel setting so that it spins for a shorter time before stopping.

4.1.5 Participatory Design Workshop 2

This section presents the results from Workshop 2, which focused on the development of the screen-based content and the overall experiential qualities of the installation. The workshop generated insights into how visual design, narrative framing, and atmospheric elements influence interpretation, emotional response, and critical engagement.

4.1.5.1 Outputs

From the first exercise, where the participants viewed a plain text without image, which is visible in Figure 4.9, following thoughts and emotions were written down by participants on digital post-it notes.

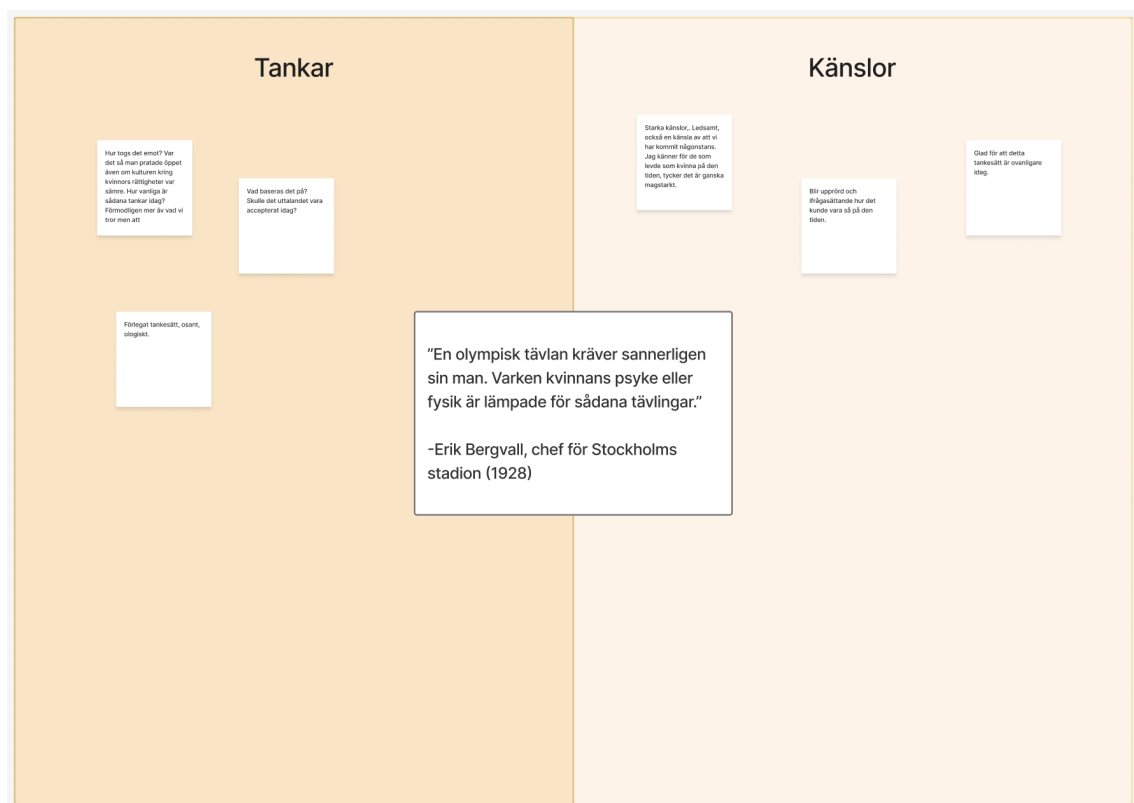


Figure 4.9: Workshop 2, Workspace Plain Text Discussion

Thoughts (post-its to the left in Figure 4.9):

"How was it received? Was that how people talked openly even if the culture around women's rights was worse. How common are such thoughts today? Probably more than we think."

"What is it based on? Would that statement be accepted today?"

"Outdated way of thinking, untrue, illogical."

Emotions (post-its to the right in Figure 4.9):

4. Results and Data Analysis

"Strong emotions. Sad, also a feeling that we have come somewhere. I feel for those who lived as women at that time, I think it is quite gut-wrenching."

"Becomes upset and questions how it could be like that at that time."

"Glad that this way of thinking is more uncommon today."

When the same text was introduced with a related image, seen in Figure 4.10, following thoughts and emotions occurred and was written down by the participants.



Figure 4.10: Workshop 2, Workspace Text+Image Discussion

Thoughts (post-its to the left in Figure 4.10):

"Seems very formal, why are they standing in line? Why are they so dressed up, it feels extremely controlling."

"Wondering what's going on in the picture?"

Emotions (post-its to the right in Figure 4.10):

"The image intensifies the emotions and becomes more provocative"

"Irritation"

Participants' perceptions of characteristics of "**A bad design**" were following:

"Only includes women"

"Only information"

"Gray and dark colors, no matching image."

"Does not include women"

"Removes the context from the woman's story and does not connect it to the facts we find out."

"Only image or only text"

"Objective text that cannot be interpreted"

"Literal"

It is evident that poor design was generally associated with a lack of contextualization, limited multimodality, and reduced interpretive openness. Participants also pointed to fragmented or overly narrow presentations of content, where information is isolated rather than integrated into a broader narrative structure. In addition, designs that are overly literal or purely factual were seen as limiting engagement, as they reduce opportunities for interpretation and meaning-making. Overall, the findings suggest that participants value contextual, multimodal, and interpretively open design approaches.

5 Seconds (If we only have 5 seconds to make a visitor want to know more, what do we show?):

"Image that raises questions"

"Current"

"Strong headline + interesting text"

"Provocative and gutsy"

"Something that illustrates how it actually was, quotes, rules"

"Old archive images"

"Quotes"

"Quotes but without telling the year"

When considering what is needed to capture the attention of a visitor in a very short time frame, the participants emphasized content that is immediately engaging and curiosity-driven. This included visually striking or archival imagery, provocative elements, and strong, attention-grabbing headlines. Participants also highlighted the importance of concise textual elements, such as quotes and brief contextual information, while noting that ambiguity (e.g., omitting temporal markers) can further stimulate curiosity and encourage further exploration. Overall, the responses suggest a preference for content that quickly evokes interest while leaving space for interpretation and inquiry.

Deep Dive: Forward

"History, overcoming adversity"

"Show sports where women do better than men"

Visually: "Children/girls who play sports"

"Brighter, happier, strong colors"

Sound: "Powerful with silence"

"Sound that enhances the visual"

"Girl laughter"

Deep Dive: The Gaze

"Giving men the same conditions as women"

"Reversing roles"

Visually:

"A man in women's clothes"

Sound:

"A man saying something"

Deep Dive: The Resistance

"Bring up events that make you feel “haven’t we come any further?”"

"Closer in time = more emotion"

"The “invisible” resistance"

"Exhortations"

Participants' discussions of the categories Forward, The Gaze, and The Resistance, outlined different interpretative directions for extending the content beyond surface-level engagement. “Forward” was associated with narratives of progress, resilience, and achievement, particularly emphasizing positive representations of women in sports and affective tones linked to strength and optimism. “The Gaze” introduced a critical, perspective-shifting approach through role reversal and inversion of gender norms, aimed at making power structures and representation more visible. In the discussion about “The Resistance”, the focus shifted towards more critical and emotionally charged material, particularly contemporary or near-contemporary examples of ongoing inequality. This was associated with stronger emotional responses and a sense of unresolved progress. Together, the three categories suggest complementary ways of deepening engagement through celebratory, critical, and reflective perspectives.

4.1.5.2 Outcomes

A central outcome is the importance of multimodality, particularly the combination of text and image. When participants were presented with text alone, their reflections were primarily analytical and comparative. They questioned the historical context, considered how such statements were received in the past, and reflected on whether similar attitudes persist today. The responses indicate a form of cognitive engagement, where participants critically assessed societal change and continuity. Emotional

reactions such as sadness and empathy were present, but were described in a more reflective and distanced manner.

In contrast, when the same text was paired with an image, participant responses shifted. The image introduced new layers of interpretation, prompting curiosity about the depicted situation and its context. More notably, participants reported stronger and more immediate emotional reactions, including irritation and a heightened sense of provocation. The image was described as intensifying the message, making the experience feel more direct and affective. This suggests that visual elements play a crucial role in amplifying emotional engagement, which in turn can deepen reflective processes.

The workshop data clearly outlines what participants perceive as ineffective design. “Bad design” was characterized by lack of multimodality (e.g., only text or only image), absence of context, overly objective or literal presentation, and weak visual aesthetics. These elements were associated with reduced engagement and limited opportunities for interpretation. Participants also pointed to the risks of both excluding women and presenting them in isolation, emphasizing the importance of contextualized representation.

Participants emphasized the importance of attention-grabbing entry points, such as images that raise questions, provocative content, and strong headlines. Such elements are seen as essential for capturing initial interest and encouraging further exploration. The use of archival images, quotes, and historically grounded material was also highlighted as a way to illustrate how things “actually were,” thereby enhancing authenticity and credibility. Interestingly, participants suggested that omitting contextual markers such as dates in quotes could create ambiguity, prompting visitors to reflect on whether certain attitudes belong to the past or persist in the present.

Findings from the workshop informed the decision to deprioritize sound in the design. While sound was described by participants as potentially powerful, the overall results suggested that audio was not essential for achieving the intended interpretative and emotional engagement. Instead, emphasis was placed on visual and textual modalities, which were found to be more consistently effective across participants in supporting reflection and understanding.

4.1.6 Prototyping the Third High-Fidelity Version

This version includes the physical wheel and the accompanying screen with functional sensors.

4.1.6.1 Screen Design

Start Screen

During user testing, it was observed that the wheel is the part of the installation that naturally draws more attention. This dominance limits engagement with the screen, which is intended as a central communicative element. The screen redesign therefore aims to balance this by increasing the screen’s ability to attract and sustain

user attention. The redesign therefore introduced a more vivid visual language, including the use of an orange color instead of the previously creme-white, more neutral design, as well as the addition of a relevant background image (an old picture of Slottsskogsvallen) to strengthen contextual framing and visual engagement.

Research in color psychology demonstrate that the color orange boost engagement levels and arousal states, compared to cooler colors [47]. Consequently, the use of an orange color in the redesigned screen aims to increase its prominence and guide user attention within the installation.

Insights from the second participatory design workshop highlighted the effectiveness of archival imagery in establishing contextual understanding and capturing attention. As one participant noted, “I think old archive images like this also do a lot there. You immediately understand the context, you understand the connection, you understand that it’s about history.”. This suggests that such imagery functions not merely as a background element, but as a contextual cue that helps users rapidly interpret the theme and purpose of the installation. In response to this insight, the screen design was revised to include an archival background image, with the aim of strengthening immediate contextual legibility and supporting users in orienting themselves more quickly within the interaction. The design choice is intended to enhance engagement by making the historical framing of the content more visually explicit, thereby encouraging more meaningful and sustained interaction with the screen.

Both pilot tests and mid-fi tests indicated that participants experienced difficulties in understanding the context before interaction. Based on these findings, the text "Welcome to spin the lucky wheel" was revised to include more context, thereby supporting users in forming an initial understanding of the installation before engaging with it. The start screen of this prototype can be seen in Figure 4.11 and has the text: "Explore a time of groundbreaking gains and harsh prejudices" and at the center "Women’s Olympic Games 1926 on Slottsskogsvallen in Gothenburg", with the aim of giving the visitor an understanding of the context. The decision to include a text that is intended to act as a signifier was grounded on the observation the tests that several participants asked for permission to spin the wheel. The text says: "Spin the wheel to randomly land on historical moments".



Figure 4.11: Digital Design of the Start Screen

Categories screens

The color contrast of the interface was evaluated and subsequently adjusted to improve visual accessibility and readability. Particular attention was given to ensuring sufficient distinction between text, background elements, and category-specific color overlays, in order to support legibility across different visual conditions and reduce the risk of information becoming difficult to perceive. These adjustments were made to strengthen both the usability and the overall clarity of the installation's visual communication.

Georgia was chosen as the typeface for informational text elements due to its strong readability and well-established suitability for screens. It is a serif font designed to maintain clarity even at smaller font sizes and lower screen resolutions, which makes it particularly effective for body text and longer passages of information [48]. Its balanced and neutral appearance also contributes to a professional and accessible visual identity, making it suitable for informational content where readability is the primary priority rather than decorative style.

4.1.6.2 Sensors and Technical Functionality

To test the sensors and interaction mechanics, a small wooden wheel prototype was used, see Figure 4.12.

Initially, the system relied on QR-code scanning with an AI Camera connected to a Raspberry Pi for position detection. Although this approach provided somewhat reliable identification, it introduced several limitations.

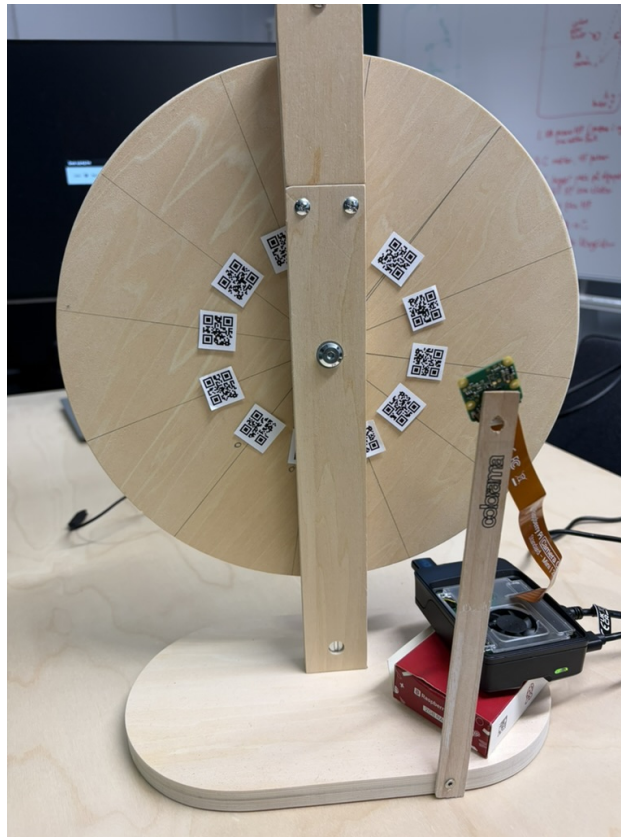


Figure 4.12: Back of Wooden Wheel with QR-codes and a Camera

To improve robustness and create a more seamless interaction, the system was redesigned to use an RGB sensor instead.

The RGB sensor enables direct color detection in real time, allowing the system to identify predefined colored markers without requiring camera-based image processing or QR-code decoding. This transition simplified the hardware setup and reduced computational complexity while also improving responsiveness during operation.



Figure 4.13: The Back of the Physical Wheel

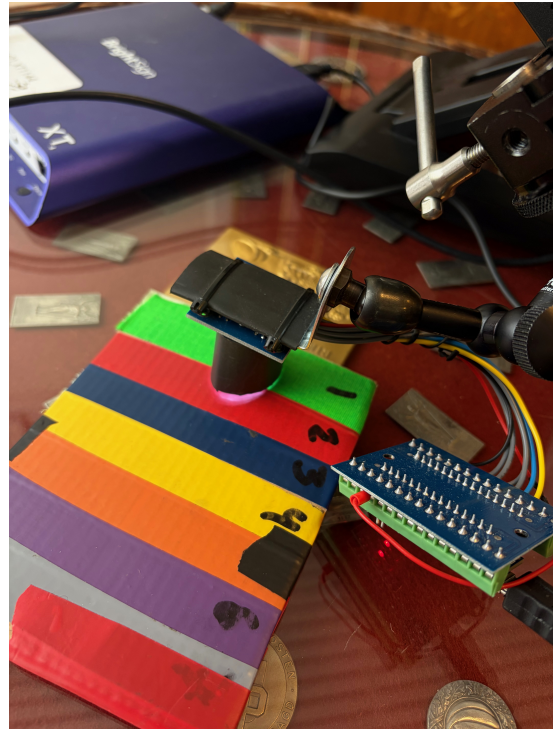


Figure 4.14: RGB-Sensor Reading Colors

4.2 Final Prototype

The final prototype represents the outcome of an iterative Research through Design process, in which insights from workshops, prototyping, and user testing were continuously integrated into the evolving concept. The design consists of a physical interaction component - a wheel, a digital screen, and a combined interaction flow that together form a cohesive museum experience. The installation is intended to support both engagement and reflective interpretation of women's sports history, with a particular focus on making historical narratives more accessible and experientially engaging for visitors.

Rather than functioning as separate elements, the physical and digital components are designed to operate as an integrated system. The physical interaction acts as the entry point to the experience, while the screen provides contextual, narrative, and visual content in response to the visitor's actions. The interaction flow connects these components into a continuous experience that encourages exploration, curiosity, and interpretation.

4.2.1 The Wheel



Figure 4.15: The Physical Wheel

The wheel constitutes the primary physical interface of the installation and functions as the initial point of engagement for visitors. It is designed as a tangible, rotating artifact that invites direct bodily interaction through the act of spinning. Each segment of the wheel represents a thematic category connected to women's sports history, allowing visitors to influence which content is activated through their physical input.

The use of a tangible interface was motivated by the intention to create an immediate and intuitive form of interaction that does not rely on prior instruction or digital literacy. Instead, the physicality of the wheel supports a more tangible and exploratory mode of engagement, where visitors learn through action rather than instruction. The randomness introduced through the spinning mechanism also contributes an element of discovery, encouraging repeated interaction and sustained engagement.

The wheel functions as a clear affordance for interaction. Participants appeared to immediately understand how to engage with the installation, suggesting that the spinning wheel operated through a familiar and recognizable conceptual model [25]. The interaction therefore required little instruction and appeared to encourage exploration and curiosity-driven engagement [24].

The wheel appeared to play an important role in attracting attention and inviting participation. Participants described the interaction as immediately engaging and expressed a preference for approaching the wheel compared to more conventional museum installations. This suggests that the physical and playful nature of the interaction functioned as an accessible entry point into the experience, lowering the threshold for engagement and encouraging curiosity-driven exploration.

4.2.2 The Screen

The screen functions as the informational and narrative layer of the installation. When the wheel comes to a stop, the screen responds by presenting content associated with the selected category. This content combines historical information, visual material, and narrative fragments related to women's sports history, with the aim of situating individual stories within a broader historical and societal context.

The content is designed to move beyond purely factual presentation by integrating different forms of representation, including text, imagery, and visual structures that highlight patterns and relationships within the material. This approach aims to support both cognitive understanding and emotional engagement, allowing visitors to access the content on multiple levels.

The content displayed in the installation is structured around a degree of controlled randomness. Each category does not correspond to a single fixed information screen, but rather to multiple possible screens containing different variations of content. As a result, selecting a category does not lead to a deterministic outcome, but to a set of possible informational outputs. This introduces variation within each category while maintaining a coherent thematic structure, allowing the experience to remain both unpredictable and thematically consistent.

The screen is also designed to support interpretative openness rather than fixed narratives. By presenting multiple perspectives and types of material, the installation encourages visitors to construct their own understanding of the historical content rather than receiving a single authoritative account.

Several participants described encountering information that challenged their prior assumptions or filled perceived knowledge gaps. One participant noted that although

gender inequality in sports was widely recognized, “one does not know exactly how or in what ways” it manifested historically. Another expressed surprise at learning that women had previously been prohibited from participating in the Olympic Games, having instead assumed that women’s participation had increased naturally over time rather than through political and social struggle. Similarly, participants reflected on how narratives of sports history are often centered around men, resulting in limited prior exposure to women’s sports history (User testing).

During the first workshop, several participants expressed that they encountered information about women’s sports history that was previously unknown to them, suggesting that the content introduced new perspectives and challenged existing knowledge gaps.

Strong emotional responses were observed during Workshop 1, indicating that the historical material resonated with participants beyond a purely informational level.

Participants not only demonstrated increased awareness of historical conditions surrounding women’s sports, but also responded with affective reactions such as surprise, disbelief, and moral evaluation. One participant expressed this response by stating: “But imagine banning a sports. Like, that is insane. I mean, I think so.” This reaction illustrates how the content prompted a shift from abstract understanding of historical inequality to a more immediate and tangible form of engagement.

In relation to the research question, these findings suggest that reflection is not solely generated through the communication of historical facts, but is strengthened when information is experienced through an emotional register. The combination of cognitive understanding and affective response appears to support deeper engagement with the material, indicating that emotional resonance may function as an important design factor in facilitating visitor reflection within museum contexts.

4.2.3 The Interaction

The interaction design brings together the physical and digital components into a unified experience. Visitors engage with the installation by spinning the wheel, observing its deceleration, and experiencing the transition into digital content on the screen. This sequence creates a cyclical interaction loop that encourages exploration and repetition.

The interaction is designed to be both responsive and experiential, with particular attention given to the relationship between action and feedback. The physical motion of the wheel is directly linked to changes in the digital output, reinforcing a sense of causality and engagement. The transition between states is intended to be clear and immediate, supporting an intuitive understanding of the system.

Beyond usability, the interaction is designed to support reflection and curiosity. By combining tactile engagement, visual feedback, and narrative content, the installation encourages visitors to actively explore the historical material rather than passively consume it. In this way, the interaction serves not only as a functional mechanism for navigating content, but also as a means of shaping how visitors encounter and

interpret women's sports history within the museum context.

4.3 Findings

Through the iterative RtD process, participatory workshops, and user testing conducted throughout the study, several key factors emerged as particularly significant for designing interactive museum installations that address the visibility gap in women's sports history and encourage visitor reflection. Rather than functioning as isolated design features, these factors operated in relation to one another, shaping how visitors engaged with, interpreted, and emotionally responded to the historical material. Collectively, the findings suggest that meaningful engagement with marginalized histories depends not only on making content visible, but also on how that content is framed, encountered, and experienced through interaction.

4.3.1 Key Factors

Table 4.1 presents an overview of the identified key factors: Tangible and playful interaction, Chance-based content selection, Emotional engagement as a catalyst for reflection, and Visibility through framing. Following the table, a more detailed description of the key factors is provided.

Table 4.1: Key factors shaping interaction and meaning-making in the interactive installation on women’s sports history.

Key factor	Description	Design implication
Tangible and playful interaction	Tangible interaction functioned as an entry point to engagement by lowering the threshold for participation through tactile, playful, and intuitive interaction. The physical wheel created curiosity, presence, and active involvement.	Design should prioritize tangible and bodily interaction to initiate engagement and encourage active participation in museum contexts.
Chance-based content selection	The system structured how content was encountered by introducing controlled unpredictability, where visitors were assigned categories through interaction rather than choosing them directly. This shaped the sequence and framing of narratives.	Interaction design should be used as a framing mechanism that structures interpretative pathways and supports exploratory engagement.
Emotional engagement as a catalyst for reflection	Emotional responses such as surprise, frustration, and disbelief emerged when engaging with historical narratives. These affective reactions deepened engagement and supported reflection on inequality in women’s sports history.	Design should allow space for emotional responses to emerge as part of the interpretative process, supporting reflection and memorability.
Visibility through framing	Thematic categories structured what became visible and how women’s sports history was interpreted. Categories functioned as interpretative lenses and were influenced by participatory input.	Design framing structures should be treated as a core mechanism for shaping visibility and meaning-making.

4.3.2 Key Factor 1: Tangible and Playful Interaction

The wheel introduced an element of surprise and playfulness that lowered the threshold for engagement and encouraged visitors to approach the installation. Participants associated the interaction with games, lotteries, or entertainment formats, creating an immediate desire to participate.

The tangible act of spinning the wheel created a transition from passive observation to active participation, positioning visitors as participants in the experience rather than solely recipients of information. In this sense, interaction became part of the interpretative process itself, shaping how the content was encountered and understood. The findings therefore suggest that tangible interaction can function as a mechanism for generating engagement while simultaneously structuring visitors' relationship to historical narratives.

Participants contrasted the wheel-based interaction with screen-based interfaces, emphasizing that the physical and material dimension created a stronger sense of presence and involvement. Tangible interaction in this sense contributed to how visitors were situated within the experience and how attention toward the content was sustained.

While the wheel introduced elements of surprise and playfulness that lowered the threshold for engagement and encouraged visitors to approach the installation, the installation addressed complex and emotionally charged themes related to sexism, exclusion, objectification, and historical marginalization. Rather than diminishing the seriousness of the content, the playful interaction appeared to function as an entry point into more critical forms of engagement.

The findings suggest that tangible interaction can be understood as a key design factor for museum installations that aim to move beyond passive viewing. In this case, physical engagement acted as a catalyst for curiosity, which in turn opened up space for later reflection on the content.

4.3.3 Key Factor 2: Chance-based Content Selection

Central aspects of the wheel was its playful structure, in combination with controlled unpredictability. Beyond initiating engagement, the interaction also structured how content was encountered. The wheel did not simply provide access to information but determined the sequence and framing of historical narratives. The act of spinning the wheel introduced chance, anticipation, and limited user control, which participants described as more engaging than direct selection. Participants highlighted that being "assigned" a category or theme through the wheel was more engaging than it would be to actively selecting content. This introduces a form of controlled unpredictability, where the system removes user choice but maintains interpretative agency once the outcome is revealed, meaning that visitors could not fully anticipate which category or content would appear next. This structure supported exploratory engagement and created conditions for sustained interaction with the installation. The role of unpredictability was central in shaping engagement and interpretation.

The interaction structure of the installation remains consistent [24], while the informational outcome varies. Users engage with the interface through the same type of physical interaction and interaction flow each time, creating a consistent conceptual model within the experience [25]. However, the resulting content is not fixed, as each interaction can generate different informational outputs within a category. Participants highlighted that this lack of control increased curiosity and attentiveness. Importantly, the system did not remove interpretative agency, but redistributed it to the moment of interpretation rather than the moment of selection. In this sense, interaction functioned as a framing device that shaped how meaning was constructed through chance-based encounter rather than choice.

4.3.4 Key Factor 3: Emotional Engagement as a Catalyst for Reflection

The findings show that emotional engagement emerged as a response to the historical content encountered through the interaction. Participants expressed affective reactions such as surprise, frustration, disbelief, and anger when engaging with narratives of exclusion and inequality in women’s sports history.

These emotional responses suggest that emotional engagement contributed to deeper forms of reflection by moving visitors beyond passive reception of historical information. Rather than encountering the material as distant or abstract history, participants appeared to engage with it as socially and personally meaningful. The installation therefore functioned not only as an informational system, but also as an affective experience capable of provoking critical reflection on historical and contemporary inequalities. Rather than being a secondary effect, emotional engagement played a central role in how participants processed and interpreted the narratives presented in the installation.

Furthermore, emotional engagement appeared to strengthen attentiveness and memorability. Participants frequently described the content as striking or unexpected, suggesting that affective responses contributed to how the historical material was processed and remembered.

Participants proposed strategies to encourage reflection, such as thought-provoking content, contextual framing, and interaction outcomes that prompt visitors to reconsider assumptions about women’s sports history. This highlights the importance of aligning interaction design with reflective learning goals. The findings also suggest the importance of balancing emotionally heavy content with contrasting elements, as exemplified by the category Forward, which participants identified as providing a necessary sense of resolution or relief.

4.3.5 Key Factor 4: Visibility Through Framing

A further key factor concerns how thematic structuring shaped what became visible within the installation. The categorization of content into themes such as “The Body” or “The Resistance” did not merely organize information but actively framed how women’s sports history was interpreted.

The findings indicate that these categories functioned as interpretative lenses that guided attention and structured meaning-making. Workshop input played a role in the development of these categories, suggesting that visibility was not solely determined by curatorial intent but also shaped through participatory contributions. In this sense, visibility is understood not as a neutral presentation of content, but as an effect of design decisions regarding structure, categorization, and framing.

The participatory and iterative design process also emerged as a central factor in the development of the installation, especially regarding the conceptual structure of the installation. Workshops, discussions, and user testing continuously informed the design process, influencing interaction design, thematic framing, visual communication, and content selection. Participant contributions played an important role in identifying which forms of interaction and presentation were perceived as engaging, understandable, and meaningful.

Importantly, the participatory process contributed not only to usability-related improvements, but also to questions of representation and interpretation. Rather than treating participants as evaluators of predefined design solutions, the process positioned them as co-constructors of meaning. Feedback from participants influenced how narratives were framed, which themes were emphasized, and how sensitive historical material was communicated. The emergence of categories such as Resistance, The Body, and Forward illustrates how participatory processes can directly influence narrative structure. Importantly, these categories were not only design outputs but also analytical constructs that shaped how historical material was later interpreted and organized. The findings therefore suggest that participatory approaches can function as a means of negotiating interpretative authority and expanding perspectives within the design process.

At the same time, the study indicates that participation does not eliminate curatorial or designer influence, but rather redistributes and complicates it. The final installation remained shaped by design decisions concerning selection, framing, and presentation. Nevertheless, the iterative process contributed to a more critically informed and contextually responsive design outcome.

4.3.5.1 Design Implications for Content and Framing

Recurring themes regarding content and framing were identified throughout the process. Following, the themes are translated to and presented as identified design implications.

Inclusion of women

Regarding the presented content itself, several design implications emerged. Firstly, to address the visibility gap in women's sports history in a museum installation, stories of women athletes must be included. An implication is therefore simply the inclusion of underrepresented narratives. Participants of Workshop 1 highlighted multiple aspects of women's sports history that they perceived as overlooked, such as prejudices, attitudes, favoritism towards male athletes and pay gaps. This suggests that addressing the visibility gap requires actively incorporating perspectives from

those with lived experience, rather than relying solely on established or institutional narratives.

Connection to the present

The findings suggest that connecting historical narratives to the present can enhance both relevance and critical reflection. Participants indicated that emotional engagement was often shaped by temporal distance, as historical quotes were perceived as less impactful when they did not feel connected to contemporary conditions. As one participant noted, a historical quote felt emotionally neutral precisely because it seemed removed from what “would be said today”.

At the same time, explicitly linking past and present supported deeper interpretation. Participants reflected on how current conditions in women’s sports are shaped by historical inequalities, with one describing this framing as empowering in making visible the continuity between historical constraints and present-day structures. Others engaged in speculative reflections on alternative histories, such as how women’s football might have developed without historical restrictions. For instance, the framing of the category Then / Now was indicated to be effective in prompting comparisons between historical and contemporary contexts. It encouraged visitors to understand women’s sports history not as a closed past, but as a set of ongoing structural conditions that continue to shape visibility, participation, and representation today. These findings indicate that situating historical material in relation to the present can strengthen both the interpretative and reflective potential of the experience.

Personal relevance

The findings indicate that personal relevance plays a key role in how participants engage with the content. Several participants described how material that connects to their own experiences, identities, or everyday contexts is particularly engaging and easier to relate to. As one participant noted, being a football player influenced their interest, even if the content was already perceived as inherently interesting. Others similarly emphasized that topics closely connected to oneself tend to attract greater attention and curiosity, suggesting that self-relevance functions as a primary filter for engagement.

This tendency was further reinforced by reflections on how familiarity or lived experience shapes what people are most drawn to when encountering new information. Participants described being especially receptive to content they could situate within their own routines, places, or interests, indicating that relatability supports both initial attention and sustained engagement. Overall, the findings suggest that personal connection acts as an important driver of engagement, where self-relevant material is more likely to be perceived as meaningful and worth exploring further.

Contextual clarity

The findings indicate that contextual clarity is central to the design of interactive museum installations addressing women’s sports history. Participants emphasized that engagement depends not only on what content is presented, but also on how it is framed and contextualized. Across all stages of the design process, contextual information appeared important for supporting understanding, interpretation, and emotional engagement. This suggests that historical material benefits from being

situated within a broader narrative structure that enables visitors to meaningfully interpret the content rather than encounter isolated fragments of information.

Multi-modality

The findings further suggest that combining visual and textual elements is important for generating both cognitive and emotional engagement. Participants described how images intensified emotional responses and made the content feel more provocative and impactful. The integration of multiple modalities therefore appears to strengthen both attention and interpretative engagement by allowing visitors to process information through complementary forms of representation.

Interpretive depth

Interpretive openness emerged as another significant factor in supporting visitor engagement. Participants suggested that overly literal presentations risk reducing reflection, whereas ambiguity and openness to interpretation encourage more active meaning-making. As one participant noted, a poor design would be one that is “very literal and very straight to the point” without allowing room for interpretation. These findings suggest that interpretive depth can stimulate critical reflection by encouraging visitors to question and negotiate the meaning of historical narratives rather than passively consume information.

Provocative content

The findings also indicate that provocative and emotionally charged content can function as an effective mechanism for capturing attention and encouraging reflection. Participants described emotionally unsettling or provocative material as particularly engaging, especially when it challenged assumptions or confronted visitors with uncomfortable aspects of history. Rather than “sugarcoating” historical realities, participants emphasized the value of presenting difficult or provocative material in ways that stimulate emotional and reflective engagement.

Strong headlines

Finally, participants emphasized the importance of strong and attention-grabbing headlines. Comparisons were made to contemporary news notifications, where headlines function as an entry point that motivates further engagement with the content. Participants suggested that concise and provocative headlines can effectively attract attention, after which visitors may become more willing to engage with more detailed contextual information.

4.3.6 Synthesis: Interaction as a Layered Meaning-Making Process

Together, the key factors illustrate that meaning-making in the installation emerged through the interaction of multiple layers. Tangible interaction initiated engagement, the system structure shaped interpretative exposure, thematic framing guided visibility, and emotional responses supported reflection.

Rather than being separate components, these factors function as interconnected conditions through which visitors actively constructed understanding. The findings therefore suggest that interaction design in museum contexts should be understood

not only as a means of access to information, but as an active part of how historical narratives are produced, experienced, and interpreted.

5

Discussion

This section discusses the findings in relation to the research question, that is: *What are key factors for designing an interactive museum installation that addresses the visibility gap in women's sports history and encourages visitor reflection?* The discussion synthesizes insights from the iterative design process, user testing, and participatory workshops, and situates them within feminist design theory and participatory design perspectives. Rather than evaluating the installation as a finished artifact, the discussion frames it as a set of design conditions that collectively shape how historical visibility and reflection are produced through interaction.

In this section, the focus is not on evaluating the overall success or effectiveness of the installation itself, except in relation to identified design improvements. Rather, the discussion centers on the broader implications of the findings.

5.1 Key Factors

Following is a discussion of the key factors presented in result: Tangible and playful interaction, Chance-based content selection, Emotional engagement as a catalyst for reflection, and Visibility through framing.

5.1.1 Tangible and Playful Interaction

This key factor aligns with theories of tangible interaction and tangible engagement in museums. Hooper-Greenhill argues that contemporary museum visitors increasingly seek active and sensory experiences rather than passive observation, positioning participation and involvement as central to museum communication [6]. Similarly, Antle et al. suggest that tangible interaction can slow down engagement and support reflection [38], while Bardzell's feminist HCI framework highlights embodiment as a meaningful dimension of interaction design where meaning is not only cognitively processed but also physically enacted [22]. Together, these perspectives support the idea that physical interaction can shape attention, engagement, and meaning-making rather than merely supporting usability.

In this study, playfulness did not function in opposition to critical reflection, but as a mechanism through which engagement with difficult histories became more accessible and participatory. This relates to theories of exploratory interaction and interpretative openness. Sharp et al. argue that designing for learning involves creating interfaces

that encourage exploration rather than linear information consumption [24]. Rogers further suggests that unexpectedness in interaction can generate engagement and reflection by disrupting familiar interaction patterns [28]. This is reinforced by Bal’s argument that exhibitions can create “unexpected visions” that challenge habitual ways of seeing [29]. Within this framework, controlled unpredictability becomes a mechanism for structuring curiosity and interpretative engagement.

An ethical consideration concerns the use of a gamified [30] interaction to communicate histories of discrimination and exclusion. While the playful and interactive format may support engagement and accessibility, it also introduces the risk of trivializing historical struggles or reducing them to entertainment. This highlights the importance of carefully balancing engagement with sensitivity, ensuring that the interaction functions as a critical and reflective mechanism rather than as entertainment detached from the historical realities being represented.

5.1.2 Chance-based Content Selection

From a design perspective, the mechanism of controlled unpredictability can be understood as a shift from goal-oriented interaction to exploratory engagement. Rather than optimizing for efficiency or user control, the installation leverages chance as a structuring principle for attention. Participants’ descriptions of surprise and anticipation suggest that unpredictability increases attentiveness and memory retention, as users are required to interpret outcomes they did not explicitly choose.

This finding is significant because it challenges dominant assumptions about control and optimization in interactive systems. Instead, it suggests that reduced control can, under certain conditions, enhance reflective engagement. The assignment of content disrupts habitual selection patterns and encourages visitors to engage with perspectives they might not have actively chosen, thereby broadening exposure to different historical narratives.

This also raises questions on how visibility is approached within the installation. Rather than aiming to provide a comprehensive or exhaustive overview of women’s sports history, the interaction mechanism primarily functions as an entry point intended to spark curiosity and initiate engagement. Visibility is therefore produced selectively and interpretatively, where the goal is not completeness, but to encourage visitors to further reflect on and explore histories that may otherwise remain overlooked.

5.1.3 Emotional Engagement as a Catalyst for Reflection

The results also demonstrate that emotional responses played a central role in shaping reflective engagement. Participants reported feelings of frustration, anger, and surprise when encountering historical material, particularly in relation to sexist language and the marginalization of women athletes. These emotional reactions were not incidental but appeared to be closely tied to the interpretative depth of the experience. Rather than positioning emotion as a secondary effect of interaction,

the findings suggest that emotional engagement functions as a mechanism through which historical awareness is intensified.

An important ethical consideration concerns the potential for emotional discomfort. Histories of women's sport include accounts of exclusion, discrimination, and structural inequality, which may evoke strong affective responses when encountered through the installation. Due to the chance-based and exploratory nature of the interaction, users may be exposed to such content in unpredictable ways, which further heightens the need for careful design framing.

In this context, emotional discomfort should not be understood as an intended end in itself, but rather as something that requires careful ethical positioning. While challenging content may support critical reflection [34], [35], its value depends on how it is contextualized and framed within the experience. The design therefore involves a balance between encouraging engagement with difficult histories and ensuring that such engagement does not become sensationalized or disengaged from the lived realities it represents. As such, the content must be handled with sensitivity and care, ensuring that emotional responses are supported through appropriate contextualization that enables reflection rather than mere shock or discomfort.

5.1.4 Visibility Through Framing

A key insight from the study is that narrative framing plays a crucial role for how historical content is understood. Rather than presenting women's sports history as a continuous narrative, the installation structures content into thematic perspectives such as The Gaze, The Resistance, and The Shadow Side. These categories function as interpretative lenses that highlight specific dimensions of visibility, power, and exclusion. This approach reflects a technofeminist understanding of technology as actively involved in meaning-making processes [9]. The installation does not simply display historical information but reorganizes it into narrative structures that foreground particular power relations. In doing so, it makes visible the mechanisms through which women's sports has been historically constructed and constrained [4].

The findings suggest that narrative fragmentation, rather than linear storytelling, can be a productive strategy for museum design. By offering multiple entry points, the installation allows visitors to engage with history as partial, situated, and constructed, rather than complete or objective [20], [5]. This contributes directly to the project's aim of addressing the visibility gap, as it exposes not only missing histories but also the processes through which certain histories become dominant [19], [4].

5.2 Design Process

This Research through Design study is grounded in feminist- and participatory design principles, which emphasize the active involvement of stakeholders, and in this case, with emphasis on involvement of women in shaping how their histories are represented. Moving beyond "neutral" data display and instead taking an active stance on historical representation, it is acknowledged that archives and museum

collections are not neutral and complete records, but reflections of past power structures [4], [5].

The installation was not designed to communicate a singular political message or provide definitive interpretations of history. Instead, the aim was to create conditions for critical reflection by exposing visitors to overlooked narratives, historical contradictions, and emotional tensions. This aligns with Bal's argument that exhibitions can point toward ideas and social issues without becoming propagandist [29], allowing visitors to continue reflecting beyond the exhibition itself. In this sense, the installation seeks not to instruct visitors what to think, but to encourage them to question dominant historical narratives surrounding women's sports.

Conducting this thesis as a RtD project has highlighted both the strengths and limitations of using iterative design practice as a method for knowledge production. Working through successive cycles of ideation, prototyping, and user testing made it possible to continuously refine the installation in response to empirical observations. At the same time, this close integration between design and research also meant that the boundaries between analysis, interpretation, and design decisions were not always clearly separated.

One of the key reflections concerns the role of the researcher as both designer and analyst. While this dual position enabled deep engagement with the material and allowed for rapid iteration based on user feedback, it also introduced a level of subjectivity in how findings were interpreted and prioritized. Design decisions were therefore not purely derived from data but were also shaped by conceptual intentions and theoretical commitments. This aligns with the position of RtD, where knowledge is understood as situated and constructed through practice rather than observed from a neutral standpoint [44], [45].

Another reflection relates to the scope of participation in the design process. Although participatory design principles informed the workshops and collaborative ideation sessions, the level of participation was necessarily limited by time constraints and the academic context of the project. As a result, participation primarily influenced concept development and thematic structuring rather than the full life-cycle of design, implementation, and evaluation. This raises questions about the depth of participation achievable within short-term design research projects and how this may affect the inclusivity of the resulting design outcomes.

The user testing provided valuable insights into how the installation was experienced in practice, particularly in relation to engagement, emotional response, and interpretation. However, the relatively small number of participants and the controlled testing environment limit the extent to which findings can be generalized. The results should therefore be understood as indicative of tendencies in user experience rather than definitive conclusions about visitor behavior in museum contexts.

The project should also be critically evaluated through an intersectional lens. The historical narratives co-selected during the participatory workshops predominantly highlight white, cisgender, and socio-economically privileged females from early 20th-century Sweden. Consequently, the intersections of gender with race, sexuality,

and disability remain largely unrepresented in the current iteration of the artifact.

Overall, the study has contributed to a deeper understanding of how feminist and participatory design approaches can be operationalized within interactive museum contexts, while also revealing the methodological and practical tensions inherent in working at the intersection of design practice and research.

Designers Positionality

An important aspect of this project and its design process involves reflecting on my own role in selecting and presenting these narratives. The installation is not a neutral representation of history, but a curated interpretation shaped by my own perspectives and assumptions regarding visibility, gender, and sports. This raises questions not only about how these stories are communicated, but also why I chose to tell them in the first place.

My motivation for the project emerged from a perception that women’s sports history is frequently overlooked or treated as secondary within both public discourse and historical representation. At the same time, the process made me increasingly aware that highlighting certain stories also means prioritizing particular experiences, perspectives, and forms of visibility over others. The installation therefore reflects both an attempt to address historical invisibility and my own interpretation of what histories are considered important to foreground. Acknowledging this positionality is important, as the design process itself inevitably shapes how visitors encounter, interpret, and emotionally engage with the material.

5.3 The Design

The designed interaction does not have constraints, in the way they are described by Norman and Sharp et al. [24], [25], in that it does not strictly guide or restrict user behavior toward a single intended outcome. Instead, the relative absence of strong constraints opens up a broader interaction space, where users are able to appropriate the system in ways that extend beyond its intended use. A user can manipulate the results by themselves stopping the wheel on which category they want. Importantly, this form of “manipulation” should not necessarily be understood as a design flaw or incorrect use, but rather as a meaningful possibility afforded by the interaction design. By allowing users to intervene in the outcome, the system enables a sense of agency and playful negotiation with chance. This can enrich the experience by making users active participants in shaping what content becomes visible, rather than passive recipients of system-generated outputs. In this sense, the openness of the interaction model supports exploration, appropriation, and personal engagement, highlighting how deviations from intended use can become an integral and valuable part of the experience.

The study demonstrates that visibility alone is insufficient for fostering reflection. Rather than simply making content visible, meaningful engagement emerged through the designed interplay of tangible interaction, interpretative framing, and emotional resonance, which together shaped how visitors encountered and understood women’s sport history. In this sense, visibility functions as a starting point rather than

an outcome in itself. As Cahn [11] also suggests, increased visibility does not automatically translate into structural change, highlighting the importance of how visibility is mediated, contextualized, and experienced within the design.

The design decision to use eight categories highlights a key tension between visibility and representation. Although the structure supports clarity and accessibility, it inevitably reduces the complexity of sports history to a limited set of thematic lenses. As a result, the visibility gap is addressed selectively, foregrounding certain aspects of women's sports history while leaving others less represented. This suggests that visibility in this context is not about completeness, but about which parts of the historical landscape are made accessible through design.

Reflection should be understood as something that is not produced directly by the design, but supported through it. From this perspective, the role of the installation is not to ensure reflective outcomes, but to establish conditions under which reflection becomes more likely to occur [24]. This includes, for example, supporting interpretive openness, enabling emotional engagement, and facilitating connections between historical and contemporary contexts. These design choices do not determine reflective responses, but they act as triggers or entry points for visitors to reframe, question, or relate the content to prior knowledge and experiences. Consequently, reflection should be approached as a potential rather than a measurable endpoint. This shifts the evaluation of the design away from assessing whether reflection “occurred” in a definitive sense, and towards examining whether the interaction design provided meaningful opportunities for interpretative and critical engagement.

5.3.1 Design Improvements

The findings from the design process and iterative prototyping suggest several directions for further development. Rather than evaluating a final implementation, these improvements are based on insights from user testing and reflections on the current prototype.

First, the effectiveness of the screen design interventions would benefit from additional testing in more varied and realistic usage contexts. This includes further exploration of how users interpret and engage with the visual output, and how this evolves over a complete exhibition experience.

Second, the overall user flow of the exhibition should be tested more systematically. In particular, future iterations should examine whether the sequence of interactions is perceived as coherent and intuitive, and how visitors move between different parts of the installation. Closely related to this is the need to evaluate the clarity of signifiers and system feedback, ensuring that users can easily understand how their actions influence the system and what the system communicates in return. Future iterations could also explore whether a broader or more flexible categorization system is needed to better capture the diversity of sports history. This includes reconsidering whether eight categories sufficiently support representational depth, or whether alternative structures could allow for more nuanced or overlapping themes. At the same time, any expansion should be balanced against the need for clarity and usability, maintaining

the categories as an interpretative aid rather than a comprehensive taxonomy.

Third, accessibility and inclusivity should be further addressed through testing with more varied users, for instance older, younger, disabled users, etcetera. This would help identify potential barriers in both interaction design and content delivery, and support the development of a more inclusive exhibition experience.

Finally, the initial concept included auditory interaction, which was deprioritized during development. This modality could be revisited in future iterations as a way to expand both accessibility and the experiential richness of the installation.

5.4 Future Work

This study opens several directions for further research within interaction design, museum studies, and feminist design practice. While the installation demonstrates how tangible interaction, narrative framing, and emotional engagement can contribute to reflective museum experiences, it also raises questions about how these design strategies function in broader contexts and with more diverse audiences.

A first direction for future research concerns longitudinal studies of visitor engagement. This thesis primarily captures immediate reactions and short-term reflections generated through user testing. Further research could investigate how similar interactive museum installations influence longer-term memory, understanding, and attitudes toward historical representation, particularly in relation to gendered narratives in sports history. Such studies could provide deeper insight into whether emotional and tangible engagement translates into sustained reflection beyond the moment of interaction.

Secondly, there is potential for expanding the participatory design process to include a broader and more diverse group of stakeholders. In this project, participation was limited by practical constraints and project scope. Future research could explore how involving historians, athletes from different generations, curators, and underrepresented communities might further shape the interpretation and representation of women's sports history. This could also help examine how power dynamics operate within participatory museum design processes.

A third area for further investigation concerns comparative design approaches. It would be valuable to study how different interaction modalities, such as purely physical installations, fully digital systems, or hybrid experiences, affect visitor engagement and critical reflection. In particular, the role of controlled unpredictability and tangible interaction could be examined across different technological setups to better understand their generalizability.

Additionally, future research could further develop the use of feminist theory in interaction design practice. While this thesis demonstrates how these frameworks can inform narrative structuring and experiential design, further work could explore more explicitly how feminist principles can be operationalized in evaluation methods, success criteria, and design toolkits within museum contexts.

Finally, there is scope for exploring how similar design approaches could be applied to other forms of marginalized or underrepresented histories beyond women's sports. Extending the approach to other domains could help assess the broader applicability of interaction design as a tool for critical heritage work and inclusive storytelling.

Overall, these directions highlight the potential for continued exploration of how interaction design can contribute to more critical, inclusive, and reflective forms of museum experience.

6

Conclusion

This thesis has explored how interaction design can be used to address the visibility gap in women's sports history and encourage visitor reflection within a museum context. Through a Research through Design approach, the project has investigated how feminist and participatory design perspectives can inform the development of an interactive installation, and how different design decisions shape engagement, interpretation, and emotional response.

The installation demonstrates how interaction design can function as a critical and interpretative practice within museum contexts. Rather than resolving historical invisibility, it renders the mechanisms of visibility itself perceptible, thereby opening up space for reflection on how histories are constructed, valued, and remembered.

Across the findings, several interrelated design factors emerge that collectively address the research question. First, tangible interaction provides an accessible and engaging entry point into the installation, enabling immediate participation. Second, controlled unpredictability enhances curiosity and encourages interpretative engagement by disrupting passive content consumption. Third, emotional resonance plays a central role in deepening historical awareness and fostering reflection. Fourth, narrative framing through thematic categories structures how visibility is constructed and challenged. Finally, participatory design processes contribute to the formation of these narrative structures, ensuring that multiple perspectives shape the representation of history.

Taken together, these key factors suggest that reflective museum experiences are not achieved through information density or technological sophistication alone, but through the careful orchestration of interaction, emotion, narrative structure, and participatory meaning-making. In relation to women's sports history, this implies that addressing the visibility gap requires not only making more content visible, but also designing the conditions under which that visibility is interpreted, questioned, and felt.

The primary academic contribution of this RtD study lies in the production of design knowledge rather than in the artifact itself [44]. Through the iterative development and evaluation of the installation, the four interrelated design factors were identified. These are not intended as universal guidelines, but as situated insights emerging from this specific RtD context.

While the installation provides one possible approach to this challenge, the findings

also point to broader implications for museum design and interaction design practice. In particular, they highlight the importance of combining physical interaction, narrative framing, emotional engagement, and participatory processes to create experiences that are not only informative, but also reflective and critically engaging.

In conclusion, the project shows how interactive museum installations can move beyond passive display of historical content and instead become spaces for critical reflection on how history is represented, whose stories are told, and through feminist and participatory approaches, address visibility.

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A

Appendix

A.1 User Testing Protocol: Pilot Testing

Pilottester

Mål: Testa konceptet

Observation: Be dem tänka högt

How to:

1. Säg att:
 - a. Deltagandet är frivilligt
 - b. Inga personuppgifter samlas in
 - c. Deltagaren kan avbryta när som helst
 - d. Testet dokumenteras anonymt
2. Visa hjulet på mobilen
3. Slideshow (drive) på datorn: de slides som passar tårtbiten
4. Utvärdera

Observera:

- Väntar de på något?
- Förstår de att de kan snurra igen?
- Vill deltagaren vill snurra igen
- Tittar de mer på hjulet eller skärmen?
- Finns det tvekan eller osäkerhet?
- Kroppsspråk och reaktioner

Frågor:

- Hur upplevde du installationen?
- Vad hände här, med dina egna ord?
- Vad tror du att installationen handlar om?
- Känns konceptet intuitivt?
 - Vad förstod du att du skulle göra, och var det något i interaktionen som kändes oklart eller krävde eftertanke?
 - Hur tydlig upplevde du kopplingen mellan att snurra hjulet och det innehåll som visades?
 - Fick du lust att snurra igen? Varför/varför inte?
- Är det något du tycker borde förändras?

Dokumentera efter varje test:

- datum
- typ av test
- vad funkade
- vad var oklart
- vad ändrades efteråt

Tänk på:

- Inte förklara för mycket innan test
- Observera mer än ni frågar

Etiska överväganden:

- Deltagandet är frivilligt
- Inga personuppgifter samlas in
- Deltagaren kan avbryta när som helst
- Testet dokumenteras anonymt

Användning av resultaten/Resultaten från pilottesterna används för att:

- justera innehåll och språk
- förbättra tydlighet i interaktionen
- stärka installationens pedagogiska och emotionella effekt

A.2 User Testing Protocol: Mid-Fi Testing

User testing - mid-fi

How to:

1. Säg att:
 - a. Deltagandet är frivilligt
 - b. Inga personuppgifter samlas in
 - c. Deltagaren kan avbryta när som helst
 - d. Testet dokumenteras anonymt
2. Berätta kort om kontexten: "Detta handlar om kvinnlig idrottshistoria, med fokus på damolympiaden 1926."
3. Visa text (figma), ställ frågor
4. Visa det fysiska hjulet, ställ Innan snurr-frågor
5. Visa innehåll på skärm. Slideshow (figma) på datorn: de slides som matchar sektionen
6. Observera deltagaren, be dem att "tänka högt"
7. Ställ Efter snurr-frågor

Observera:

Hur de interagerar

- Snurrar de flera gånger?
- Snurrar de snabbt/långsamt/försiktigt?

Engagemang

- Hur länge stannar de?
- Snurrar de igen?

Frågor:

Innan surr

3. Text:

- Vad tänker du om det?
- Väcker det några känslor hos dig?

4. Hjulet

- Vad tänker du om det du har framför dig (hjulet) och vad du ska göra?
- Vad känner du kring aktiviteten (snurr-hjul) och ämnet?

Efter snurr

Känsla/engagemang:

- Hur fick det dig att känna?

- Förändrades din känsla under tiden eller efter du snurrade? På vilket sätt?
- Vad var det som gjorde att den förändrades?

Innehåll:

- Vad tänker du om innehållet?
- Lärde du dig något nytt?
- Var det något som förvånade dig?
- Är det skillnad på hur du tar in informationen efter att ha snurrat på hjulet, jämfört med tidigare?
- Är det lagom mängd text?
- Är det något som saknas?

Reflektion:

- Fick installationen dig att tänka annorlunda om kvinnor i sporthistorien?
- Fick den dig att reflektera över vems berättelser som berättas i sporthistorien?

Interaktionen:

- Hur upplevde du den fysiska interaktionen?
- Tror du att den fysiska interaktionen påverkade hur du upplevde innehållet?
 - Till det bättre eller till det sämre?

Dokumentera efter varje test:

- datum:
- typ av test:
- vad funkade:
- vad var oklart:
- vad ändrades efteråt:

A.3 Consent Form for Participation in Workshops

Samtycke för deltagande i forskningsprojekt

Beskrivning av studien

Jag gör för närvarande mitt examensarbete som en avslutande del av masterprogrammet i interaktionsdesign på Chalmers. Genom en feministisk designmetod vill jag utforska hur interaktion kan väcka kritisk reflektion kring makt och historieskrivning kopplad till kvinnlig idrott. Syftet med dett projekt är att undersöka hur en installation kan användas på museum för att synliggöra glömda eller marginaliserade berättelser inom kvinnlig idrott. Den färdiga installationen kommer att placeras på Idrottsmuseet i Göteborg.

Hur går workshopen till?

Workshopen tar cirka 60 minuter och involverar diskussioner samt idégenerering av designegenskaper. Fokus ligger främst på den visuella och emotionella upplevelsen.

Hantering av data och sekretess

- Inspelning: Workshopen kommer att ljudinspelas för att jag ska kunna analysera diskussionerna noggrant. Ingen annan kommer ta del av inspelningen och den kommer raderas efter att analysen är klar.
- Anonymitet: Du kan välja att delta helt anonymt. Inga namn publiceras i den färdiga uppsatsen om du inte uttryckligen godkänner det. Data kommer att behandlas konfidentiellt och förvaras säkert.
- Frivillighet: Ditt deltagande är helt frivilligt. Du har rätt att avbryta ditt deltagande när som helst under workshopen, utan att behöva ange något skäl.

Frågor?

Undrar du något om studien eller har funderingar kring din medverkan? Du är välkommen att kontakta mig via mail: almakar@chalmers.se eller telefon: 0763734642.

Slutligen, stort tack för din medverkan som kommer bidra till värdefulla insikter i mitt arbete.

Alma Karlsson

* Anger obligatorisk fråga

1. Jag har tagit del av informationen om studien och förstår dess syfte. *

Markera alla som gäller.

☐ Ja

2. Jag ger mitt medgivande till att sessionen ljudinspelas för forskningsändamål. *

Markera alla som gäller.

☐ Ja

3. Jag förstår att min medverkan är frivillig och att jag kan avbryta när jag vill. *

Markera alla som gäller.

☐ Ja

4. Jag förstår hur mina personuppgifter hanteras enligt ovan. *

Markera alla som gäller.

☐ Ja

5. Hantering av namn *

Markera endast en oval.

☐ Jag vill vara anonym i den färdiga rapporten (anges som t.ex. "Deltagare A, Idrottare").

☐ Jag vill att mitt namn publiceras i uppsatsen

6. Mitt namn

7. Dagens datum *

Exempel: 7 januari, 2019

Det här innehållet har varken skapats eller godkänts av Google.

Google Formulär

A.4 Workshop Manuscript: Workshop 1

Workshop 1

Introduktion, projektets syfte och samtycke. (2 min)

Välkomna! Tack för att ni är här. Jag skriver min masteruppsats i interaktionsdesign. Mitt projekt handlar om att synliggöra glömd kvinnlig idrottshistoria genom en fysisk installation som kommer att finnas på Idrottsmuseet i Göteborg.

Steg 1. Skriv ned (individuellt) på post-it lappar vad som borde uppmärksammas mer kring kvinnlig idrott och kvinnlig idrottshistoria. (5 min)

Steg 2. Gruppera dem och namnge teman (10 min)

Nu vill jag att ni tillsammans grupperar dem. Ser ni några mönster? Vilka lappar hör ihop?

(när de börjar bli klara, ELLER efter 7 min) Nu vill jag att ni sätter namn på dessa grupper. Försök att hitta namn som inte bara är beskrivande, utan som fångar kännan.

Steg 3. Här har vi kort med olika historiska händelser kopplat till kvinnlig idrott. Jag vill att ni som grupp rangordnar dessa på en skala från minst intressant till mest. Diskutera högt varför vissa berättelser känns viktigare att lyfta fram idag. (15 min)

Steg 4. Föreställ er ett fysiskt lyckohjul (tänk lisebergshjul) på ett idrottsmuseum som finns där för att lära ut om kvinnlig idrottshistoria. På hjulets sektioner finns ett antal olika kategorier som är kopplade till damidrott. När man snurrar på hjulet och det stannar på en av sektionerna dyker innehåll upp på en skärm bredvid.

Jag ber deltagarna svara på:

1. Vilka kategorier finns på hjulet?
2. Vad visas på skärmen?
3. Vilka effekter hade kunnat göra upplevelsen starkare? och
4. Hur får vi museibesökaren att reflektera kritiskt och inte bara ser detta som ett spel?

(20 min)

Steg 5. Rösta på vilka färgpaletter som känns mest passande kopplat till temat (5 min) Lägg en röst (en prick) på den ni föredrar och motivera kort varför.

Avslutning och tack, eventuella sista tankar. (3 min)

Är det något ni vill tillägga eller som känner att vi har missat?

A.5 Workshop Manuscript: Workshop 2

Workshop 2

Introduktion, projektets syfte och samtycke.

Välkomna! Tack för att ni är här. Jag skriver min masteruppsats i interaktionsdesign. Mitt projekt handlar om att synliggöra glömd kvinnlig idrottshistoria genom en fysisk installation som kommer att finnas på Idrottsmuseet i Göteborg. Målet är att synliggöra kvinnlig idrottshistoria och att skapa reflektion hos besökaren. Vi kommer att fokusera på den visuella och emotionella upplevelsen idag.

Steg 1. Visa infotext.

- Vad är era tankar kring detta?
- Väcker det några känslor hos er?

Steg 2. Visa mockup för en av kategorierna (Kroppen) med samma infotext.

- Vad är era tankar kring detta?
- Väcker det några känslor hos er?
- Är det någon skillnad jämfört med tidigare?
- Är det något som stör?
- Något som fattas?

Steg 3. Berätta att det är åtta teman jag arbetar med, vi ska dyka djupare i tre av dem: Framåt, Blicken och Motståndet. Jag vill att ni ser er själva som designers i denna delen av workshopen. Tänk brett och stort och framförallt att ni kan påverka vad besökaren tar med sig från utställningen. För att innehåll ska dykas upp snurrar besökaren på ett stort hjul, det är alltså slumpen som avgör vad som dyker upp på skärmen.

A. Nu ska vi tänka att vi ska göra det så dåligt som möjligt.

- Hur skulle vi kunna designa den här skärmen så att ingen alls reflekterar över kvinnors historia?
- Hur gör vi den så **tråkig** och **osynlig** som möjligt?

B. 5 sekunder

- Om vi bara har **5 sekunder** på oss att få en besökare att vilja veta mer, vad visar vi?

C. Framåt (Handlar om framgångar i damidrottens historia). Känsla:

Positiv/stärkande - hur designar vi för det?

- Kan vi skapa en känsla av **hopp** om framtiden och **styrka** att förändra?

Visuellt:

- Vad för typ av innehåll har vi?
- Hur presenteras det?
- Vad vill vi att besökaren ska fokusera på?

Animation:

- Hur dyker innehållet upp?

Ljud:

- Vilka ljudeffekter har vi?

D. Blicken (Handlar om den manliga blicken och hur kvinnor förväntas behaga den, även mitt under idrottsprestationer). Känsla: Provocerande/kritisk - hur designar vi för det?

- Kan vi skapa en känsla av att vara **iakttagen**?

Visuellt:

- Vad för typ av innehåll har vi?
- Hur presenteras det?
- Vad vill vi att besökaren ska fokusera på?

Animation:

- Hur dyker innehållet upp?

Ljud:

- Vilka ljudeffekter har vi?

E. Motståndet (Handlar om det aktiva motståndet mot damidrott). Känsla: Förtryck - hur designar vi för det?

- Kan vi få besökaren att känna på det **motstånd** kvinnor fått genomgå?

Visuellt:

Vad för typ av innehåll har vi?

Hur presenteras det?

Vad vill vi att besökaren ska fokusera på?

Animation:

- Hur dyker innehållet upp?

Ljud:

- Vilka ljudeffekter har vi?