Home
of 21st Century
Education

Museums in the 21st Century

Pioneers of Education

hands on!
int. Association of Children in museums

Part 1
Best Practices

Susanne Gesser

Part 2
Analyses on Children's Museum's Readiness

Tereza Dobiasova

Part 3
Practical Guidebook

Sarai Lenzberger

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Part 1: Best Practices
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Part 2: Analyses on Children's Museum's Readiness
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Part 3: Practical Guidebook
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Preface

We are convinced that children-focused museum work is key to replacing outdated education paradigms and fostering skills children need to tackle contemporary challenges.
Over the past 3 years, together with dedicated members and colleagues from all over the world, we have created the vision of children-focused museums, galleries, and science centers serving as change agents by being ***Homes of 21st Century Education***.

The main motivation behind this project is that children-focused museum work is still lacking international working standards and mapping.
Taking the Hands On! Minds On! Hearts On! concept as a starting point, we elaborated a global vision along with an accompanying guiding and quality assessment scheme.

Based on this newly developed framework, this 3-part publication features international **best practices** of state-of-the-art children-focused museum work, **analysis of the sector** and future challenges, and a **practical guidebook** for everyone interested in starting, running, or enhancing an organization dedicated to children-focused museum work.

We invite you all to join this vision to strengthen the impact of our sector. But most importantly to empower children to speak for themselves and create our future now!

Home
of 21st Century
Education

Part 1
Best Practices

Susanne Gesser

Museums in the 21st Century
Pioneers of Education

Part 1: Best Practices

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Introduction

We at *Hands On! International Association of Children in Museums* have made it part of our mission to define quality standards for museums, cultural and exhibition venues, as well as science centers. These are designed to serve as guidelines for innovative, future-oriented, inclusive cultural work with and for children.

Our association, together with the *European Museum Academy* (EMA), has already awarded an annual prize for excellent museum work since 2011, the *Children in Museums Award* (CMA). Each year, a candidate is selected and featured by a jury of experts. The finalists include only exceptional and particularly innovative, creative exhibitions, programs or museum offerings with and for children in museums. The focus on children and young people plays a substantial role in the selection. We seek especially those institutions that actively support children in their cultural learning and involve them in cultural work, as well as fostering their imagination and fantasy. A high-quality learning environment and learning experience are crucial.

To assist museums and related institutions in the process of transforming themselves into forward-looking cultural and learning venues for children and families, *Hands On! International* has developed the *Home of 21st Century education* over a two-year period. To this end, eight quality standards were established as criteria, which are described and presented in more detail in this publication (starting on p. 16). This is **Part 1** of three parts. Visions and basic considerations that led us to develop the certificate are presented in **Part 2: Analyses**. A two-stage process must be completed in order to obtain the *Home of 21st Century Education* quality label and is described here (*www.21stcenturychildren.eu*) and in the publication **Museums as pioneers of 21st century education. Part 3: Practical Guide Book**.

In Part 3: Practical Guidebook you will find further information about commitment, certification and the 'how to'. In addition to the main body of this first section, which includes a more detailed description of the eight quality characteristics and best practice examples, there is an introductory text by Sarai Lenzberger, long-time *Hands On!* contributor. It outlines the not-so-recent history of children's museums, beginning with the first ones established in the USA, then examining the European field in more detail. Moreover, it goes into more detail about the peculiarities and specialties of European children's museums (p. 12).

Claudia Haas and Petra Zwacka, both founders of children's museums in Vienna and Berlin and former jury members of the *Children in Museums Award*, reflect on the criteria that are decisive for the CMA award. In their text contribution, they also point out the changes and challenges facing children's museums on the threshold of the 21st century, and discuss the future viability of this specialized institution. (p. 16)

Here we would like to thank the sponsor of the *Home of 21st Century Education* project. Without the financial contribution of the **European Union (*Creative Europe Program*)** the project would have remained perhaps only a brilliant idea, and could not have helped museums for children to become innovative future-oriented places of culture.

Susanne Gesser
Vice president of Hands On! International Association of Children in Museums
Jury member of Children in Museums Award
Head of Junges Museum Frankfurt
DECEMBER 2021

A brief look into History of Children's Museums

By Sarai Lenzberger

At the end of the 19th century, the Brooklyn Children's Museum pioneered independent children's museums: For the first time, a museum developed its own educational concepts specifically for children. A few years later, the Boston Children's Museum opened as the second of its kind and during the 1960s ushered in a new museum pedagogy, banishing showcases and introducing the so-called 'hands on'. The world's first hands-on exhibition *What's inside?* was created by Michael Spock and marked a new area of children-oriented museum work, helping children's museums to mature and free themselves from the standards, functions and working methods of classical museums and develop an independent identity.

As a result, the concept gained popularity and support across the entire country. Today, there are over 250 children's museums in the United States, and the trend is increasing. In the wake of this movement, the Association of Children's Museums (ACM), the network organization for children's museums in the USA, also emerged in the 1960s. For European children's museums, ACM is particularly important because of its work for the recognition of children's museums as a museum genre.

European children's museums

In contrast to the US, European children's museums are rather young. Moreover, given a different tradition of cultural policy, additional concepts of children's museums were developed. Like the first European children's museum, the *Juniormuseum* of the *Ethnological Museum* in Berlin, which opened in 1970 and does not exist anymore, these were institutions of a symbiotic character: in-house children's museums within traditional museums. The *Junges Museum Frankfurt* (established 1971, opened 1972) and the *Tropenmuseum Junior* of the *Tropenmuseum Amsterdam* (established 1975), are probably the best known representatives and oldest of this type of children's museums still operating. The first stand-alone children's museum, *Le Musée en Herbe* – was an art museum for children in Paris opened in 1975. However, most European children's museums were established in the 1980s and 1990s. It is important here to emphasize the difference between the children's programs of traditional institutions, in-house children's museums and independent children's museums. It is, of course, gratifying that the children's museums in Europe triggered a boom of innovative education at traditional museums as well, and their work is also of great importance for the field. As a side note: This caused us to change our association's name to the *Association of Children in Museums*.
In-house children's museums are able to combine collection-based, action-oriented and audience-focused programs and exhibitions. They work with educational collections, presenting exhibitions and offering a rich learning program for intergenerational groups as families. By contrast, independent children's museums are free to develop their own programs and pedagogic work based on individual topics. They additionally have the opportunity of tackling whichever topic they believe particularly relevant for children in their region and community. Hence, these children's museums operate visitor-focused, which from a European point of view was a novelty in the museum sector. Children's museums recognized for the first time children and families as a distinct target group, and continue to develop special programs and types of education adapted to the needs of children. There are countless types of children's museums: from independent houses, children's museums connected to traditional museums (in-house children's museums), to mobile children's museums and temporary initiatives such as pop-up museums and similar temporary projects.

So what is special about children's museums?

Although varied, there are a few distinct characteristics of European children's museums, which naturally can also be found in some institutions outside of Europe. However, this list might not be exhaustive.

Diversity

European children's museums are very diverse, leading to a highly heterogeneous landscape. This is closely related to the cultural, social and political diversity of European countries. Each country has its very particular identity, encompassing its history, cultural heritage and language, which leads to the many different approaches in the field. Most children's museums developed out of national and regional initiatives, and due to language barriers – and more importantly to cultural and political obstacles – there is no such thing as one core concept that applies to all European countries. Confronted with such a diverse audience and topics often rooted in very regional issues, most concepts for children's museums are not simply transferable without the need of major adjustments to the living reality of local children.

Content/Topics

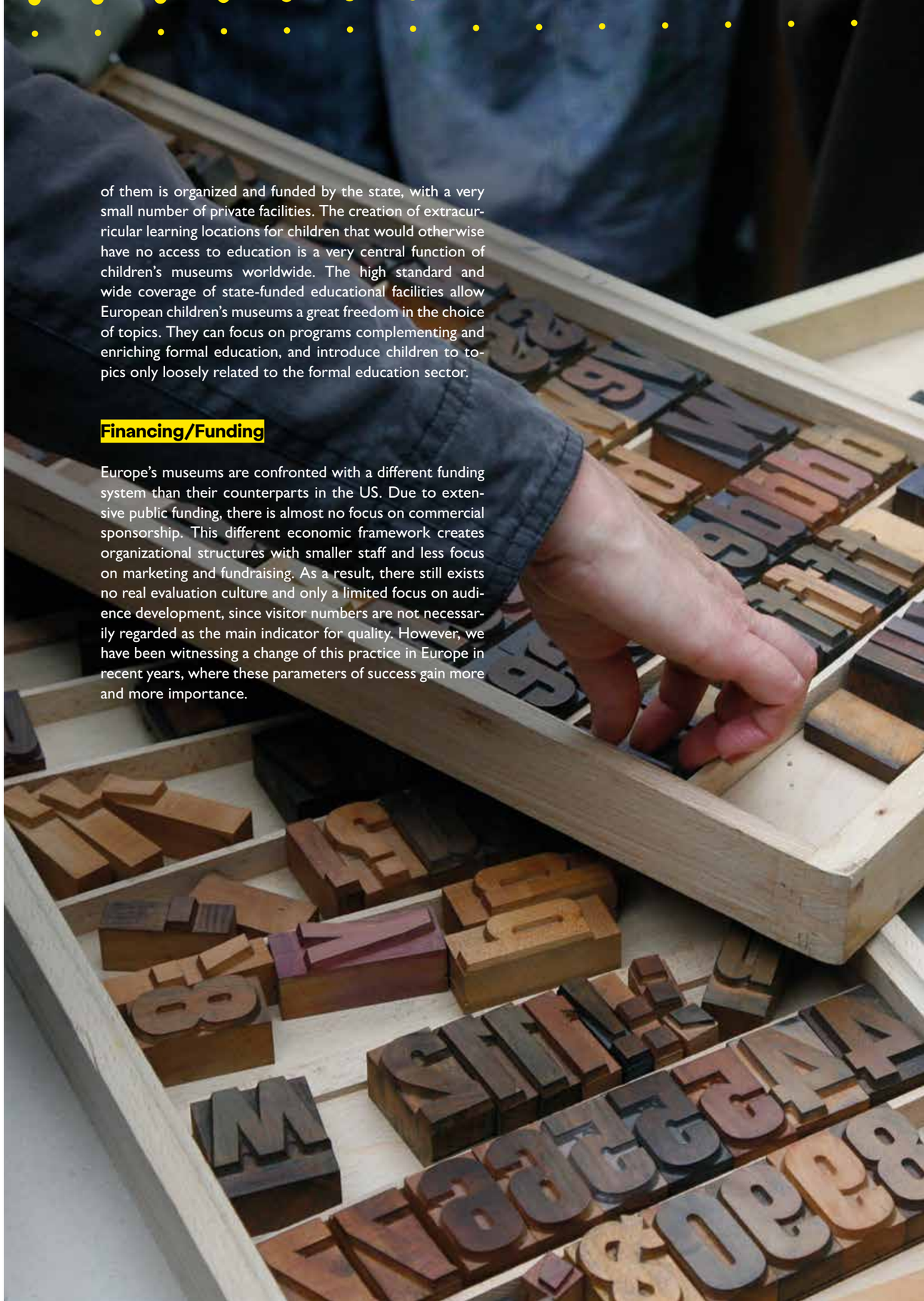
Visitors are given the opportunity to try out and develop new methods, to critically address and deal with current issues. Children's museums develop their content based on the everyday life of their target group. This makes it possible to quickly react to current topics and concentrate on content relevant to the target group. By creating a familiar environment, children's museums reduce inhibitions and increase accessibility. Current children's museums focus on broader topics such as ethnology, art, history, science. and follow the approach of offering multiple perspectives on one issue, by asking critical questions and demanding reflection on one's own behavior.

Educational aims

Even though Europe's educational systems (including pre-school facilities) are as diverse as Europe's countries, they have one thing in common: the vast majority of them is organized and funded by the state, with a very small number of private facilities. The creation of extracurricular learning locations for children that would otherwise have no access to education is a very central function of children's museums worldwide. The high standard and wide coverage of state-funded educational facilities allow European children's museums a great freedom in the choice of topics. They can focus on programs complementing and enriching formal education, and introduce children to topics only loosely related to the formal education sector.

Financing/Funding

Europe's museums are confronted with a different funding system than their counterparts in the US. Due to extensive public funding, there is almost no focus on commercial sponsorship. This different economic framework creates organizational structures with smaller staff and less focus on marketing and fundraising. As a result, there still exists no real evaluation culture and only a limited focus on audience development, since visitor numbers are not necessarily regarded as the main indicator for quality. However, we have been witnessing a change of this practice in Europe in recent years, where these parameters of success gain more and more importance.



Can Children's Museum Survive the 21st Century?

By Petra Zwaka and Claudia Haas

For almost three quarters of a century, children's museums were the only museum type that exclusively welcomed and served children and their families. By reflecting and adapting to the constant changes in society and their surrounding communities, as well as embracing the newest pedagogical methods, they were highly successful institutions throughout the 20th century. However, this unique position significantly changed at the beginning of the 21st century. They were confronted with a cultural landscape in which children became a much sought after audience by all museums.

Today, it is a familiar scene to observe children sitting with their drawing pads in front of famous paintings or using interactive installations together with their parents in science museums, and school groups have access to the newest equipment in the labs of natural history museums. Creative encounter spaces, children's trails through exhibitions or even interdisciplinary children's museums are now considered state of the art. Once a distinctive and unique feature in the concept of children's museums, the hands-on principle now belongs to the general repertoire of museums, regardless of its mandate or provenance. Since classical museums have started targeting a young audience, children's museums have lost their exclusivity. This poses the question of the relevance of children's and youth museums today and in the future.

When and why has this fundamental change in museums taken place?

Children were discovered as potential audiences during the last quarter of the 20th century. Major reductions in public funding at that time pressured museums to demonstrate 'healthy visitor numbers'. Growing visitor numbers were increasingly seen as indicators that museums were successful. By inviting school children, classical museums were able to open up to new communities. This additionally helped demonstrate the museum's relevance in communities with rapidly changing demographics.
Serving new audiences, the museums had to adapt to these new target groups by introducing action and interaction into their exhibitions, workshops, and child-friendly programs. These museums copied methods previously used exclusively by children's museums. Children´s museum try to compete with this development, especially considering that other museums are financially better equipped in terms of resources and can offer big-budget blockbuster exhibitions as well as more advanced facilities.

What are the consequences for children's museums?

These new developments can best be illustrated by the winners of the *Children in Museums Award*, established in 2011 to feature the best children's museum world-wide.[1] First only called *Children's Museum Award* quickly adapted to the new situation in 2014 when it changed its name and opened up to applicants from all museum types, reflecting the wider range of institutions for children in today's museums.

The significant shift in the structure of competing museums in recent years needed to be taken into account.[2] The number of applications from children's museums had significantly decreased while those from other museums continued to grow. Now, representatives of practically all museum types – from science museums, natural history museums, historical museums to art museums – are in competition with traditional children's museums.
The great diversity of museums in terms of their financial and organizational potential made it difficult for the jury to judge small, underfunded children's museums competing with big national or regional institutions. It was necessary to define objective criteria giving small institutions with limited resources a chance to compete.

The jury agreed on the following criteria:
- Innovation
- Creating immersive learning environments
- Embracing and reacting to the Digital Revolution
- Creative ways to use collections
- Addressing contemporary issues
- Achieving social impact
- Participation

Innovation has been a hallmark of the children's museum movement since its early days, but what was once a groundbreaking idea has become mainstream. Interactive installations as well as programs offering self-directed learning can be found nowadays in most science and natural history museums as well as historical museums. So, what are the new creative ideas implemented in museums that can be judged as being innovative?
Creativity, action and interaction, using artistic-aesthetic methods, play involving all the senses, and connecting all this with intercultural and global learning – these are a few of the key words associated with today's innovative museums focusing on children. Most importantly, it is the museum that takes risks, leaves beaten paths and seeks to be a pioneer, changes paradigms and serves as a model to other institutions that convinces the jury to judge a museum as innovative.

Immersive learning environments aim to turn the museum visit into a personal, emotional experience. Creative environments can totally captivate children, encouraging them to employ all their senses and stimulating both curiosity and the thirst for learning. Thus, the scenography implemented in children's exhibitions and areas should be designed to convey a message as well as a content. The importance of creating beautiful aesthetical environments has increased immensely in recent years, as applications for the award have shown. Most of the museums now employ young artists, also well-known designers, and architects to design their exhibition areas, much improving the quality of work compared to earlier times.

Bridging the analog and digital world is one of the most important challenges for children's programs. Concepts should aim at helping children born in the digital age to learn healthy ways of using their devices and to better understand the difference between the real and digital world.
Convincing concepts in children's museums help young people shift from being users and consumers to becoming creators and programmers—for example, by making animated films, podcasts, or videos. Digital programs in museums should differ from those that can be played at home by young people. Preferably they should include teamwork, bridging analog and digital creation.

Creative ways to use collections has become an important criterion as more and more classical museums with large collections reach out to children and families. In recent years, radical approaches on how to engage a young audience with the museum collection have emerged. Where traditional museums provide information that visitors merely absorb, these museums have reversed the roles: here, young visitors are invited to investigate and research the collections, find their own stories and interpretations.

Addressing contemporary issues through daring, demanding themes
As the youth of the early 21st century becomes more and more political, exhibition topics should be chosen to follow the interests of the young generation: ecology, climate change, pollution, migration, pandemics. Exhibitions should help these audiences distinguish between facts and fake news, stimulate critical thinking and encourage a more global view on contemporary issues.

Achieving social impact – being meaningful for people's lives
Best practice museums focus on how to respond to the needs of different communities. Through partnerships with community-based organizations, welcoming programs are developed that keep in mind the special needs of this potential audience.
These museums see themselves as places of social encounter, where families can spend quality time in a safe environment. They serve as meeting places for old and new citizens, enhancing cultural exchange and mutual learning. Moreover, by adding new narratives, they awake curiosity through different perspectives that can enrich children's lives.

Participation – children as experts
Redefining the role of children in museums requires a very radical approach. Children should not simply be seen as small visitors who must be safely guided through galleries. On the contrary, they are to be understood as competent young people engaging with institutions through their ideas and creativity. Some museums have implemented advisory boards with young people, invited them to contribute, or even co-create exhibitions and try out the role of curator.
These programs are usually very demanding for the museum staff. They require a museum management to be open and ready to take risks, capable of entrusting the children's competences, patient and willing to invest the adequate amount of time.

Many exceptional applications over the past ten years from children's museums, as well as from children's areas and programs in other museums, have met these criteria.
The question arises: How can children's museums survive in this contested museum landscape where more and more museums focus on families and children? The best chance of survival is to build on their strengths instead of constantly searching for new paradigms.

In contrast to traditional museums, children's museums have the opportunity to focus on and serve one specific target group. These institutions best know the needs of their community, can sense changes in society and in the lives of children, and react accordingly. Children's and youth museums have a long history of dealing with demanding themes such as death, illness, sexuality, gender and migration. No theme is too difficult for young people, when addressed in the right way. Staff must have the sensitivity to transport topics in a child-friendly form, creating a safe and inspiring environment.

The children's museum of the 21st century must be a space for social interaction and intercultural dialogue, where to involve social issues such as such as exclusion, increasing poverty and a society shaped by diversity and migration. It is not about constructing a children's world, but about taking children and young people seriously, with the goal of helping them become tolerant, respectful citizens.

To defend their unique position museums must
- offer best quality
- expand programs to different age groups
- reach out and involve underserved communities
- strengthen their relationship with the educational system
- seek new pathways to widen their subject matter
- take risks and focus on contemporary issues
- be self-critical
- continually rethink and if necessary change methods
- reflect on their mission and redefine it if needed
- never be satisfied with their work, but constantly try to improve it.

In light of global and economic crises, future children's museums will all need to realize their full potential in order to prove their value as essential cornerstones in the cultural and museum landscape of their respective countries. The question is: *how*? This question can only be answered through the active exchange between the people involved – locally, nationally and internationally.

1 The award is presented by *Hands On! International* and the *European Museum Academy*.
2 Petra Zwaka and Claudia Haas have both served as jury members from the very beginning.

Home of 21st Century Education Museums

By Susanne Gesser

8 Quality Characteristics

1 Door to Culture
2 Learning Through Play
3 With All the Senses!
4 A Better World
5 Bridging the Gap
6 Be Heard!
7 Digitally Aware & Active
8 Constantly Changing

Since its founding in 1994, *Hands On! International*, an association of participating children's museums in Europe, has been lobbying for the idea and spread of children's museums as well as providing concrete support, advice and assistance to newly founded museums. Conferences are held every two years, which serve both as an exchange forum among the children's museums and offer a platform for the further education and professionalization of museum staff. Here, current topics and trends in the scene and related fields are repeatedly discussed and tested for their suitability. The *Children in Museums Award*, which was co-initiated by our association, has been awarded annually (with one pandemic-related exception in 2020) to a museum for its excellent children-focused museum work since 2011.

The association has now developed the *Home of 21st Century Education* quality certificate. Vital and inspirational for this were the reflection on the history of children's museums, as well as the research by Claudia Haas and Petra Zwacka (see p. 16–19) presented at the 2018 *CMA awards* in Malta and at the 2019 *Hands On!* conference in Frankfurt. Eight quality characteristics have been identified as guidelines for a *Home of 21st Century Education*, which are described and presented in more detail below. Three best practice examples in each category illustrate these eight criteria. They are all – with one exception – institutions that have been either winners or short-list candidates for the *Children in Museums Award*. In this way, 24 of the world's best museums for children are featured here, all standing out like beacons in the diverse cultural and museum landscape, and offering guidance to other institutions on their way to becoming a *Home of 21st Century Education* themselves.

Home of 21st Century Education institutions can be, or transformed into, a wide variety of extracurricular cultural places. Children's museums exist in many forms: independent children's museums, children's museums integrated into traditional museums, mobile or temporary museums. Likewise, there are museums with their own department, exhibition rooms, programs or with a strong orientation towards families with children and young people. Science centers, as well as cultural centers and institutions, art galleries, educational centers, exhibition venues, libraries, or archives with a focus on children can also become a certified *Home of 21st Century Education* institution.

1. Door to Culture

An easily accessible public place of joy, beauty and imagination for everyone. It is a public haven of well-being and enjoyment, heritage, aesthetics and imagination, which serves as a gateway institution into cultural life.

Common to all *Home of 21st Century Education* institutions is that they are public places and threshold-free. They are available without access restrictions, mostly or completely barrier-free, and have regular opening hours. Ideally, these places are centrally located and easily reachable by public transport, so that children can get there safely even without adult accompaniment. Optimally, there are no entrance fees or charges, so that every child can participate regardless of family income. Special (mobile) socio-cultural programs and projects, outreach cultural work as well as community work should specifically address disadvantaged children and their families, and invite them to participate and complement the work of the institution.

The institutions are characterized by a connection to their culture and cultural heritage (both tangible and intangible), didactic programs and exhibition areas, as well as interactive hands-on stations for children and their families. Cultural learning is an essential part of a general education, enabling every individual to participate in society and access the rich treasure of historical and contemporary arts and media; to experience and appreciate diversity, and to express themselves in a differentiated way. It is important to begin and continue with arts education as early, diverse, and in as many places as possible. The *Home of 21st Century Education* institution is a very special place for cultural education because it places modern, future-oriented cultural learning at the heart of its activities. Participation, diversity, inclusion and overcoming social inequality are all part of the fundamental approach of *Home of 21st Century Education* institutions, as well as the liberal democratic principles of the European society.

The architecture of the space should take into consideration the abilities, needs and possibilities of the target group and have the child as its central focus. Children need safety and protection for their activities, which should be considered together with the structural and architectural environment. Light and visibility conditions should provide good orientation in the room and simple, understandable signage should guide visitors. The dimensions, colors and acoustics of the rooms are also important, and should radiate a positive, pleasant, inspiring and fear-free atmosphere. Since children love to conquer and shape their environment, it is helpful if they find elements in their surroundings that can be moved or modified. The architecture should additionally offer spaces for interaction, where encounters and movement are possible. It is a place where children, young people and families come into contact with culture and the cultural heritage of the region and its inhabitants, in all its forms and without prejudice. This means that people with no previous knowledge or experience are also welcome, and are even especially addressed. The focus is on the target groups: family and caregivers /children/ youths. Often such a place enables the very first encounter with culture and cultural heritage outside the family milieu and can be formative for a child's development.

The following three best practice examples represent different types of museums: the independent *Children's Museum in Graz*, the *Junges Museum* as part of the *Frankfurt Historical Museum*, and the *Rijksmuseum Amsterdam* with its diverse outreach program for children, schools, and families.

FRida & freD Kindermuseum
Graz, Austria

(CMA-Nominee 2012 + 2014)

Opened in 2003 in a modern, purpose-designed building set in a park, the museum serves children aged 3–14, with annually changing exhibition topics. It follows an innovative approach by creating two exhibitions on the same demanding topic for two different age groups: ages 3–6 and ages 7–14 and is moving forward by asking children to evaluate and develop new exhibitions. The creative programs of the children's museum include a summer school of museology for the youngest children, garden parties, and a learning laboratory for primary school children. Much effort is devoted to scientific research, in co-operation other education-focused institutions. The museum is an important cultural hub in the region and attracts children from neighboring countries.
fridaundfred.at/en/

Junges Museum
Frankfurt, Germany

(CMA-Nominee 2018)

The *Junges Museum Frankfurt* was opened in 1972 as a branch of *Frankfurt's Historical Museum*. Its aim is to confront the present-day visitor with a past situation, represented by historical artefacts. All exhibitions are created especially for a young but heterogeneous audience, combining original objects from the educational collection representing everyday culture with hands-on interactive displays. Additionally, the *Junges Museum* has created 'family trails' leading through all the permanent exhibitions of the *Historical Museum*, with an array of hands-on stations for families installed at, or in close proximity to original exhibits or object groups. The combination of a children's museum and a traditional city museum with family trails and children's activity stations provides an enjoyable learning experience for the whole family. The museum has succeeded in engaging children of a variety of ages within a museum conceived for a general audience.
junges-museum-frankfurt.de/en

Rijksmuseum
Amsterdam, The Netherlands

The *Rijksmuseum* is the national museum of Dutch art and history. The mission of the museum is to be an open, welcoming place where visitors feel at home and experience objects, material and immaterial heritage, and stories relevant to their lives. Children and families play a central role in the museum and its educational program. It offers a wide range of activities for families and schools, both off- and online. There is a digital family game with eight mysteries to solve, four sample routes for families to follow through the museums, a free *Rijksmuseum* App as well as guided tours for students of all ages. At the education center *Tekenschool* the focus is on 'learning to look by doing', with workshops and courses designed for various age groups. It has three studios: a visual arts studio, a photography studio and a Golden Age theatre. This historical theater workshop, featuring Hugo de Groot or Nova Zembla titled *You & the Golden Age*, is designed for families with children.
rijksmuseum.nl/en/families-and-children

2 Learning Through Play

A home of interact*i*ve self-learning, a place to try out the unknown, be astonished and use your imaginat*i*on. I*t* is an educat*i*onal laboratory and incubator of contemporary educat*i*on, developing and test*i*ng innovat*i*ve educat*i*onal pract*i*ces. I*t* is cont*i*nuously creat*i*ng and improving Hands-On! Mind-On! Heart-On! experiences, offering play-based, mult*i*-perspect*i*ve and interact*i*ve learning.

Even if it often seems otherwise, when children play they are doing serious work. Play is the way they learn to express their feelings, use language and acquire social skills. Through play, children discover their environment and the world, find out how things work, what they are used for and what their purpose is. Play can take many different forms, helping children develop, practice and learn basic skills and abilities. This is why opportunities and environments encouraging play are a cornerstone of all *Home of 21st Century Education* educational venues and exhibitions. These are imaginative experiential spaces offering a range of insights, and offering its visitors a field of experimentation and experience. But they are also places of learning, and can have an important role in imparting knowledge if they are innovative, and create play and learning situations based on current learning psychology and pedagogical research. Didactically, these worlds of experience should correspond to the intellectual abilities, tactile and movement needs children have accordingly to their age. The topics of the exhibitions should be scientifically-based, multi-perspective and elaborated with great care that is: they take their visitors seriously. Appreciation and respect for the child as an individual are an important basis for the design of the spaces.

Every *Home of 21st Century Education* venue is also a social space, offering a variety of sensory experiences and impulses for learning. It is a space animated by children and families bringing their individual knowledge, expectations and needs into it. Learning with all the senses, social learning and cooperation are important components of the educational work; this can be supported by combining play and self-learning, for example. Through play it is possible to practice social interaction, get involved and learn together – even without prior knowledge or great expertise.

It is crucial in designing the learning environment to provide visitors with opportunities for independent, active, and unrestricted movement, while allowing them to determine for themselves the sequence and depth of their engagement with the exhibition. The learning venue focuses on children and their families. It aims to make life understandable in a complicated world with its diverse cultures, but also to astonish visitors and awaken the understanding, in an age-appropriate way, that the surrounding world is not simply 'there', but has been created and can therefore be changed and improved. It should also convey the socio-cultural context in which people live and work, today and in earlier times. Museums and other cultural venues have the unique opportunity to employ objects and cultural heritage in illustrating technical, scientific, cultural and social development. In connection with museum objects, interactive elements and role-playing can transport children into earlier times, other cultures or situations. As active players they can inform themselves, ask questions and have fun discovering another era, culture of a habitat, or a situation in the 'adult' world. Designed learning environments or staged spaces make it possible to slip into roles and experience historical everyday life or the actual world through interaction. In role-playing games, a background story helps experience past living environments. This can prepare children for life and promote social and emotional development. Through their own play and action, it is possible to initiate learning processes about history.

Each child's individual background and experiences are decisive, and their ability to engage comfortably with an environment serves as the foundation for new experiences. By learning about history and culture, children can better understand their society, as well as their parents and grandparents, thereby developing a deeper awareness of their own roots. These reflections and experiences, the expansion of knowledge, gain of insight and self-worth are all linked to fun, activity and the chance to do, or try out, something one has never done before.

All three best practice examples place interdisciplinary and multisensory, playful experiences at the heart of their exhibitions and installations. Each finds its own way to translate their content into contemporary forms of learning.

NEMO Science Museum
Amsterdam, The Netherlands

(CMA-Nominee 2016 + 2021)

The current exhibition *Humania* provides innovative and interactive ways of introducing complex topics to young learners through age-appropriate scientific, physiological and biological approaches and a combination of analog, participatory and digital experiences. There are many stations where visitors can be actively engaged, but others which invite more private discussion and reflection. The exhibition uses a personal approach, starting from the personal stories of diverse people, to explore one's own perceptions, opinions, beliefs and emotions. Some exhibits touch on sensitive topics (sex, death, exhibiting human remains). The *Forum* is a distinctive program where visitors can participate and share ideas in supervised dialogue on themes such as climate, nutrition and health.
nemosciencemuseum.nl/en

Museum of Technology
Helsink*i*, Finland

(CMA-Nominee 2021)

Founded in 1969, the *Museum of Technology* is a national museum dedicated to science, technology, industry and innovations. Its mission is to increase participation and accessibility to technology and technological heritage. Through its various programs, the museum aims to enhance understanding of the technologies that shape our everyday life. The current exhibition is aimed at children between the ages of four and nine. Design principles include multidisciplinary, multi-sensory and multiple ways of interaction, drawing upon the knowledge and experience of technology children already have. Objects from the museum's and educational collection are used in showcases and hands-on exhibits, and five displays with fifty objects from daily life can be touched and studied with flashlights, magnifying glasses and measuring tape. For a science museum, the focus on objects and storytelling are new ways of engaging the interest of small children.
tekniikanmuseo.fi/en/

Museum of World Culture
Gothenburg, Sweden

(CMA-Nominee 2016)

The *Museum of World Culture* is particularly interested in all subjects that concern young people. The first permanent exhibition in the museum's history targeting children between zero and twelve years old and their accompanying adults was created in 2013. Titled *Together,* it is about the fantastic but challenging experience of being together: big questions of human existence are mirrored through objects from the collections, chosen in an interactive process with representatives of the target group. The exhibition aims to encourage curiosity, strengthen abilities to communicate, and share experiences. Themes include Understanding Each Other, Agree to Disagree, Fit In and Being Without. The museum uses a wide range of activities to evaluate its performance. Quantitative and qualitative studies on the number of visitors, age-profile, number of school lectures and visitor experience of exhibitions and other programs are carried out regularly.
varldskulturmuseet.se/en/

3. With All the Senses!

It broadens children's horizons holistically through meaningful, multidisciplinary experiences, inviting children to develop their talents and skills based on the Hands-On! Mind-On! Heart-On! principles.

Holistic learning is an individual, self-determined and sustainable process where learning with hand, head and heart are connected, and in which children can learn playfully in an action-oriented way and with joy.
Brain and intelligence research teaches us that our brain is the central organ of thinking, but also of all control processes in humans. There is a constant exchange between the right and left hemispheres of the brain – thus thinking, experiencing and feeling are interconnected, which means our brain works holistically. By collectively challenging their thinking, feeling, experiencing and acting, we respect children in their entirety. For this reason, a wide range of sensory experiences and bodily sensations are significant for human development. Varied and personal experiences are essential, ones that stimulate all the sense organs – eyes, ears, skin, nose and tongue. Grasping is a prerequisite for all understanding, and requires a concrete, real encounter between the child and its world.
Project-oriented and phenomenological learning is a fundamental approach that can only be supported, or made possible at all, through hands-on objects, interactive stations and workshop areas. There, children learn about different ways to express their ideas and feelings using a range of artistic, scientific and craft techniques. It is therefore of importance for learning processes to effectively link movement, sensory perception and cognition. An action-oriented, playful approach and the appeal to different senses are ways to involve the target group through active behavior. Self-initiative supports the grasping of connections, cycles and networks.

Relating to objects, and integrating authentic, historical, artistic or cultural objects from a didactic collection for instance, ensures a vivid, instructive process. The chance to look closely and intensively at things, touch or use them, and even examine or disassemble them into their individual parts, supports this process. Learning craft skills and acquiring abilities, as well as developing aesthetic judgment also belong to the educational content of *Home of 21st Century Education* institutions – along with, of course, the fun and the enjoyment of creating together. The productive encounter with independent, practical, experimental and guided work allows children to experience an expand their their own abilities and skills. Workshops give them the opportunity to test, develop and broaden their own artistic-creative competence through a shared experience. This free space – for thinking, acting, discovering – is part of the creative process. To anchor and promote holistic learning in the *Home of 21st Century Education*, it is important to consider the mental, psychological and physical diversity of children and to do justice to their individual strengths, abilities and weaknesses. To achieve this, it is essential to design learning processes in which holistic learning is understood as a constantly evolving interplay of sensory perceptions, thinking skills, movement and feelings.
The three selected best practice museums implement learning with hand, head and heart in continually new ways – very differently, but always in high quality. The immersion in other worlds and the self-determined productive encounter with the museum content is exemplary here.

Tropenmuseum Junior
Amsterdam, The Netherlands

(CMA-Winner 2012 + CMA-Nominee 2021)

The *Tropenmuseum Junior* was founded in 1975 as a museum only accessible to children aged from three to thirteen. It has since been transformed into a children's museum where families are also welcome and parent-children involvement is encouraged. Its former exhibition *Sabi Suriname* was advertised as 'an unexpected discovery'. Suriname's diversity, with ancestral roots in four continents, is the result of a shared colonial past still alive in the present day. Visitors took an elevator to a fictitious Suriname depot seven floors below ground, to find the country's real collection: a hidden closet that only opened for curious children. To make difficult content understandable for the young target group, various technical approaches were used including sand animation, interactive music, rhythm floor and soundscapes. The faces of Surinamese actors were projected onto wooden statues made by descendants of enslaved people, who relate their stories and present families with a question to discuss. Trained animators with a Suriname background and personal connections to the culture exhibited offered a guided program daily.
amsterdam.wereldmuseum.nl/en

Keppel Centre for art education at National Gallery Singapore

(CMA-Winner 2018)

The *Keppel Centre* operates as part of the *National Gallery Singapore*, and the exhibitions there are inspired by a selection of artworks exhibited in the permanent galleries. Their vision is to nurture future generations of art lovers and critical thinkers by providing creative dynamic learning spaces and programs for children to learn about and enjoy art. Programs dedicated to families provide inter-generational experiences, while for students the development of a critical mind is central to empowering their diverse viewpoints. The involvement of local artists who are inspired by the museum collections, in collaboration with the dedicated education team, has led to the production of excellent, well-designed exhibitions for younger visitors. With its free admission and mantra 'Children first, parents second!' the *Keppel Centre* is an excellent example of an institution within an art gallery, introducing children to art at an early age while acknowledging the importance of lifelong learning.
nationalgallery.sg/sg/en/visit/visitor-information/keppel-centre-for-art-education.html

Nordiska museet
Stockholm, Sweden

(CMA-Nominee 2021)

The museum aims to help children and pupils of all backgrounds feel connected to—and invested in—the cultural heritage that has shaped Sweden and the Nordic region. By offering knowledge and experiences from the past, it provides them the tools to understand the present and shape their future. Through identifying with stories about children in previous centuries, they gain perspectives on their own existence. The exhibition is designed as an adventure, inspired by escape rooms, and based entirely on historic events and true stories from the museum archives. Stepping inside the exhibition, children become co-creators in the narrative: Their mission is to rescue the memories of the children they encounter in the narrative. More than 200 objects relating to children's lives over 150 years are woven into a simple dramaturgy, in a setting inspired by magical worlds. The rooms, props and objects are brought to life through interactive audiovisual media. At the end of the exhibition, visitors can submit their own memories to a *Memory Machine*, where they are stored in the museum's digital archive.
nordiskamuseet.se/en/

4. A Better World

A place where children are seen as an equal part of society, imagining and changing the world into a better place. It fosters education for humanity by empowering its visitors to build healthy relationships between individuals, community and society, encouraging children to become co-creators and agents of change in society.

Every child has an individual personality, shaped by its environment. The education and development of children is therefore also influenced by different conditions. The first ten to twelve years of life are the most learning-intensive and developmentally rich years in a human life.

Children achieve the most lasting learning outcomes when they are actively involved in the process and encouraged to act, think, and experiment independently. Education is a social process and does not begin with institutionalized learning in daycare centers and schools; interaction and exchanges with adults and other children play an essential role. All participants in this process should be involved on an equal footing, or 'at eye level'. This process leads to the development of a stable society in which everyone feels connected and safe with each other, and their needs are met.

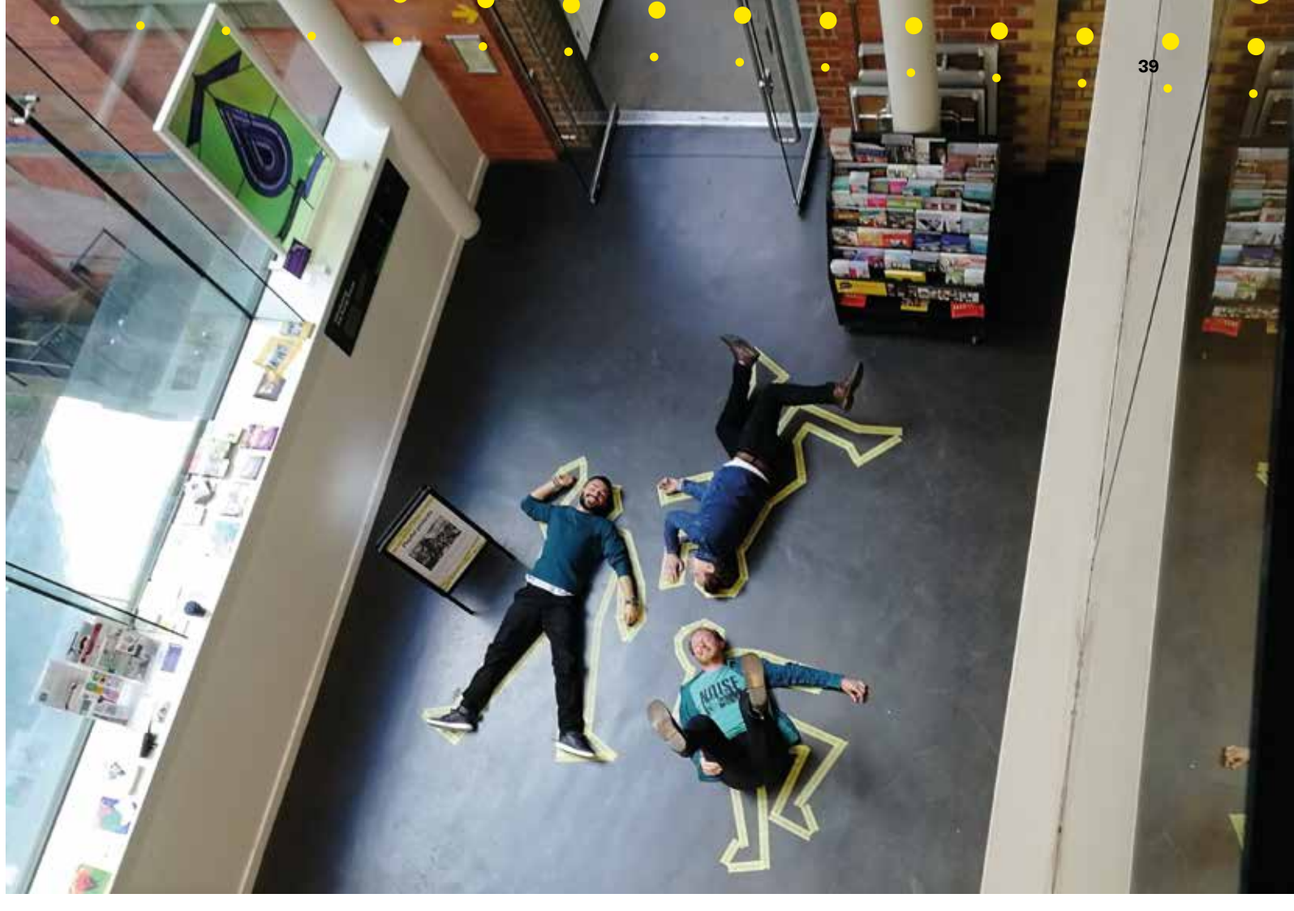
In a place of *Home of 21st Century Education*, whether in the exhibition or through the educational work, adult caregivers have the duty to respect a child's autonomy and behave sensitively towards them. In groups of children with different abilities, this diversity should be understood as an opportunity. In exhibitions or learning environments it makes sense to plan activities that can be solved in small groups: the community experience, the social moments and interaction with family or classmates, for example in role-playing, are enormously important and attractive for children. Not simply participation, but co-creation should shape these experiences.

Through play, children develop imagination, abstraction skills, self-confidence, different perspectives, foresight, frustation, tolerance, cooperation skills, creativity and solidarity at an early age. It is important to bear in mind that children already bring with them skills based on characteristics such as temperament and talents, but also on their personality and individuality.

Similarly, environmental factors play an important role in children's education and development. These factors include the cultural and social practices, norms and values of the society into which they are born. Education should be understood holistically, and reflected in a child's development. The holistic understanding of education has various dimensions: basic skills and value attitudes (cultural dimension) are combined with the acquisition of fundamental content knowledge.

Cultural education should be part of a comprehensive development. It promotes skills and abilities in various basic aesthetic competences, and also has a positive influence on a child's perception and creative abilities. A general aesthetic education forms the basis for self-reflection, self-worth and participation. Education for a sustainable development focuses on strengthening creative abilities, with the goals of practicing decision-making skills, perceiving and demanding opportunities for co-design, and assuming responsibility. It includes respectful interaction with one another, in which mistakes are also allowed. It is necessary to strengthen confidence in one's own ability to act, build resilience in order to deal with life's uncertainties and increasing complexities, and to retain a social and cultural openness.

Helping shape the environment and the world they live in, educating children to become responsible members of society and actively participate in it, as well as dealing with democratic values – these actions are at the heart of the activities and programs of the following three award-winning best practice examples.



Ker ImagiNation
Dakar, Senegal

(CMA-Winner 2019)

Ker ImagiNation is a children's learning and educational center, the first of its kind dedicated to creative learning in Senegal. It envisions is of an Africa powerfully led by young people, contributing to the economic and social well-being of their society. *Ker ImagiNation's* work supports children's empowerment through the inspiration of its children's programs. The multimedia exhibition entitled *Imaginer Dakar: La Ville par ses enfants citoyens* is the result of a collaboration with children from Yoff, the traditional fishing village where *Ker ImagiNation* is based. Thirty children benefitted from the fifteen project-based workshops on topics such as multimedia, city planning and architecture, which led to critical conversations involving their city, local neighborhoods and the efficiency of its public services. Issues raised included the absence of public playing areas, trash and waste problems, and safety. Through photos, video and interviews, the children documented these with family members and neighbors.
ker-imagination.com/

Dutch Open Air Museum
Arnhem, The Netherlands

(CMA-Winner 2021)

The Restart program, designed for school children aged between eleven and fifteen,, focuses on the universal experiences of immigrants coming to a new country. It begins in the classroom by conveying basic knowledge about the reasons for migration. The children then expand this acquired knowledge in the museum, with experiences learned through game playing. Taking on the role of immigrants coming to a new country, they explore the open-air museum, guided by tablet computers, and face challenging new tasks like learning a new language, tasting unknown food or adapting to new cultures. They are encouraged in the game to interact with museum staff, visitors and each other. The museum curated the program with deliberation and great care: consulting teachers and migrants, they decided to make 'rejection' an integral part of the game. Only by experiencing frustration and disappointment for themselves can students gain insight into the situations and difficulties faced by migrants. A careful and thorough evaluation after the game concludes the program.
openluchtmuseum.nl/en/

People's History Museum
Manchester, United Kingdom

(CMA-Nominee 2021)

This museum is the national museum of democracy in Britain, telling the story of its past, present and future. It provides opportunities for people to learn about, be inspired by and get involved in ideas worth fighting for, including equality, social justice and a fair world for all. These ideas are brought to life through collections, exhibitions, events and learning programs. As the 'go to' place for democratic engagement, the museum aims to make sure people care about the world they live in, get involved in their communities, engage in the democratic process and use their right to vote. The interactive galleries allow all ages and abilities to explore through digital, tactile and playful ways. Throughout parts of the building, a set of self-led activities called *Playful Protest* can be found, which explore creative acts of civil disobedience, taking inspiration from real protests. A *Doodle Den* lets visitors explore the collections by scribbling and sketching in a relaxed environment.
phm.org.uk/

5. Bridging the Gap

It serves as a meeting place for all ages, bridging the gap between generations and fostering intergenerational dialogue and learning.

Interaction between children and adults is important for a child's social development. The child's encounters with other children and adults give the opportunity to develop and test skills in dealing with other people. Practicing group behavior, learning the ability to deal with conflicts, as well as expressing and understanding feelings helps children play a part and experience themselves in community with others. In the longer term, positive exchanges with others strengthen the self-confidence of children. Families are inherently intergenerational groups: adults of different ages who are related to, or in friendship with each other; children of different ages, from infants to teenagers. However, in everyday life, our society generally offers few points of contact between the generations, unless these relationships are actively sought and maintained.

The grandparent generation often has skills and abilities that are no longer taught in school. Knowledge passed on from generation to generation, such as changes in language, living environment and everyday life can be learned through an exchange with older generations. Senior citizens can convey living history through their stories and interaction with children. Their handicraft or daily life skills are part of our culture – contemporary witness projects clearly show the importance and sustainability of oral history.

A *Home of 21st Century Education* institution can bridge the generational gap and harness it for the benefit of children and youth through targeted programs and opportunities. When it comes to the question: "What was it like when you were little?" children are very inquisitive, take a keen interest and listen closely. Organized 'Senior days' allow the older generation and children to engage in conversation. There may also be older staff members in the educational team. Mutual understanding, patience and composure in dealing with each other are valuable prerequisites. In addition to doing things together, a lot of time should be set aside for intensive conversations. Positive encounters with the older generation can be important relationship experiences for children and young people, as well as for the senior citizens: the seniors feel needed, and the children and young people realize they are being listened to and taken seriously. Lost or no longer existing contacts, especially to older relatives, can be broadened by new forms of getting together – in order to let as many as possible enjoy positive intergenerational experiences.

In addition to the direct intergenerational exchange, these three selected examples also offer encounters with earlier generations, which is only possible through the museum programs.

Den Gamle By
Aarhus, Denmark

(CMA-Nominee 2019)

The mission of the *Den Gamle By* (The Old Town), a historical open-air museums, is to reach as many different people as possible, and be a place children want to visit. The free entrance for all under eighteen years old includes play days, handicraft and cooking activities, and joining in family role-playing. There are school visits, holiday camps and programs for children with special needs; children aged from twelve to fifteen act as fruit sellers in period costumes and sell products to visitors. Assisted by trained staff, they gain the courage to interact and talk with strangers. Costume and role-playing events let children experience what life was like 100–150 years ago and encourage discussions about life today. Creating an historical atmosphere is central, including sensual experiences such as being in a room without electricity, feeling woolen fabric on bare skin, and the draught from doors and windows of pre-modern living. Children aged between nine and fifteen take drama courses and study different historical periods to work with trained actors and visitors in bringing history to life.
dengamleby.dk/en/

National Archive
The Hague, The Netherlands

(CMA-Nominee 2019)

In the exhibition *Who Am I, Who Were You?* at the National Archive children experience how the time, place and circumstances they were born into influence the opportunities and choices they have – or are denied. Themes include: *Right and Wrong in the Second World War*, *Leaving House and Home*, *Trade and Slavery* and *Fight for your Rights*. Armed with a tablet computer and a flashlight, small groups follow a designated route through the exhibition. Each group adopts the identity of a historical figure and discovers the choices and restrictions faced by their character through an 'archive cave' of letters, photographs and documents. The exhibition is a stimulating learning environment where children can examine original documents and reflect on their own values and life choices – comparing them with people living in different times and their perspectives. It is a good example of making archives more accessible and interesting to children, young people and families.
nationaalarchief.nl/en/explore/who-am-i-who-were-you

Nationalmuseum
Stockholm, Sweden

(CMA-Nominee 2021)

The museum's vision is A Museum for All, with the aim of opening up the world of art to more visitors and promoting encounters between people and generations. In a new permanent space for children, the museum offers programs from pre-school up to high school age. The exhibition *Villa Curiosa* is a home behind the doors of an old cupboard, where visitors can make their own discoveries. In a multisensory setting, original art from the collection mixes with scenic props. A conscious decision was made to exclude written texts and digital screens, in order to promote a unique sensory experience. It is a very creative and beautifully designed space for families, who must co-operate if they wish to see everything. Cultural heritage must be continually re-interpreted. The museum seeks to enable this through a non-judgmental approach, which can be experienced in the tours and educational vision the museum has chosen: for more dialogue and storytelling, and by inspiring rather than lecturing.
nationalmuseum.se/en/villa-curiosa

6. Be Heard!

A place to interact and engage – where every voice can be heard. It is a responsive, audience-focused institution, where interactivity is at the heart of every visitor's experience. Social and cultural diversity is reflected in all its 'P's: in its people, program, products, promotion, place, partners, processes and prices.

The exhibitions and activities of *Home of 21st Century Education* institutions are audience-oriented and relate to the living environment and everyday reality of children. They seek points of contact in the lives of children and their horizon of experience. It is important to identify and interactively realize topics relevant and relatable to today's children.

Exhibitions suitable for children should appeal to their enormous curiosity, thirst for discovery, knowledge and the great interest children nurture in a wide variety of topics. In view of such a large range of topics, the selection process and exhibition conception should attach great importance to plurality and multi-dimensionality. For example, the parallels and contradictions of historical or technical developments, cultural processes and actions, should be made visible and emphasized by setting up different stations. Juxtaposing different perspectives, opinions or interpretations helps children to understand that their perception represents only one aspect, and that the same process can be perceived completely differently from another point of view. Multiple perspectives, diversity, inclusion – especially in social, cultural-historical and socio-political topics – are an absolute must.

Content should be prepared according to age, and presented in a logical context in order to activate children's prior knowledge. Activating children's own experiences is crucial for absorbing, connecting and converting existing knowledge into new insights. Learning psychology calls this cumulative learning, an aspect of self-directed learning. Children and young people should also learn at an early age to form opinions, exchange views, defend their positions and to tolerate those of others. Pluralism of opinion and the processes associated with it form the basis of liberal democracies. The acquisition of creative competence is central to enabling people – whether younger or older – to actively participate in the process of social change for the future and to help shape it effectively.

Accordingly, a participatory approach is of major importance. When a *Home of 21st Century Education* institution designs and develops its programs and presentations together with children and young people, it is offering them the opportunity to help shape their cultural venue. This can be achieved – for example – by establishing a Children Advisory board. Lower-threshold possibilities include inviting participants or visitors to create their own contributions within an exhibition, with the opportunity to expand it if necessary. In this way, children and young people are no longer perceived as mere consumers, but as creators who have special knowledge and can express and contribute ideas, desires and opinions. In accordance with the UN Convention on the Rights of the Child, Article 31, the children are thus given the opportunity to participate culturally, in particular to have a say in the content of their *Home of 21st Century Education* institution and to integrate their own perspective. Through collaboration, children can broaden their personal and social skills and are sensitized to community and cultural engagement.

The following three best practice examples demonstrate in an excellent manner how an exhibition and outreach program can be conceived, designed, and executed in an inclusive, multi-voiced, and participatory way.

Wereldmuseum
Rotterdam, The Netherlands

(CMA-Nominee 2021)

Superstreet is an inclusive exhibition held at the *Wereldmuseum* which is about the cultural diversity of Rotterdam, aimed at children aged between six and twelve and their families. The theme is 'living together', and the concept is based on the idea of an urban neighborhood environment where children discover and interact with different neighbors, stories and objects. The museum believes active participation engenders a sense of ownership and empowerment. Children discover diversity through the eyes of eight characters, each with their personal stories, built around themes ranging from war, migration and loss, to celebrations, dance and entrepreneurship. The exhibition relies on a variety of storytelling techniques and approaches, with objects from the collections, digital films, projections and animations and tactile, participatory play. Children and families truly experience meaningful activities on *Superstreet*.

rotterdam.wereldmuseum.nl/en/whats-on/exhibitions/superstreet

The National Museum of Science and Technology
Stockholm, Sweden

(CMA-Winner 2017)

Deviating from solely technical exhibitions, the museum has begun researching and conveying the how and why of society's commitment to technology. Moreover, it investigates how society can be changed through thought, and answers questions of how ideas originate in our brain. The exhibition *MegaMind* was created to be totally accessible, and with the involvement of the target group: children over three, with a focus on those aged between eight and twelve. It includes innovative approaches that seek to spark creativity and curiosity for neuroscience and the brain's extraordinary abilities, from a contemporary perspective. The program *FUNK-IS* involves tasks of varying degrees of difficulty, presented through text, speech, Braille and sign language – with students sharing their results in various designed ways. This model demonstrates that there has to be a permanent process of development and change, reflecting present-day questions, challenges and visitor needs.

tekniskamuseet.se/en/discover/exhibitions/megamind/

National Gallery
Dublin, Ireland

(CMA-Nominee 2021)

Children are crucial to the *National Gallery's* vision of providing an experience that inspires interest in, and an appreciation of art. Target groups range widely, from early years, pre-school, primary and secondary schools, to families, community groups and children with additional and specific needs. There are Sensory Baby Workshops and Sunday morning drop-in intergenerational workshops which are artist-led, flexible, support skill-sharing and include all materials. The *Apollo Project* is aimed at teens and young people, focusing on education, creativity and well-being. Teens have been involved from the outset in the brand identity and design, as well as the conception and evaluation of the programs. A recent project includes working with *LauraLynn*, Ireland's Children's Hospice, in collaboration with *The Abbey Theatre*. There is also outreach work with *Focus Ireland*, a charity working with those who are homeless or living in emergency accommodation. Children are informed of events through social media, family e-letters and on-site engagement.

nationalgallery.ie/what-we-do/our-organisation/collections-research/education-department

7. Digitally Aware & Active

It is digitally aware and active, embracing digital technology and helping children to navigate between reality and virtual worlds.

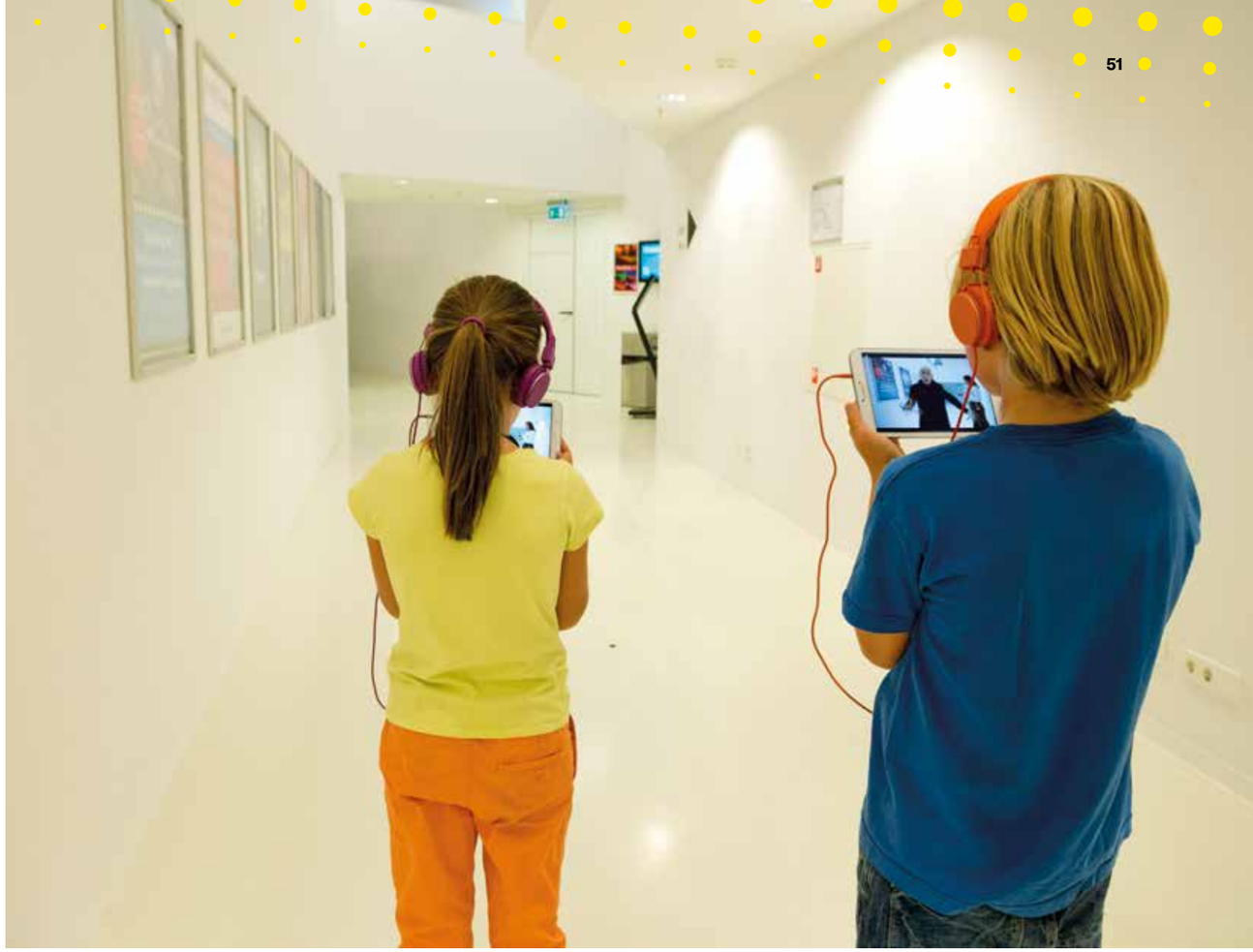
21st century children are growing up in a changing digital society. The digital transformation process permeates all areas of our lives, bringing new forms of societal organization, access to and the democratization of knowledge, new competencies and forms of communication. Concepts of community, opinion-forming processes and information or evaluation take on new meaning, because they are networked and simultaneously negotiated globally in a constant and ongoing discourse. Providing children with access to information, and in particular to the media, is enshrined in the *UN Convention on the Rights of the Child*, Articles 13 and 17. These articles also stipulate that child-friendly digital opportunities of social and cultural benefit to children should be created. An essential part of this is to empower children as subjects in their use of digital tools, which play a special role in the context of information and the expression of opinions.

The digital transformation presents also cultural institutions and children's museums with completely new challenges and opportunities: digital learning, new methods of teaching, and shaping social change are important new fields of activity. Digital learning enables participation and educational opportunities for all. It is self-determined, because children help shape the learning processes and can contribute their own strengths. With the help of digital tools, content can be conveyed in a lifelike, playful, and tangible way, offering the opportunity to stimulate discussion of topics regardless of time and place, and thus reach a broad target group. However, they can also be designed especially for a particular target group, or specific group of people. Created toward individual needs, they can provide inclusive and barrier-free access for groups that can not participate in analog formats, or can do so only with difficulty. Digital tools thus build bridges and create access and cultural participation for all.

Digital worlds open up spaces of opportunity, access to community and knowledge. *Home of 21st Century Education* institutions see themselves as active players shaping the digital transformation, employing digital technologies and forms of digital learning in an age- and target group-appropriate framework. Digital tools are not used for their own sake or for the sake of technology, but serve as contemporary formats for cultural learning.

In doing so, institutions act from a special position of responsibility and care: it is not only their task to enable children to participate in digital worlds, but also to equip and protect them with the necessary skills to do so. Children should be empowered to be agents of digital change themselves and to move purposefully in a digital society. Critical reflection on content and opinions, media literacy, and digital literacy are central aspects of a sustainable and holistic encounter with digital tools. Digitally active institutions provide children with age-appropriate and secure information and offer orientation in the digital world. They teach children how to inform themselves, critically reflect on information, express their opinions and share them with others. They help children find themselves in the digital society and thus increase their self-confidence in social interaction.

Employing the latest trends and state-of-the-art digital technology, these three best practice museums focus on learning about the digital transformation and enhancing the digital literacy of their visitors.



EPIC the Irish Emigration Museum
Dublin, Ireland

(CMA-Nominee 2017 + 2021)

The museum concentrates on an innovative approach to the use of digital technology as a learning tool. Twenty themed galleries fall under the headings of 'Migration', 'Motivation', 'Influence' and 'Celebration', with over 300 individual stories. The aim of the museum is to stimulate the interest of young people and invite them to be actively involved by using the different digital stations. Content is contained within numerous screens and audio-visual pods, where visitors actively swipe and tap to unlock and access information, as well as experiencing immersive reactions triggered by body movements. The museum feels that children and teenagers today are rightly called 'digital natives', and utilizes technology as an inspiring learning tool, catering for all learning levels and styles. Feedback computers at the end of the exhibition give visitors an opportunity to answer set questions about their museum experience and write their own comments.

epicchq.com

M9Museum
Venezia Mestre, Italy

(CMA-Nominee 2019)

The museum offers an interactive multimedia space dedicated entirely to children and their families, located inside a new M9 urban redevelopment district. *M9Museum* presents digital exhibits and features a variety of topics, including colors, 20th-century art, and 'sounds from around us'. The environment is designed according to Montessori guidelines – all exhibits combine games and storytelling, with a good balance between the use of digital media and hands-on activities, and are designed to stimulate imagination and curiosity. There are workshop programs for children aged between four and twelve, as well as for school groups and families. The museum is also developing an early learning program for infants from from zero to three years old years and their families, integrating exhibits with suitable contents. Class activities are divided into three main groups: Educational Laboratory, Activity Laboratory ('Thinkatorium') and special activities dedicated to robotics and coding.

m9museum.it/en/

Eye Film Museum
Amsterdam, The Netherlands

(CMA-Nominee 2018)

This museum embraces and explores new technologies, as well as new forms of filmmaking and presentation. It seeks innovative ways of presenting the richness of cinema specifically for children and youth, because this audience is particularly open to new forms of presentation. Great efforts have been made to include several interactive tools explaining the functionality of older devices. *EYE Explore* is an example of how it connects with the past, present and future of cinema in a playful and attractive way. There is also the *VR Film Set* experience, which can be watched in the museum or on a smartphone using the free *EYE VR-app*, transporting children to a film set in order to learn about current filmmaking practices. Film education is one of *Eye Film Museum* key focuses, stimulating the passion for and knowledge of film through learning to understand and use the medium.

eyefilm.nl/en

A *Home of 21st Century Education* is an open and learn-

8. Constantly Changing

Connects to global themes, but acts locally and is continuously adapting. It is a dynamic and evolving organizations, adapting and responding to the changing needs of local communities in connection with current global and local developments.

ing institution. It learns from children and listens to their needs and expectations. It takes into account their abilities and competencies, and empowers, supports and encourages them to become active members of society. Children are also given the opportunity to actively participate in culture and help shape the cultural venue, which is designed for children and is entirely geared to the specific target group.

Qualified, committed and motivated staff are the basis for a *Home of 21st Century Education* institution. People from all backgrounds and of all ages work together here on equal footing, in a collegial and respectful manner, regardless of their different lifestyles. Together they form a team with diverse professional competencies that complement each other and allow for different perspectives. They are continually developing the operation of their cultural space for children thanks to engaged creativity, the introduction of new topics and observation of the audience in its interaction – testing new forms and approaches in learning, and as such becoming experts for innovative education. They work in an interdisciplinary way and face the challenges of a constantly changing society.

The *Home of 21st Century Education* institution and its staff are in an ongoing development process, shaped and driven by their activities and the participation of the local community. Their goal is to be and remain an institution for the community and children with their families. A further goal is to reflect the diversity of society: in its staff, exhibition activities, program, and the collection. People not otherwise called upon or heard from are offered a platform here; marginalized groups are given a voice. Groups that usually have no contact with each other are encouraged to leave their social bubble, meet and exchange.

The *Home of 21st Century Education* institution is to be understood as a forum. It further assumes its responsibility as a center of education, discourse, culture and science, and works in the service of the public for a sustainable society. It advocates for a democratic, socially fair and sustainable world. The institution is also particularly open to learning from children and young people themselves, who bring a great amount of (digital) competence with them. They see children as experts on the digital world and its mechanisms, constantly grappling with new technologies and the digital transformation. In their orientation and tools, the organizations remain agile and responsive to change. *Home of 21st Century Education* institutions are also embedded in the local and regional environment, well-connected and thus remain relevant for learning and practicing participation and co-creation. They impact the city, the region, and support collaborative and democratic community learning.

These best practice examples are museums undergoing self-critical transformation, responding to the needs of their visitors, the surrounding urban communities, and the environment. They have achieved high relevance for children and families while being a responsible institution.

MUSEON
The Hague, The Netherlands

(CMA-Nominee 2021)

The museum is a dynamic, evolving institution that is constantly adapting and responding to the changing needs of local and global communities. Its permanent exhibition was renewed in 2016, and is now based on the *17 Sustainable Development Goals of the United Nations*. It demonstrates a clear approach to ethical, social and sustainable issues, with a mission to share in finding solutions for a viable planet. The combination of the ethnographical, historical, physics and natural history collections, its educational approach, interactivity, scenography, exhibition design and the use of innovative techniques is well-balanced. The active involvement of diverse audiences and communities, both local and worldwide, are exemplary, as well as its activities in the field of social inclusion and decolonizing of collections.

museon-omniversum.nl/en

Museum of Communication
Bern, Switzerland

(CMA-Nominee 2018)

With its exhibitions and activities, this museum is making a statement about the social and cultural effects of communication and its technologies. It is designed especially for children and school groups, and seeks to arouse their enthusiasm for the communication all around us by asking questions, telling stories and involving visitors in dialogue. The exhibition is based on the themes: 'Experience', 'Entertainment' and 'Education'. Integrated into the exhibition are specially designed stations for children between four and eight years old, where they can make discoveries on their own. Trained communicators are always present as hosts, bringing a personal dialogue into the room, while meeting the varying needs of visitors. The daily interaction between visitors and communicators means that content can be amended to meet changing demands. This 'dynamic curation' means that changes can be implemented on a weekly basis.

mfk.ch/en

MUZEIKO
Children's Science Centre
Sofia, Bulgaria

(CMA-Nominee 2016)

This is the first children's museum in Bulgaria and the largest in south-eastern Europe and the Balkans. The development and design process involved children, parents and teachers, as well as more than eighty scientists and research institutions in Bulgaria. Opened in 2015, the museum architecture uses green technologies to generate and save energy. The museum has over 100 interactive, hands-on exhibits especially designed for children, including energy-saving devices that also form part of the activities for children. At the center of the museum is a gigantic tree uniting the three floors. They feature archaeology, geology and anthropology in the past; nature, architecture and urban design in the present, and space technologies, energy and communications in the future.

muzeiko.bg/en

Children in Museums Award

The Children in Museums Award is an initiative that celebrates and recognizes outstanding contributions to engaging children up to the age of 14 years in the museum experience.

This prestigious award aims to honour institutions and individuals who have demonstrated exceptional commitment and creativity in making museums more accessible and enjoyable for our youngest audiences.

The Children in Museums Award was established in 2011 by the *European Museum Academy* and *Hands On! International Association of Children in Museums*.

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Home
of 21st Century
Education

Part 2
Analyses on Children's Museum's Readiness

Tereza Dobiasova

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Introduction

Deux et deux quatre / quatre et quatre huit /huit et huit font seize...

Répétez ! dit le maître

Deux et deux quatre / quatre et quatre huit /huit et huit font seize.

Mais voilà l'oiseau-lyre /qui passe dans le ciel

l'enfant le voit / l'enfant l'entend/ l'enfant l'appelle:

Sauve-moi / joue avec moi / oiseau!*

—

Two and two make four
Four and four make eight
Eight and eight make sixteen…
Repeat! says the teacher
Two and two make four
Four and four make eight
Eight and eight make sixteen…
But there is the songbird
Passing by in the sky!
The child sees it…
The child hears it…
The child calls it:
Save me
Play with me, bird!

* Jacques Prévert, *Page d'écriture*

Every child needs to play. Play is its natural way of learning and exploring the world. Every child yearns for a world where they would be able to sing, to dance and fly like a bird does. Where they would feel 'the air on its wings', experience a world full of movement, sensations and emotions, where they can feel the beat of life, where they can be the beat of life, fully accepted, losing themselves freely in a pure game, in the joyful moment when something really happens – simply: where they can play. If there are institutions striving to prepare children for the future – 'to teach' them, they must provide play environments and game situations.

This publication describes a *status quo* of museums and museum-like institutions as 'houses of learning' for children where they learn by play. It also outlines a possible direction for future development.
This publication was created between the years 2019 and 2021, in the years influenced by the COVID-19 pandemic, when a series of global lockdowns affected museums, schools and – above all – children strongly. It captures the reality from the point of view of a mother of two daughters and a woman who once managed to establish first children museum in Czech Republic, once an ex-board member of *Hands On International*, these days freelancing curator of cultural projects with intensive audience engagement, cultural manager and writer.
The reason to write this book is to map the landscape of this museum niche, to close-up two years of the work on developing a label of quality marking cultural institutions as homes of learning for future and above all to question what is their readiness to play a pioneering role in education for future and how meaningful they are today facing recent challenges on European scale.
It was also written to inspire, to have open eyes for whatever children manifest they need, for whatever the life brings and always to search the way to go on, so the children are always able to learn, play and keep their will to find new ways and have a chance to be a hope for all of us.
I wrote it driven by curiosity whether there is some philosophical basis, some basic human ideas shared by most of those, who are passionate about empowering children by culture and arts.

Tereza Dobiasova
Founder of UUUL Institute, Prague
Content manager of the "21st Century Education" project in Hands On!

Big Question for Small People

If you raise children today or if you seriously want to educate them you may face a lot of insecurity thinking about the world they're growing into. But you also may be very hopeful about changes to come.
If you take it really seriously: accompanying children on their journey with love but also with the awareness of what can come, you may see their situation (and ours as well) as a huge challenge: a lot can be gained but also a lot – if not all – can be lost.
Humans see themselves as the smartest and most powerful of all living beings on the Earth – in fact they see themselves as God. But nature, life itself, even the tiniest of the tiniests: viruses show us more and more strongly that we are not the almighty ones.
Can we, humans, handle what we've created and what we have responsibility for or can we not? It's a big question which the future will answer. Therefore, it is a big question for our children and also for our relationship to them – a big question when accompanying them into the future – a big question for each of us.

Warning from the Old Ages

In every culture on the Eart, stories are told to learn and better understand things. There are two great stories in Greek mythology about the relationship of fathers (parents), who possess godly powers, and their children. They're both tragic but I think they must be heard when we – the smartest and most powerful – are discussing our culture's relationship to children. Let's hear them as a warning from old wisdom and a simple instruction about difficult things.

Icarus

Daedalus, a very talented Athenian craftsman, driven by his ambitions and imprisoned on Crete, fashioned two pairs of wings out of wax and feathers for himself and his son, in order to escape from the island. Daedalus tried his wings first, but before setting out on their way to freedom, he warned his son not to fly too close to the sun, nor too close to the sea, but to follow his path of flight. Overcome by giddiness while flying, Icarus soared into the sky, but came too close to the sun, whose heat melted the wax and Icarus fell into the sea and drowned. Daedalus was overwhelmed by despair. He got his freedom but lost his future.

Phaethon

A young boy Phaethon, challenged by his playmates, sought assurance from his mother that his father was the sun god Helios. She assured him about it and told him to turn to his father for confirmation. Helios explained to him how he drove the sun chariot from morning till the end every day and promised his son whatever he wanted. Phaethon insisted on being allowed to drive the sun chariot for a day, so Helios had to let him.
Next morning Phaethon rolled out with the chariot into the sky but very soon it was clear he wasn't able to control the horses. The Earth first froze when the horses climbed too high, but when the chariot then scorched the Earth by swinging too near, Zeus decided to prevent disaster by striking it down with a thunderbolt. Phaethon fell to the ground and was killed.

How to Learn to Fly?

In both stories children do not find a way to handle the power of their fathers. Both of them come too close to the sun and both fall and die.
Raising children today may feel like standing with children at the edge of an abyss. Either they will learn to fly or they collapse into the depth.
What kind of education will prevent children from collapsing from the heights and will enable them to swing safely into the unknown future, into the endless shine of a reality transcending us, into the brightness? Who will be able to open to the children doors to worlds so rich, diverse and lively as nature is – where they – no matter if a girl or boy, no matter their origin, culture, background, obstacles each of them had to face – have a chance not to get burned and to swing over the abyss – lightly, like in a dream, in an innocent play – there where everything is possible?
Questions about children's education need to be asked again in every educational undertaking. I used symbolic language – the language of stories – as these questions embody very complex matters, which – in my opinion – can not be described solely by the list of competencies, articulation of contents to be learned and ultimate methods to be used.

Challenges our Children Will Have to Face

A Letter to Homo Deus

One of the 'prophets' of these days, Yuval Noah Harari, a historian mapping 'the history of the human future' who sells millions of books worldwide, describes his vision of a human being of the 21st century as Homo Deus: a human being, who uses powers previously only attributed to God(s).

In one of Yuval Noah Harari's books there is a letter he wrote to children about what they can expect from the future and how they shall get ready for this:
"The best advice I could give a fifteen-year-old stuck in an outdated school somewhere in Mexico, India or Alabama is: 'don't rely on the adults too much'. Most of them mean well, but 'they just don't understand the world. In the past, it was a relatively safe bet to follow the adults', because they knew the world quite well, and the world changed slowly. But the twenty-first century is different. Due to the growing pace of change you 'can never be certain whether what the adults are telling you is timeless wisdom or outdated bias'.
[…] Technology isn't bad. If you know what you want in life, technology can help you get it. 'But if you don't know what you want in life, it will be all too easy for technology to shape your aims for you and take control of your life'. […]
[…] Should you rely on yourself, then? … The voice we hear in our heads was never trustworthy, because it always reflected state propaganda, ideological brainwashing and commercial advertisement, not to mention biochemical bugs. As biotechnology and machine learning improve, it will become easier to manipulate people's deepest emotions and desires, and it will become more dangerous than ever to just follow your heart. […] To know what you are, and what you want from life … know thyself. 'For thousands of years philosophers and prophets have urged people to know themselves'. But this advice was never more urgent than in the twenty-first century.
The algorithms are watching you right now. They are watching where you go, what you buy, who you meet. Soon they will monitor all your steps, all your breaths, all your heartbeats. And 'once these algorithms know you better than you can know yourself; they could control and manipulate you, and you won't be able to do much about it'. You will live in the matrix, or in The Truman Show.
[…] and if, however, you want to retain some control of your personal existence and of the future of life, you have to run faster than the algorithms and the government and 'get to know yourself before they do. To run fast, don't take too much luggage with you. Leave all your illusions behind. They are very heavy.'"[1]

Can We Imagine Museums Supporting Children of the 21st Century in Packing Light and Efficiently for their Heroic Journey Following Distant Signs of New Humanity?

His advice for the upcoming generation shows strong parallels to instructions provided to heroes in old legends before setting on their heroic journey. He encourages young ones to know themselves, which can be interpreted as personal development and integrity, and he also warns them against 'taking too much luggage'.
He encourages them to understand oneself as an 'operational system' and also to understand 'the operational systems' of globalized enterprises. In order to do this he advises the individualization of education, which unfortunately is so difficult to achieve for the vast majority of formal education. As a remedy he recommends 'know how' of philosophers, artists – holistic, humanistic 'know how' which created the core of cultural heritage.

Skills, Competencies and Know-how for the 21st Century

The demand for a transformed education, children and reality

The call for a transformed education, probably even more radically than Harari suggests, echoes already strongly in the society, in a variety of its niches – not only from writers and philosophers, but also from industries, markets and key global stake-holders, like for example UNESCO.
"Globalisation, new technologies, migration, international competition, changing markets, and transnational environmental and political challenges all drive the acquisition of skills and knowledge needed by students to survive and succeed in 21st century. […] Yet the comparison of educational frameworks on an international level proves the **absence of these competencies and skills from current learning processes. Curriculum development has not kept pace with current expectations about learner competencies and skills or new tools to support learning**. …There is no single prescribed approach to educating young people for the twenty-first century."[2]
The following is a non-exhaustive list of skills and competencies of what 21st century education should

1 Yuval Noah Harari, 21 *Lessons for the 21st Century* (London: Jonathan Cape, 2018), shortened by Tereza Dobiasova and Sarai Lenzberger.
2 Cynthia Luna Scott, "The Future of Learning 2: What Kind of Learning for the 21st Century?," Education Research and Foresight Working Papers (Paris: UNESCO, November 2015).

provide: *active learning, **critical thinking**, making responsible decisions, problem solving, scanning multiple domains, self-reliance, effective communication, taking creative action, work with complex ideas, teamwork and cooperation, keeping pace with technology, **media literacy**, **informational literacy**, **digital literacy**, **civic literacy**, **creativity**, content creation and understanding, metacognitive skills, failing forward, personalized learning, life-long learning, articulating opinions, collaboration, **innovative capacity**, **creative divergent thinking**, **enthusiastic experimenting**, **breaking new ground**, envisioning strategies, information and technology skills, **social and cross-cultural skills**, **emotional resilience and empathy**, the ability to self-govern, adaptability, making sense out of significant and complex global issues, entrepreneurial thinking, questioning conventional wisdom, imagining new scenarios, recognising and acting on opportunities, **inventive thinking**.*

We must keep in mind that there is always an ideological (and sometimes also pragmatic) background to every vision of education and also to all listings of skills and competencies. Skills Harari suggests that children growing up today do not match the education's indicators and methodologies created by UNESCO and EU educational experts. Harari can afford the luxury of a purely humanistic view without any commercial and economical regards addressing (one and every) child as an individual – unlike the public bodies that reflect society with the variety of the stakeholders (being public or private institutions) in their visions.

In addition to a variety of visions of education there is the practice of education as such, which usually differs from the visions with certain inertia: inertia given by history, by repetition and habits made of elements once also innovative. When thinking of the new vision, we should not forget to analyse what the practice has been responding to.

On inertia of educational practice

"The world of the Nineteenth and Twentieth centuries, which needed armies of men and women in factories, demonstrations, and battlefields, is dying inevitably",[3] wrote the psychologist and philosopher Erich Fromm already in the 1950s.

It is becoming unjustifiable to raise children as obedient system upholders, like our parents and teachers did. By realistic assumptions, in ten years up to fourty percent of jobs will cease to exist. These people's skills will no longer be needed.

Such realistic assumptions mean serious threats for the vast majority of society, who were educated to work for factories, hospitals, offices and shopping malls. These casualties of technology will "inadvertently shift the center of their lives to forces over which they feel no power […]."[4]

This approach to education and also to humanity is both unsustainable and unsatisfying on multiple levels. "Man stopped looking for the ultimate purpose of life in himself and made himself an instrument serving the economic machine he made with his own hands. We are concerned about efficiency and success instead of our happiness and mental growth."[5]

On collapsing ideology

This ideology, rooted in rationalism and responding to the scientific and technological progress of Western societies of the 19th and 20th century, has envisioned human society as a self-sufficient, ever-lasting and ever-improving machine rather than as a dynamic living organism.

Living and working as part of a machine called humankind has felt mostly easy. It has enabled millions of people to give up their responsibility for their actions as they lack the capacity to understand the complexity of the 'machine' and have got used to the fact that there is always someone to hush them with the vision of eternal growth and care for them when needed. This has led humanity into the overwhelming environmental crisis as well as the crisis of humanity.

The crumbling of the growth ideology is also expressed by the urge to transform contemporary education because it has the potential to re-orientate society. This would encourage the next generations to interrogate themselvs on how to cope.

Why Culture as an Education for the Future?

I am arguing in this text that cultural institutions are particularly fit to educate children for the future. In this passage I will connect three major challenges of the 'future' (or what future might be) with expertise which is unique to cultural heritage.

Reinterpreting human ideology

"Humans are able to use language to create completely new realities, based on theoretical constructs. During the last 70 000 years the intersubjective realities that Sapiens invented became even more powerful, so that today they dominate the world. Will the chimpanzees, the elephants, the Amazon rainforests and the Arctic glaciers survive in the twenty-first century? This depends on the wishes and the decisions of intersubjective entities such as the European Union and the World Bank. However, these entities are constructed and endure through our shared imagination, merely amplifying existing dogmas.

—

During the twenty-first century the border between history and biology is likely to blur not because we will discover biological explanations for historical events, but rather because ideological fictions will rewrite DNA strands. Political and economic interests will redesign the climate and the topography of mountains and rivers will give way to the cyberspace. As human fictions are translated into genetic and electronic codes, the intersubjective reality will swallow up the objective reality and biology will merge with history. "In the twenty-first century fiction might thereby come to be the most potent force on earth, surpassing even wayward asteroids and natural selection. Hence if we want to understand our future, cracking genomes and crunching numbers is hardly enough. We must also decipher the fictions that give meaning to the world."[6]

What Harari says in these two texts I see as a very important point: The new generation will '**need to re-read the human ideology. Critical and divergent thinking in combination with mastering of textual literacy but also with an ability to process information playfully, with imagination'** might enable them to handle this task. By scanning multiple domains, integrating content knowledge of technical, natural, cultural and humanistic kind and generating sense out of complex issues they might be able to question conventional wisdom.

So let's try to think of cultural education as a play-arena to rethink, reimagine the role of humans in the world.

Redistributing power

As humans have developed their power to transform the world around themselves, they are left with the task to transform themselves to be fit to handle this power responsibly.

Around the world, the gap is widening between a small, powerful elite of the extremely wealthy and the rest: a growing number of people seen either as consumers and workers for that elite or, if they can no longer produce or consume, pushed to the margins of society.

My favourite prophet Harari as well as a number of sci-fi movies warn us that this gap might result in creating a privileged minority species having the means to upgrade itself genetically and to avoid the results of environmentally and socially unsustainable policies by living in a protected ghetto. Other scenarios combine the growth of the super-rich niches with the technological development and destruction of democracy. All of these prophecies are actually realistic.

What the sci-fi movies don't take often into account – or they don't speak about – is the power of tangible and intangible cultural heritage – which preserves the systems of basic human values and ethics. Societies have created public institutions which should keep these systems vivid. The social gap scenario Harari describes, proves that the cultural heritage is still needed to build the bridges across the gap.

The values contained in mythology, religions and other expressions of culture are basically the very same as those in described as the "social and cross-cultural skills" in the educational discourse: empathy, justice, emotional awareness, feeling of responsibility, ability to self-govern, adaptability, metacognition, ability to make sense of complex issues, ability do decide, to act, to risk, to fail.

The Dalai Lama calls these bridge-building skills "education of the heart":

"My hope and wish is that, one day, formal education will pay attention to what I call education of the heart. I look forward to a day when children and students will be more aware of their feeling and emotions and feel a greater sense of responsibility both towards themselves and towards the wider world. Wouldn't that be wonderful?"

The experts on education also confirm the growing importance of "the education of the heart"[7]: As highlighted in various educational frameworks, there is a growing emphasis on the development of social skills, including empathy, as essential competencies for the 21st century.

Cultural institutions can play a vital role in educating children towards empathy, which – I hope – can allow us to transcend the current challenges towards a sustainable future.

3 Erich Fromm, Psychoanalysis and Religion (New Haven: Yale University Press, 1959).
4 Erich Fromm, Psychoanalysis and Religion (New Haven: Yale University Press, 1959).
5 Erich Fromm, Psychoanalysis and Religion (New Haven: Yale University Press, 1959).

6 Yuval Noah Harari, Homo Deus: A Brief History of Tomorrow (London: Penguin Random House, 2016).
7 Central Tibetan Administration, "SEE Learning: The Dalai Lama's Gift to Humanity," April 5, 2019, https://tibet.net/the-dalai-lamas-gift-to-humanity-see-learning/.

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Dalai Lama

Envisioning the future

In a speech at the 2006 TED Conference, Sir Ken Robins, a leading thinker and speaker on creativity, remarked: "We do not grow into creativity, we grow out of it – or rather, **we are educated out of it**." Traditional education, with its emphasis on rote learning and memorization of facts has long valued conformity over novelty of thought.

But: as also UNESCO officers claim: **"…humanity's future depends on the ability to reconstitute our understanding of human capacity and place creativity and innovation in the forefront of our educational systems."**[8]

J. K. Rowling described in her Harvard inauguration speech of 2008 how her creation of the fascinating world of Harry Potter led to a complete re-creation of her own life: "Imagination is the uniquely human capacity to envision what is not, and therefore the fount of all invention and innovation. In its arguably most transformative and revelatory capacity, it is the power that enables us to empathize with humans whose experiences we have never shared. …We do not need magic to transform our lives, we carry all the power we need inside ourselves already: we have the power to imagine better."[9]

The importance of creativity and capability to re-invent and innovate is indisputable, yet for schools as they exist today it is a huge challenge to raise children as creators and innovators.

Cultural institutions as a key player of 21st century education

Considering these three know-how strands, we see that cultural institutions have a great starting position as platforms to educate children. Key elements of innovative pedagogy are also very often associated with arts and culture: learning through direct experience, holistic experiencing, flow, freedom, strong emotional involvement, and storytelling (for example).

Briefly said: cultural institutions are competent to combine these elements into a complex educational structure, appealing to all senses and providing an applied learning context. Cultural institutions, based on interpretation and providing cultural participation for children, can become a part of the educational solution for the era of social transformation: as 21st century learning hubs – pedagogic laboratories, resources for quality programs using innovative methods and environments for learning.

Museum as Spaces of Social Transformation Pedagogical Laboratories[10]

As I have mentioned earlier, every vision of education is based on a certain ideology – on a set of beliefs, values, views of life – and it is also given by position in a society – as I also noted before – in contrast to the vision of free writing historians and UNESCO officers.

At this point it is therefore important to question museums' position – their role, roots and their own inertia.

What is a museum?

Etymologically speaking, the word 'museum' derives from antiquity. It functioned as a designation for **"the refuge of the goddesses of protection of the arts"**[11] the muses. However, this was not a concrete place, but **the mythical sphere of activity of the muses**. Over the next few centuries, this conceptual idea materialized into actual spaces of knowledge.

From the perspective of historical institutional development, the museum started out around 290 BC with the *Museion* in Alexandria. Although there are verifiable temple collections, the *Museion* is considered "[…] among the early state institutions established to support literature and science."[12] According to today's understanding, the *Museion* can be understood as a mixture of university, art, culture, and natural history collection and library.

In the Middle Ages, the museum forerunners were limited to the so-called art and wonder chambers of the church and aristocracy. These collections, some of which were considerable, were used neither for research nor for real educational purposes but served as mere objects of prestige for the demonstration of power.

When the age of bourgeoisie dawned in the middle of the 18th century, a new group of sponsors and collectors for objects of art, culture and science was looking for **elements that would create identity**.

With the increasing liberalization of society as a result of the Enlightenment and Industrial Revolution, the preservation, research and presentation of historical objects became a declared matter of the state and local authorities often founded their own cultural institutions (*The British Museum*, opened in London in 1759, is the first of its kind). Museums were now **understood and treated as generally accessible educational and research institutions**.

This function was still captured and preserved by the museum definition by ICOM-International Council Of Museums, ratified at the 2007 ICOM General Assembly:

"A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."[13]

From the refuge of muses to the exercise of human power

Museums have made it very far from their origins: they moved from the inspiration and creative processes to the possession of knowledge and the possession of material treasures and connected to this the exercise of power, despite always under the flag of study, education and safe-guarding the collective memory.[14]

Any attempt of re-thinking the museums and the roles they play in society needs to take seriously into account the society at large. Thinking of museums and children postulates therefore some questions which are important to consider:

- **What memory will museums confront children with?**
- **Will the museums use their memory protection as a tool to keep children in line with the societies as they have developed so far, or will museums be able to open up the perceptions of memory enough to allow children to really create their own view of humankind?**
- **If there is a real social need to rethink human civilization, to dream it from scratch and to re-create it into a more sustainable form, is it not the time for museums to reclaim themselves as a refuge of muses?**

A museum Niche

There is a museum niche, subtle and indistinct from the point of view of the classical museums, which already practices the know-how suitable for supporting children in their evolutionary role in the 21st century today: children's museums.

As the name already implies, children's museums are **institutions for someone rather than about something**, which marked a significant novelty in museum development. They interpret (some kind of) heritage to children with a special attention to their needs and **focus on providing rich and inspiring environments for developing children's talents**. As such, they often are helping children to "equip lightly and efficiently for facing the challenges"[15] of the 21st century.

Light method of learning

The main mode of behaviour of children is play. Playing is common to all children. It is their method of conquering the world and discovering it. Children's museums combine the desire to play and sense of curiosity by offering interactive learning environments that are completely tailored to the needs of children, where they can learn new things self-determined and at their own pace.

8 Cynthia Luna Scott, "The Future of Learning 2: What Kind of Learning for the 21st Century?," Education Research and Foresight Working Papers (Paris: UNESCO, November 2015).

9 J. K. Rowling, "Speech at Harvard Inauguration," Harvard University, 2008.

10 This understanding/interpretation of museums is reflected and supported by various contemporary research projects and initiatives, such as:

1 Rex Ellis, "Museums as Change Agents," The Journal of Museum Education 20, no. 2 (Spring–Summer 1995): 14–17, published by Taylor & Francis, Ltd., https://www.jstor.org/stable/40479024

2) Benaki Museum, "Program Athens," Conference 2017, accessed [21.09.2025], https://www.benaki.org/images/Program_Ath_ENG-s.pdf.

3) International Council of Museums (ICOM), Museums: Agents of Social Change and Development (ICOM Publication, 2008), ISSN 0020-6418.

11 Joachim Baur, "Was ist ein Museum? Vier Umkreisungen eines widerspenstigen Gegenstands," in *Museumsanalyse. Methoden und Konturen eines neuen Forschungsfeldes* (Bielefeld: transcript Verlag, 2010), 20.

12 Friedrich Waidacher, *Handbuch der Allgemeinen Museologie*, vol. 3 of *Mimundus: Wissenschaftliche Reihe des Österreichischen Theatermuseums* (Vienna: Böhlau Verlag, 1999).

13 International Council of Museums, The Challenge of Revising the Museum Definition, November 24, 2017, [accessed 21.09.2025], https://icom.museum/en/news/the-challenge-of-revising-the-museum-definition/.

14 If a certain memory is ascribed value to the past by a museum, it is considered part of the collective canon of memory and becomes in a way an institution itself. Therefore, museums do not mirror society itself, but rather its dynamics of power, which of course are reflected in the choice of what is considered memory-worthy and whose needs museums as keepers of this memories are designed to cater to.

15 Yuval Noah Harari, Homo Deus: A Brief History of Tomorrow (London: Penguin Random House, 2016), section 1.2.

Children's museums versus museums

The key difference between children's museums and children's programs of other museum types is that at their core, **traditional museums always work collection-based**, whereas **children's museums have the freedom to create exhibition stories based on their visitor's interests and needs** (which of course does not restrain them from using objects to tell these stories).

The key tasks of a classical museum by ICOM definition are: collecting, conserving, studying, exhibiting and communicating. They are collection-centered. Therefore, in their budgets and programs, they need to equally pay respect to all these tasks.

Children's museums, on the other hand, are free to develop programs and their pedagogic work based on individual topics. Furthermore, they have the possibility to tackle whichever topic they believe to be relevant for children of their region and community, then quickly reacting in front of the most recent developments.

The advantages of children's museums as pedagogical laboratories

Children's museums develop their **content based on the real-life needs and interests of their target group**. This makes it possible to **react to current topics relatively quickly** and to only provide content which is **relevant for their audience**.

This leads to a huge diversity of children museums, all reflecting the specific needs of children in their area. This variety also serves as an important source of inspiration and innovation for others in the field of museums and education. **Children's museums – very often empathetically driven by women or men with strong social intelligence – are usually very low-threshold and inclusive organizations**. As such they offer access to culture for audience segments who normally experience a lot of barriers. They create a safe **environment for families to participate and learn from each other**. These environments serve as social interaction spaces (ideally for members of all social backgrounds and ethnic groups), offering the freedom to individually explore, by lingering at one station or skipping another, focussing on processes, and not on specific learning goals. These places therefore enable informal and highly personalized educational experiences. Children's museums foster critical thinking and curiosity, ask questions, and do not give prefabricated answers. As they are in direct and often very intensive contact with the audience, they become natural educational laboratories and pedagogical competence centers, able to **pick up, test and integrate new approaches** and serve as training and mentoring facilities for teachers. They are also capable of functioning as **community resources** by offering an environment **of fast and natural social engagement and action**. Thanks to their unique expertise and constant exchange with their target group, children's museums are strong advocates for children and their rights within their immediate community.[16]

Marking the museums' way into the future

In the past children's museums already took on the role of pioneers, by starting the audience-focused movement of the museum sector. The wide range of low-threshold interactive, hands-on exhibitions and educational programs we today consider state-of-the-art in museums are all rooted in practices developed in children's museums, which evolved around their audience.[17]

Today, we are once again confronted with the need to take this audience-focused movement even further and replace outdated educational and institutional paradigms. This urgency for change becomes evident in many ways and is mirrored in current discourses of the cultural scene.

In the museum sector a major debate, followed by heated arguments, broke loose, when the International Council of Museums (ICOM) announced a major revision of the above mentioned museum definition. It is important to emphasize that the ICOM museum definition and code of ethics for museums is internationally recognized as a binding framework for national museum legislations.

One of the driving forces of the new definition stated that the above mentioned version[18] does not speak the language of the 21st century' by ignoring demands of 'cultural democracy'.[19]

Proposing this definition instead:

"Museums are democratising, inclusive and polyphonic spaces for critical dialogue about the pasts and the futures. Acknowledging and addressing the conflicts and challenges of the present, they hold artefacts and specimens in trust for society, safeguard diverse memories for future generations and guarantee equal rights and equal access to heritage for all people.

Museums are not for profit. They are participatory and transparent, and work in active partnership with and for diverse communities to collect, preserve, research, interpret, exhibit, and enhance understandings of the world, aiming to contribute to human dignity and social justice, global equality and planetary wellbeing."[20]

Even though the vote for a new proposal was postponed due to the heavy backlash from some national ICOM branches, criticising the non-transparent way the proposal was developed and its vague terminology, illustrates how (cultural) institutions urge for new approaches in order to stay connected and relevant to today's 21st century society.

When taking a closer look at this new definition, regardless of its controversy and possible inaccuracies, it becomes evident that audience-focus, engagement and critical discourse could be defined as the key-factors for museums to be able to stay true to the requirements of contemporary society.

If we now take the main characteristics of children's museums, which were outlined in the previous chapters, it becomes evident that they already live-up to the core-values attributed to the museum of the future, showing:

- The ideal of a 21st century museum concept is rooted in cultural democracy, which currently already exists in the form of children's museums and there it has been well tested.
- The new museum definition theoretically confirms the operational model of children's museums as a future-proof blueprint for museum work and their role as a fore-runner for the transformation of the whole museum sector.
- Taking into account the general outcry for a re-modeling of contemporary education, the current shift in the museums world has also the potential to serve as a prototype and best practice inspiration for formal education.
- Given the audience-centered approach and the usually smaller organizations sizes, children's museums have the potential to quickly react and address current topics, serving as real-time discourse centers and social laboratories, not shying away from challenging content.

Mapping the Reality of Children's Museums in Europe

Hands On! International realized a project of mapping child-centered[21] museums between the years 2019 to 2021. Almost 180 organizations participated in following surveys:

1) basic survey focused merely on hard data about the organizations realized in 2019 and 2021;
2) survey on reopening hands-on museums after first wave of COVID-19 with respondents mostly from Europe as well as Asia, North America and others, realized in May and July 2020;
3) evaluation forms from the Hands On! Conference held in Frankfurt in 2019;
4) feedback from the moderators of the workshops during the online HO! Conference in 2021.

This part of the text selects findings of the mapping which I believe are the most interesting ones and which add information from the field to the so far realized analyses.

Joy for everyone

The questioned organization were visited by a mix of kindergartens and schools (35%), families with children (38%) and just adults (27%). This aspect of their functioning corresponds to their unique learning environment and atmosphere suitable for them.

It fits most children and stimulates them in a way which for the majority of educational institutions is beyond their reach. In fact it does not rely simply on its own education resources, but opens the learning process also to peer and intergenerational learning, where – quite naturally – everyone has a chance to choose the content according to their needs and – when interested – is naturally motivated to share it with their peers. When this happens, natural undirected learning takes place – which is of course the most efficient one. The know-how to trigger natural learning situations also varies among child-centered institutions. We could even day that each organization develops this specific know-how and cherishes it as its holy grail. It is what makes them needed in their local communities, what

16 For further information, see Association of Children's Museums (ACM), "'What Is a Children's Museum' and 'Function of Children's Museums,'" accessed [21.09.2025], https://childrensmuseums.org/images/ACMFourDimensionsofChildrensMuseums.pdf.

17 Petra Zwaka and Claudia Haas, "Can Children's Museums Survive the 21st Century?," paper presented at the 12th Hands On! Conference, Frankfurt, 2019.

18 "A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."

19 Jette Sandahl who chairs the ICOM standing committee Museum Definition, Prospects and Potentials.

20 International Council of Museums, ICOM announces the alternative museum definition that will be subject to a vote, July 25, 2019, [accessed 21.09.2025] https://icom.museum/en/news/icom-announces-the-alternative-museum-definition-that-will-be-subject-to-a-vote/.

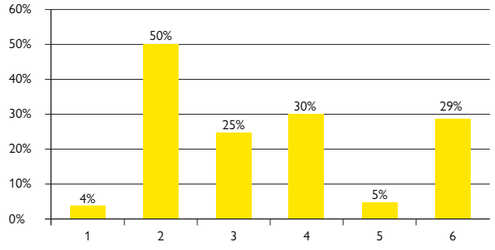
21 By "child-centered" I mean both children's museums as well as museums which target children as one of their key audience segments.

If there is a real social need to rethink human civilization, to dream it from scratch and to recreate it into a more sustainable form, is it not the time for museums to reclaim themselves as a refuge of muses?

creates the core of their meaning and what is also crucial to their economic functioning.
When you look at the economic functioning of museums and galleries in Europe, you will find out that (with the exception of a handful of institutions which play significant roles in tourism) the vast majority of museums are almost completely dependent on public funding and also almost all of them are funded by public bodies. Children's museums are different. Most children's museums are able to generate income covering about 50% of their overall cost and more, some of them are even economically self-sufficient (compared to classical museums that are usually able to generate 20 – 30%). This is why – also in Europe – **almost half of the children's museums can be private** – which is very atypical in the museum sector.

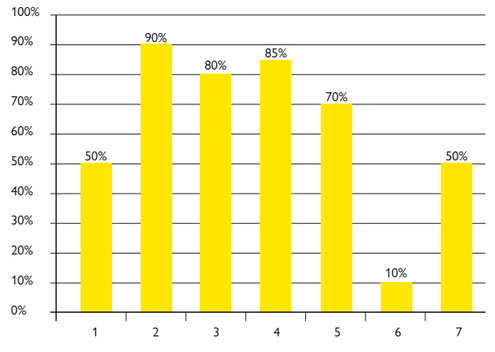
Classical museums with children's program

% of annual budget generated by own income



Children museums

% of annual budget generated by own income



Observe your visitor

The financial – partial or complete – independence – is not their only social benefit. The Re-Opening Hands On Museums research conducted by *Hands On!* in 2020 after the first wave of COVID-19 in the EU[22] proved that private museums are also much more likely to react faster to the needs in society.
This has two reasons: 1) as they are directly financially dependant on the income generated by the audience they can not afford to leave this income out 2) as they are used to creating **their content based on empathetic observation of their audience's behaviour and needs – 'to knit it fitting their visitors' – they were able, after the break-out of COVID-19, to adapt their operational strategies** responding to the – suddenly changed – needs of their visitors. Offering online content, they reached out to their audience through social networks and online channels. They supported schools bridging the gap to digital learning and as such proved their expertise as the play learning specialists.
Whatever happens in society, these self-reliant and empathetic organizations seem to be able to react fast, adapt to what is needed and be places of education adapt for what is needed.

Joy for everyone + observe your visitor: conclusion

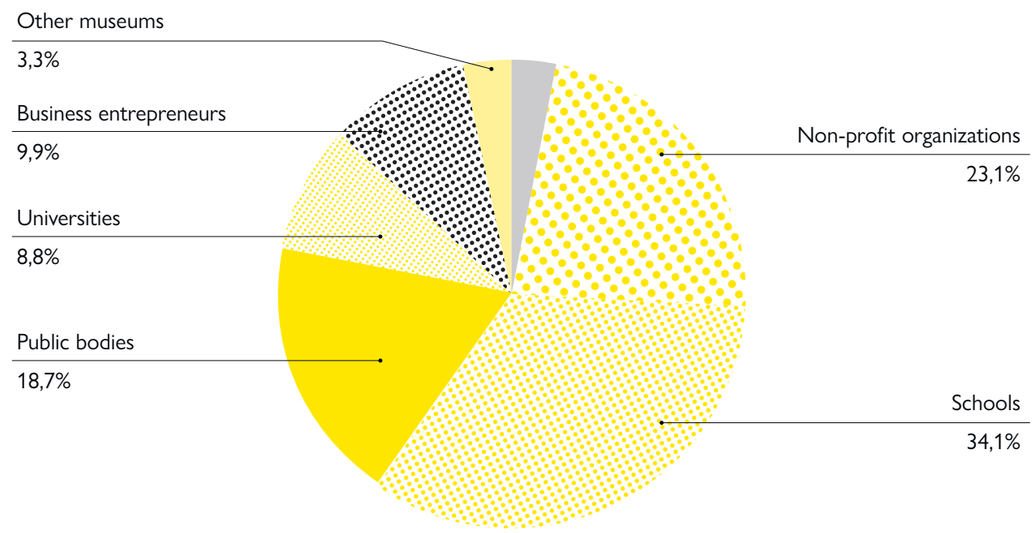
Creating rich interactive environments for self-learning – based on observation of the audience – is inspiring for a variety of target groups and it is efficient both from the learning as well as from an economical point of view. Not a collection centered, but an audience-centered approach in museums proves itself far more efficient and as such is worth following.

Learning in beauty

85% of child-centered museums create their own program. They also have a very specific mix of content creating teams. 83,9% questioned organizations have their own permanent in-house creative team consisting of curators, exhibition designers, architects, etc. (this differs from house to house) but almost all of them, i.e. 93% have educational staff incorporated in the creative process (76% of them employing educators on the basis of the long-term contract). This means that the **combination of creative professionals and educators is one of the substances of these organizations**.

22 This report is for internal use. For consultation, contact secretariat@hands-on-international.net.

What are your key partners?



What does it mean for the quality of education?
It means that education is a crucial component in the programming – **the programs are designed in order to educate** – yet the form of the education is also very important.
Very often it has distinct aesthetic form, it is innovative, fun, it affects visitors holistically – connecting them to their bodies, as well as to the world – and often it triggers creativity and imagination as well. This is very much in line with key competencies for the 21st century and once again: it makes education very efficient. But beside that, by providing learning through beauty for a wide audience of schools as well as of families with children, it provides – very democratically – what psychiatrist Michael Ventura calls: 'Aesthetic hygiene.'
"Civic courage in the ecological age means requiring not only social but also aesthetic justice and the will to argue and speak about beauty in public space. … Aesthetic hygiene – it could save the soul of the world. Nothing moves the soul as strongly as the aesthetic movement of the heart looking at the fox in the forest – the beautiful sincere face, the sound of a gentle melody."[23]
In this sense, child-centered museums offer truly essential learning opportunities for the future. **They are themselves an expression of civic courage: in their local communities offering social as well as aesthetic justice**, they care for masses of children who would not have otherwise a chance to experience much of social generosity[24] and as such are endangered by not building trust in society and feeling irrelevant. If this was the only benefit to society it would be enough as it is much harder to fight irrelevance than humiliation.

Interwoven in local environment

Research also shows that these kinds of museums tend to have multiple co-operations and as such are usually **very well interwoven in their local environment making their programs relevant and enhancing their outreach.** More than 34% cooperate with schools, and almost 25% cooperate with NGOs.
On the other hand, beside networking in professional areas, these organizations quite poorly cooperate with other museums. This also indirectly signals strong local engagement and not exploited **potential of co-producing and circulating content, know-how and sharing resources. This is definitely an opportunity for the sector and its sustainability**.

23 James Hillman and Michael Ventura, We've Had a Hundred Years of Psychotherapy—and the World's Getting Worse (San Francisco: Harper, 1992).
24 Mind that in children entered museums – even if you leave out creative teams working out educational content and environment – in 37,5% of these institutions one educator serves 10–15 visitors (which is about a half of the average school in EU ratio).

Today's generation of children museums

When writing about the evolution of children's museums, I mentioned that recent children's museums are opening up their focus from critical thinking, to the children's abilities to empathize, envision, decide and act.
To see whether this is really the case or whether organizations are just about to appear, we need to look at two aspects of functioning of these institutions:
1) How the museums' personnel treat their visitors and what are their key qualities;
2) what is the content of the programming.

Mediators of the new world

Quality of staff in direct contact with the visitors is crucial. The way these people treat the audience, the kind of relationship they establish with them, what they focus and highlight, and how they intervene, expresses, in a way, a vision – a role model – of how we can be (or even become) in the museum universe. These people are the mediators of the new world. So how should they be?
Let's have a look at how the leaders of the museums value the skills of the educators – the key personnel meeting the visitors.
As you see in the graph, creativity is valued the highest, but even empathy, independence and charisma are valued higher than expert knowledge.
This implies – when we see the educators like role models for visitors – that **for the child-centered museums an educator's – as well as visitors' personal qualities – matter more than what they know**. This is already a major shift in focus when you compare it to the status quo of the vast majority of formal education in the EU. It means that child-centered museums really open a way for the education Harari envisions for today's children.

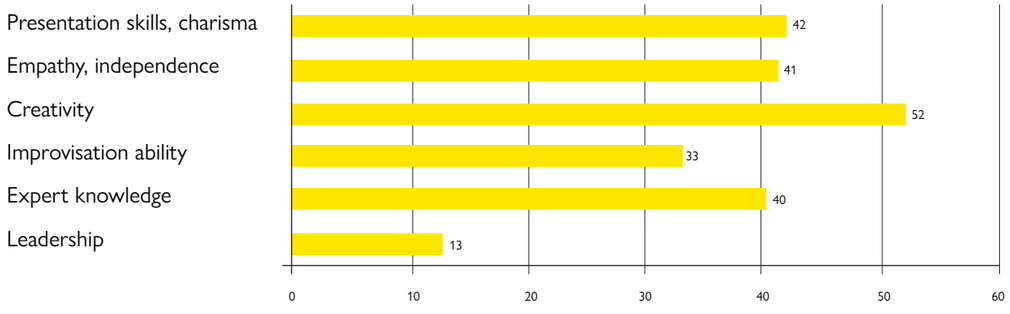
The training policies for educators of the museums surveyed imply the same: among many other forms and methods the respondents mentioned hands-on practices, folktale writing and narration seminars, collaborative workshop creation, inquiry-based learning with games, "'I ask" method'[25], and practices using art as a medium of communication. When you look at responses in the questionnaires, it is evident that **child-centered** museums seriously search for methods to create an open-ended setting to self-exploration, development of personal skills, building up open and healthy relationships between visitors, museum and community and starting discourse.

What shall we talk about in the new world?

But what are the topics which the child-centered museums engage with? In fact this is still a difficult question at this point.
The question related to the topics as we have formulated it in the beginning of the project and used it in the questionnaires does not offer a clear answer (see the graph at page 79) as the question was formulated too generally. Only under 'other' we can read more: "literary-memorial, general type museum with permanent archeological, ethnological, history and media exhibitions, world citizenship, energy sources, renewables, climate change, children in city, democracy, the constitution, empathy, children's rights, intangible heritage, folktales, shadow theatre, insect exhibition, sport."

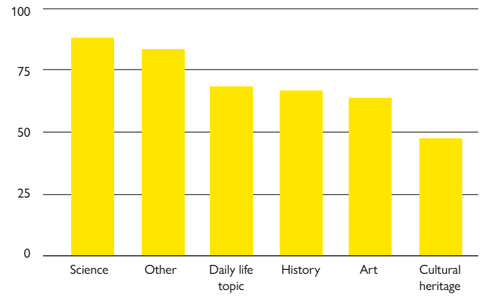
We can find hints of possible answers by examining the discourse at the meetings of museum professionals in this field. Insight into topics of the *Hands On!* conference in 2019 and workshops of the online conference in 2021 can give us a clue.

Key competencies of educators



25 aejm.org, "I-ASK Project," accessed [21.09.2025], https://www.aejm.org/projects/i-ask.

Thematical focus



The 2019 conference focused on inclusion into museums[26]. Surprisingly, this topic strongly resonated and it was discussed from the point of view of various target groups threatened by social exclusion, as well as from the point of view of inclusive methods.
This indicates a shared will to understand perspectives of diverse social groups and also – indirectly – the will to open up to sensitive topics.
However, the COVID-19 hurricane started demolishing the landscape of children's museums shortly after the conference and pushed the questions of content a little bit aside.
It was in this context that the online *Hands On!* conference appeared – too perplexed with just the fact of being online and shyly asking, how shall we go into the future, like a clumsy little phoenix arising from the ashes of the mass destruction of children's museums.
At this point I am not completely able to provide an overview of the topics which which are trending in museums just rising from the COVID-19 cataclysm.
Yet – looking back at what was discussed during this online event – I am hopeful. The workshops displayed a variety of projects and brainstorms on the sustainable future, for example: active citizenship in a way, in which children can imagine 'The house across the street is about to be demolished. What can we do?', Co-imagination of travelling into the future, Workshop on dancing in museums for everyone, Coding as a way of dealing with problems, discussing what the visitors' interactions in museums of the future will look like.
It's also important to note that both the conferences (but also the one before, in 2017) dealt with the digital shift and they went – in the course of time – from focusing on 'yes/no questioning' to introducing concrete tools and discussing their implementation.

Today's Generation of Children Museums = Homes of 21st Century Education

Ready for change not happening

The mapping proved that the child-centered museums' personnel has been for some time ready and looking for ways to refocus from knowledge-based education to holistic personal development and for ways to contextualize museums' visitors – in museums – in the world as it is now – even with its problematic and sensitive issues in order to enable children to act.
Yet the transformation is quite recent…

Voices asking about future

During the times of never-ending happiness (before the pandemic), there were voices raising the question whether children's museums would survive the upturn in museums[27]. Traditional museums were massively adopting the know-how of children's museums and these often heavily subsidized places were difficult to compete with.
But the pandemic has changed a lot. COVID-19 came to the museum universum like winter comes, and quarantines like a frost that immobilized a majority of museum activities with the threat of death in the air. Values in society, education and public funding have been reconsidered, as well as the habits of millions of people.
Yet children still need to play, their curiosity and hunger for learning need to be fed…
As I have mentioned before, suddenly private children's museum were often the first ones to react and to grab the opportunity in online spaces and as educational experts in schools. Suddenly they ceased to seem ready for extinction. The more loyal they have been to the values and methods of children's museums, the more relevant they are in the society waking up from the limbo of ever-lasting growth and peace once again.

Opportunity for transformation

COVID-19 created an opportunity for long needed transformation, just as every winter creates a call for new life arising. It seems that the time has truly come for a new generation of children's museums but not only of children's museums but of a movement of museums or museum-like institutions which understand that education needs to change – if we want

26 The program of the conference: Hands On! International, Frankfurt 2019 Conference, October 22–26, 2019, https://hands-on-international.net/conference/frankfurt-2019/.
27 In the mapping in 2019 90% of organizations reported growth and just 10% stagnation.

the dreams of a sustainable future to come true – and that they – as social hubs, temples of muses – can be the change.

Today's generation of children's museums

The today's generation of children's and child-centered museums does not educate children to be obedient workers and citizens because the world that these museums prepared children for, has proved to be ususstainable and outdated.

Today's generation of children's and child-centered museums educates children to stand on their own feet, to be able to say who they are, what their relationship is to other people, to society, nature and planet, to be able to envision a way through life for themselves, as well as to be able to join the mission to envision a way for life on this planet and to create to create and accept the responsibility for whatever they will create, to respect, love and grow to wisdom.

Defining standards for the child-centered museums of the future

Based on the analyses of challenges of contemporary education, mapping of the field of child-centered museums and a series of brainstormings with museum professionals, we have formulated a set of qualitative measurements valid for today's child-centered museums, regardless of their their country of origin, source of funding and scope of functioning.

These qualitative measurements are closely connected to the methods of children's museums (as they can – based on the new – definition of museums by ICOM – play a role model for today's innovative museums), yet these measurements are not only suited to them. When modelling them, we (at *Hands On!*) kept in mind a broad scope of institutions: from classical museums to interpretation centers as well as innovative projects, which even might not have a house for their public activities.

These qualitative measurements have been developed as a tool for families and teachers to help them find institutions providing space for learning, inspiration and sharing for children in their care. But they have been also developed for the museum's professionals: as a tool for benchmarking, evaluating their work as well as defining a platform for exchange and establishing themselves internationally.

Qualitative measurements can be defined on a basis of mission. The shared mission for all these child-centered organizations is supporting children to **get ready for the future** – which we translated into **education for the 21st Century**.

We have identified eight qualitative measurements = characteristics of future oriented child-centered museums. Their detailed description, together with their practices of excellence, you will find in Part II – Best practice.

8 Characteristics of the Homes of the 21st Century Education

1. Door to Culture

An easily accessible public place of joy, beauty and imagination for everyone. It is a public haven of well-being and enjoyment, heritage, aesthetics and imagination, which serves as a gateway institution into cultural life.

2. Learning Through Play

A home of interactive self-learning, a place to try out the unknown, be astonished and use your imagination. It is an educational laboratory and incubator of contemporary education, developing and testing innovative educational practices. It is continuously creating and improving Hands-on! Mind-on! Heart-on! experiences, offering play-based, multi-perspective and interactive learning.

3. With All the Senses!

It broadens children's horizons holistically through meaningful, multidisciplinary experiences, inviting children to develop their talents and skills based on the Hands-On! Mind-On! Heart-On! principles.

4. A Better World

Sees children as an equal part of society, imagining and changing the world into a better place. It fosters education for humanity by empowering its visitors to build healthy relationship between individuals, community and society, encouraging children to become co-creators and agents of change in society.

5. Bridging the Gaps

It serves as a meeting place for all ages, bridging the gap between generations and fostering intergenerational dialogue and learning.

6. Be heard!

A place to interact and engage – where every voice can be heard. It is a responsive, audience-focused institution, where interactivity is at the heart of every visitor's experience. Social and cultural diversity is reflected in all its "P"s: in its people, program, products, promotion, place, partners, processes and prices.

7. Digitally Aware & Active

It is digitally aware and active, embracing digital technology and helping children to navigate between reality and the virtual worlds.

8. Constantly Changing

Connects to global themes, but acts locally and is continuously adapting. It is a dynamic and evolving organizations, adapting and responding to the changing needs of local communities in connection with current global and local developments.

Closing words

I hope children, affected so severly by the series of lock-downs, can once again become a symbol of change and of hope. I am thinking of Astrid Lindgren's Ronja whose affection for the boy 'from the other side' was able to bridge the abyss dividing them. I am also thinking of other heroes of Astrid Lindgren, Brothers Lion-hearts, who saved one of the co-existing worlds, and I am thinking of the little boy from Stephen King's *The Shining*, who was able to fight the deadly evil in his father's mind. But I am also thinking of Greta Thunberg…

Yet, it would be cowardly to wait for children to save our worlds. TIn order to be able to keep respect for ourselves and our dignity, we must do the best we can. Museums can play their part as well.

Let us remember that the future is in our hands as well as in the hands of our children. Let us fully accept the responsibility for ourselves and educate the little ones in a way that they will be able to continue the human story with dignity. In museums, galleries, science and interpretation centers, we can create a setting for them, where they will be able to find their way into the future – Homes of 21st Century Education.

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Home
of 21st Century
Education

Part 3
Practical Guidebook

Sarai Lenzberger

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Unlock your Superpower

This guide is a capacity building tool for everyone interested in starting, running or enhancing an organization dedicated to children-focused museum work.

Collecting, comparing, and distinguishing approaches of children-focused museums from different parts of the world is a great opportunity to learn. Regardless the fact that they might serve different communities with different needs and issues, there are many elements they all have in common. The aim behind sharing knowledge and ideas through this publication is not to standardize offers, but to inspire individual solutions by recording contemporary practices of the field.
Over the past decades, applying an interactive Hands-on approach and focusing on children turned from a niche within the museum sector to a mainstream practice. Nonetheless, children-focused museum work is still lacking elaborated international working standards and mapping.

Even though *Hands On! International Association of Children in Museums* has been connecting the community by organizing networking and training opportunities for more than twenty-five years, no comprehensive written recordings of this knowledge have been kept.
In the past, expertise and knowledge were usually tied to dedicated individuals, and with them leaving the field most of their knowledge was lost.

Therefore, successors or new initiatives often find themselves forced to reinvent the wheel, instead of being able to build upon what was already created in the past.

The following collection of types and approaches used in children-focused museum work is based on unwritten knowledge and existing resources gathered by *Hands On! International* office over the course of the past three years. As our office is currently based in Austria, we considered sources in English and German language.

We are convinced that children-focused museum work can serve society by utilizing the sector's unique abilities to effectively tackle contemporary challenges.

But what are these superpowers of children-focused museum organizations?

To uncover these one-of-a-kind potentials, let us have a closer look at the overall development of the sector's roles and responsibilities in society.
The following generation model of children-focused museum work is inspired and based on ideas of Gail Dexter Lord, which were developed further and expanded with the third generation as part of the *21st Century Children* project.

First Generation: interactivity/play

Focus: Hands-on
The first generation of children's museums, which lasted from 1899 to the 1980s, was tailored to the needs of the industrial economy. "The industrial economy required children (and adults) to be compliant learners, who follow set directions."[1]
Children's museums were focusing on providing learning environments tailored to children's needs and abilities and playfully teaching them how to adopt expected behavior and views.

Second Generation: interactivity/play & knowledge/critical thinking

Focus: Hands-on, Minds-on
Around 1970, the sector entered the second generation, featuring a broader range of topics, and following an approach of offering multiple perspectives by asking critical questions and demanding the reflection of one's own behavior.
The need for critical thinking corresponds with society transforming from the industrial economy to a post-industrial "knowledge economy"[2], where everything evolves around the power of assessing, processing, and possessing information.
It is not a coincidence, that the children's museums boom starting in the 1990s falls right into the time of the adoption and ratification of the *UN Convention on the Rights of the Child*, indicating the emancipation of second-generation children's museums from classical museum values to becoming true advocates for children.

Third Generation: interactivity/play & knowledge/critical thinking & soft power/change agents

Focus: Hands-on, Minds-on, Hearts-on
Today, twenty years into the new millennial, we are once again confronted with the need to take the audience-orientation movement even further by replacing outdated educational and institutional paradigms and finding adequate ways to address new societal demands. The urgency to offer new approaches to stay connected to contemporary society becomes evident in many ways and is mirrored in current discourses of the cultural scene, like the past infamous debate about adapting ICOM's museum definition.
The added conjunction Hearts-on represents the new focus on fostering soft power by taking on the role of change agents. Sensing what a society will need in the future to respond to the constant information and sensory overload of our disposable society is due to mark another chapter of children-focused museum work.
Catering to the immediate needs of communities has become even more relevant throughout the global COVID-19 pandemic – with children-focused museum work being once again at the forefront of coming up with new ways to meaningfully serve community by becoming *Homes of 21st Century Education.*
The global vision of *Homes of 21st Century Education* was created within the scope of this project. It is intended as a call to action: Unlock your superpower, be a change agent, empower children, and test new means of informal education!
We encourage and dare museums, galleries, and science centers to take on the role of change agents, by meeting the immediate learning needs of children and thereby future-proofing next generations.

Sarai Lenzberger, *Hands On! International Association of Children in Museums Office*
Cultural scientist & children in museums enthusiast

1 Gail Dexter Lord, "ZOOM, Twenty Years Young," in 20 Jahre ZOOM Kindermuseum, ed. Elisabeth Menasse-Wiesbauer (Vienna: ZOOM Kindermuseum, 2014).
2 Gail Dexter Lord, "ZOOM, Twenty Years Young," in 20 Jahre ZOOM Kindermuseum, ed. Elisabeth Menasse-Wiesbauer (Vienna: ZOOM Kindermuseum, 2014)..

Children in Museums

Target group

The main target group of children-focused museum work can be split up as follows:

- **Babies & toddlers, zero-three years**
- **Non-readers, three-six years**
- **(Primary) School children, seven-ten years**
- **Pre-teens ten-twelve years**
  It makes sense to highlight pre-teens as an additional group, because experience has shown that this age group no longer wants to be called 'children', while still having similar learning needs as the school children cohort, and therefore must be addressed differently.
- **Teenagers**
  They no longer identify as children and their cognitive abilities along with their learning needs and interests significantly differ from other age groups. Therefore, they can only be added to the core target group to a limited extent. However, some organisations reach them by using terms like 'youth museum' and offering separate spaces, programs, and marketing strategies.
  Generally, it is important to highlight that teenagers are the most neglected age group in today's museums, galleries, and science centers, especially when it comes to offers for individual visitors. The lack of adequate offers when they grow out of children-focused settings, but are not yet met with offers for adults, carries a high risk of losing them altogether once they become adults.
- **Adults**
  Although the child is the focal point, adults usually organize the visit to a cultural institution. Therefore, a children-focused museum must also function as a family place, serving an intergenerational audience. Additionally, it is important to acknowledge the fact that concerning offers for children, the communication channels mainly go through adults.

Furthermore, especially when it comes to strategies and decisions regarding marketing, communication channels and pricing, we recommend distinguishing between target groups such as frequent visitors, occasional visitors, and potential visitors.

Children's museum

In general, we can outline children's museums as hybrids of museums, leisure time places and extracurricular early learning facilities, that utilize culture as a social experience to foster learning through exhibits and other visitors.
Like the term 'museum', 'children's museum' is not a protected name. To help specify this type of institution and distinguish between high-quality offers of informal education and more casual forms of children's entertainment, ACM (US association of children's museums) has created a short profile for children's museums featuring the following definition:
"A children's museum is defined as a non-profit educational and cultural institution committed to serving the needs and interests of children by providing exhibits and programs that stimulate curiosity and motivate learning. Children's museums are unique community institutions where…

- *Children are valued citizens with the right to developmentally appropriate and high-quality learning experiences.*
- *Play is learning, and it is critical to the healthy social, emotional, and cognitive development of children.*
- *Family, culture, environment, and society are recognized as critical factors in all children's lives to effectively serve them.*
- *Pursuing equity and inclusion is a best practice that reflects a commitment to serving all children and families and advancing the growth of our field."*[3]

3 Association of Children's Museums, What Is a Children's Museum?, November 2021, [accessed 22.09.2025], https://childrensmuseums.org/wp-content/uploads/2021/11/ACMFourDimensionsofChildrensMuseums.pdf.

Children-focused museum work

Evidently, the children's museum movement has led to a large-scale rethinking and boost of innovation throughout museums, galleries, and science centers. Today, visitor-centered programming for an intergenerational audience, interactive hands-on exhibitions and playful approaches are to be found in a multitude of cultural organizations and not limited to classical children's museums. To better reflect the various types and forms of the sector, we have chosen the term 'children-focused museum work'.

This definition includes all organizations who aim to equip children to actively co-create a more sustainable society by offering individual education based on a combination of high-quality interpretation and joyful engagement with tangible and intangible heritage.
Namely, children's museums, museums, science centers, galleries, and similar cultural organizations with a particular emphasis on permanent heritage-based and interactive children's programming.

Children-friendly museum

This concept marks a stepping-stone and crucial element to become a children-focused organization.
A children-friendly museum aims to offer a welcoming and accessible infrastructure for children and families. This includes features such as baby changing facilities, breastfeeding/feeding areas, booster steps in restrooms, stroller parking areas, family tickets & reductions, co-operations with local family pass schemes, picknick areas, highchairs in café areas, child-proof interior, child-friendly attitude & communication style of frontline staff, and family tours.

Legal Types, Funding & Partners

There is no stipulated legal type for children-focused museum work. First and foremost, the suitable legal structure for every children-focused museum organization depends on national laws and legislation. Given the international nature of *Hands On! International Association of Children in Museums* and this guidebooks we cannot provide detailed universally applicable information on legal frameworks. Therefore, this is a generic overview of options we recommend start-up organizations to explore further through individual research.
Overall, the legal type for an organizations should be chosen based on the goals and strategies outlined in the business plan. Especially factors such as profit distribution, liability, earmarked funds, requirement for initial capital, not for profit exigencies, and governance structure should be carefully taken into consideration before determining a legal type for an organization.
In general, we can distinguish between two superordinated organizational categories in children-focused museum work:

- **autonomous organization**
  no superordinate entity/ownership, usually in the form of NGO/NPO: clubs, foundations, limited liability company/close corporation, etc.

- **part of an overarching entity**
  e.g., part of a public entity, part of a traditional museum, publicly owned, part of a overarching association, part of a cooperate brand/company, etc.

Naturally, the chosen legal structure of your organization will also impact the form of financing of your organization. Funding options are also highly dependent on the individual business plan and national legal framework. Most organizations secure their funding through a mix of sources, this also holds the benefit of functioning as a safeguarding instrument, in case one financing source temporarily or permanently is not available.

Potential funding sources

- **Public**
  e.g., allocated budgets (if part of a public entity), subsidy

- **Sales**
  e.g., tickets (entry fee, attendance fee), shop/gift items, hospitality-related income (café, buffet, restaurant, packaged snacks), special events (birthday parties, Christmas parties, fundraisers), consulting services

- **Grants (public and private)**
  regional, national, EU and other funding schemes

  e.g., EU grants:
  Citizens, Equality, Rights and Values Programme
  Creative Europe
  Erasmus Plus
  Global Europe – Neighbourhood, Development, and International Cooperation Instrument
  Horizon Europe
  New European Bauhaus
  Single Market Programme

  e.g., special grants for Central Europe:
  Visegrad
  CEI- Central European Initiative
  (For more information on grants scroll to the ‘resources’ section of this guide).

- **Sponsoring**
  e.g., permanent partners/house partners, foundations, exhibition sponsors, program sponsors, barter deal/goods sponsoring

Partners

Especially when building a children-focused museum (entity) from scratch, local partners are crucial to help establish the organization. These partnerships can have various forms and cover a multitude of areas.

- **Individuals**
  (e.g., patronage, supporters, public personas)
  People who are really interested in the idea of your organisation, and help highlight the value and relevance of the project as lobbyists towards decision-makers and a broader public.

- **Cultural organizations**
  (e.g., libraries, theatres, museums)
  Local partner organizations can share venues, expertise, and audiences. These kinds of partnerships open up various opportunities to complement each other’s offers and reach out to local audiences.

- **Public governance departments**
  (e.g., ministries, bureaus, departments for families and children, education, culture) & local NGOs/NPOs dedicated to children’s rights, play, etc.
  These kinds of partners can help can help disseminate your offers, reaching potential target groups, exchanging knowledge and expertise, and reaching institutions of the formal education sector.

- **Formal education institutions**
  (e.g., schools, preschools, kindergartens)
  These are partners that can help you secure visitors and reach children from various areas and backgrounds.

- **Research institutions**
  (e.g., universities)
  Research partnerships can help establish and conduct scientific and high-quality evaluation procedures and feedback loops and ensure staying on the cutting-edge of children-related research and findings.

Forms of Children-focused Museum Work

Children-focused museum work comes in many forms, as concept-wise and content-wise the landscape is highly diverse. Due to the great variety of cultural and political contexts, there is no such thing as one core-concept that works for all regions and organizations. Additionally, being confronted with such diverse audiences and topics often rooted in very regional conditions, most concepts are not transferable without major adjustments.
Nevertheless, during our 21st Century Children project, we tried to narrow down individual concepts of children-focused museum work to a list of generic types. Whenever put into practice, organizations often use hybrids of the types listed below to better meet their local needs.

Universal children's museum
A stand-alone children's museum covering a wide range of content areas and topics closely connected to the living realities of children. Topics range from arts to humanities, cultural history and science, social issues and every-day life. Contents are conveyed through permanent and changing exhibitions, workshops, and programs.

Topic-focused children's museum
A children's museum dedicated to a certain overarching topic area such as arts, history, science, medicine & human body, world cultures, books, or emotions. All contents are somehow rooted and connected to the topic of choice, using exhibitions, themed play areas, workshops, and programs.

Inhouse children's museum
A children's museum with its own spaces, galleries, or building, housed and run by a classical museum, gallery, or science center. It has a permanent team of staff with a professional background in education, and often maintains its own educational collection. The contents are loosely or closely connected to the topics, collections, and exhibitions of the parent entity. Annual themes or other major events of the overarching cultural entity are picked up and reflected in the program.

Children-only museum
Children's museums and/or exhibition areas that can only be accessed by children of a certain age group. Parents, caregivers, and siblings below or above the targeted age cohort cannot enter. Usually organized as a timed program run with a fixed start and end date. Sometimes there is a show-and-tell element at the end where parents, caregivers and siblings are presented with outputs of the program.

Mobile/Pop-up museum
A travelling children's museum with no permanent home venue. They usually travel to schools, libraries, community centers, cultural centers, or public outdoor areas. In contrast to travelling children's exhibitions, mobile children's museums also supply staff members with educational expertise, who convey contents and conduct supporting programs such as tours and workshops. Some concepts also rely on education staff of venue partners (e.g., schoolteachers, library staff with pedagogical backgrounds) and provide detailed educational materials and guides to ensure their overall concept is applied by the staff members of local partners as intended.

Family museum
A classically-rooted museum, gallery or science center organization which has adapted its whole facility for an intergenerational audience. It usually offers multiple information strands evolving around a central topic (e.g., natural or cultural history, science, arts, etc.) in various difficulty levels and a compound of non-tactile, interactive, and hands-on exhibits.

Children's exhibitions (hosting)
Traditional museums, galleries, science centers, libraries or cultural centers that regularly or permanently host changing travelling children's exhibitions. These exhibitions are created by external children in museums experts (often by children's museums, exhibition planning companies or mobile children's museums) and are carefully chosen by the local team. The content and design are usually slightly adapted to better meet the requirements of the local venue and audience. In contrast to mobile/pop-up children's museums, the educational supporting programs and workshops are developed and conducted by the inhouse education team.

Children's exhibitions (development, concept, design)
Developing complete solutions for children's exhibitions for other organizations to host temporary or permanently, that is usually a task either conducted by a children's museum as part of their business model or specialist exhibition developing freelancers or companies. The exhibition concepts are either created proactive by the developing organization or placed as pre-orders by the buyers.

Children-focused programs inhouse
These children's programs are usually offered by traditional museums, galleries, and science centers to break down their adult-focused contents to children and make their collections and cultural heritage more accessible to young visitors. This is done in the form of activities like workshops, guided tours, scavenger hunts, kids' paths, activity stations, and toolkits. The programs are created and conducted by the organization's permanent education department.

Children-focused programs external
Children-focused workshops, tours, activities, activity stations, and toolkits in connection with the contents offered for an adult audience are created and conducted by an external specialist provider. This consulting organization designs, creates, and implements heritage-based children-focused activities for various museums, galleries, and science centers.

Children-curated spaces
A co-creative museum or gallery space invites children to express and exhibit their own thoughts and ideas through artistic creations and DIY exhibits. Depending on the concept, children are in charge of design, contents, and installations. These spaces are either created with a certain group of children over a predefined amount of time with a final output or are very dynamic and can be manipulated, adapted, changed, pivoted and (re)created by every individual visitor.

Children-themed museums
These organizations include childhood museums, toy museums, play museums, children's book galleries and similar cultural organizations. Despite their overall theme being closely connected to children, they are not necessarily focused on children as a primary audience or apply state-of-the-art children-focused approaches. Some concepts are in fact children-focused, pairing their children-themed collections with the Hands-on, Minds-on, Hearts-on approach to create a meaningful and future-oriented learning experience for children.

Educational Approaches

Hands-on, Minds-on, Hearts-on

The educational concept of today's children-focused museum organizations is based on the Hands-on, Minds-on, Hearts-on approach, which is play-based and combines child-led tactile-cognitive experiences with emotional experiences to create ideal learning moments. Engaging cultural hands-on experiences are used as impetus for learning and gateway to encourage the individual exploration of a topic.

Children require other learning settings than adults developed in the 19th century along with the perception of childhood as an independent stage of life, separate from adulthood[4]. Even though often overlooked or not taken seriously as long-standing pioneers of the museum sector, children's museums are historically closely interlinked with the standardization and professionalization of the international museum industry, especially regarding museum education.

It is an important but little-known fact that when ICOM (*International Council of Museums*) was founded in 1946, they had a Children's Museums Committee, notably proving the early significance and influence of children-focused museum work.[5]

However, the state-of-the-art play-based approach was only established thirty years ago. When Michael Spock from Boston children's museum got rid of all display cabinets and created an exhibition around a topic particularly relevant for children (*What's inside?*), which would probably not be considered as museum-worthy for adults in the 1960s, a new era began for museum education and exhibition-making. Children's museums turned into educational institutions which offer content *for* someone, rather than *about* something.

In the 1990s, when the European children's museum movement gained strength, a redefinition of the hands-on approach was necessary to pay respect to the fact that hands-on activities *can* be an impetus for learning, but not necessarily always *are*. Hence, the adjunct 'Minds-on' was added to highlight the importance of fostering learning and conveying knowledge. The latest addition 'Hearts-on' emphasis on invoking an emotional connection and empathic resonance. Today's children-focused museum education is based on this three pillars approach (tactile, knowledge transfer/learning, meaningful experience/socio-empathic component), which regards play as major learning strategy of and for children.

Using a mix of cognitive stimuli (tactile, social, knowledge, instinct-based, visual, emotional) paired with a multidisciplinary compound of reform pedagogy, holistic approaches, creative methods, innovative design and ancient cultural techniques, children-dedicated museum projects offer high-quality learning experiences, tailored to meet the specific needs of their visitors.

Hands-on, Minds-on, Hearts-on exhibitions and formats aim to enable learning by functioning as mediators between the reality and the child, and are therefore closely associated with reform pedagogical approaches.[6]

Before any further in-depth explorations of the educational approaches in children-focused museum work, we need to establish basic working definitions of three generic terms:

Interaction

Interaction actively engages a visitor physically, intellectually, and emotionally.[7]

Play

Play is a child's main method of accessing, discovering, and communicating with the world. By combining intrinsic motivation, joy and repetition, positive and successful learning experiences are enabled.

Immersive stories/experiences

Immersion describes the effect of creating a holistic artificial environment so appealing that it causes the visitor to perceive it as an additional reality.[8]

Immersive stories serve as framework, guiding system, and impetus for learning. They can encourage participation and inquiry-based learning, and offer the emotional connection necessary for a successful learning experience.

Progressive education: theories, methods & types

The terms 'progressive education' and 'reform pedagogy' can be used to describe a wide range of alternative educational approaches and ideas, opposing the classical rote-learning and ex-cathedra teaching and learning concept. The following list of child-centered and child-led progressive pedagogies[9] [10] is a non-exhaustive collection of theories, methods and types influencing and inspiring children-focused museum work.

Johann Amos Comenius' (1592–1670) *Didactica Magna* (Great Didactic), can be regarded as the first charter of childhood. He propagated universal education for children of all social classes and genders and established a child-based focus on education, which can be regarded as the starting point of progressive pedagogies.

Jean-Jacques Rousseau (1712–1778) built upon Comenius' ideas. In his *Émile, ou De l'éducation*, he propagates childhood as the most important stage of life when it comes to learning, the idea of an individual education, considering the character of a child and emphasizing inquisitive learning, and allowing students to make their own experiences, rather than just telling them what is right or wrong.

Johann Bernhard Basedow (1724–1790) created a series of ground-breaking pedagogical books, outlining the major areas and questions of childhood education and guidelines on attitudes teachers should show towards young learners, including the paradigm of breaking down complex topics for children and applying a child-friendly language.

Christian Gotthilf Salzmann (1744–1811) started out as an avid critic of contemporary education of his days and developed an ethics-based, holistic, and ability-centered pedagogical approach. The educational facility he founded took on a pioneering role in creating comprehensive and children-friendly textbooks.

Johann Heinrich Pestalozzi (1746–1827) established the family as the first informal learning setting. He introduced the term 'education of the heart', which together with intellectual knowledge and artistic education should empower children to grow into self-reliant adults. His pedagogic theories also heavily influenced the development of the social pedagogy and curricula development for physical education.

Friedrich Fröbel (1782–1852) was a student of Pestalozzi and introduced play as main mode of exploration-led learning as a pedagogical standard, along with creating a detailed catalog of games, songs, stories, and other play-based learning materials, which are tailored to meet the specific learning needs of children of various age groups.

Francis Wayland Parker (1837–1902) has established a curiosity-rooted approach based on his practical teaching experiences. His 'quincy method' led to the first major reformation movement of the US school system and teacher education.

Paul Robin (1837–1912) was a French anarchist pedagogue, who was dedicated to mainstream a co-educative and collective/democratically organized teaching approach with a special focus on combining theoretical knowledge with practical life skills (craftmanship).

John Dewey (1859–1952) established the term 'learning by doing' and heavily influenced the democratization of the US school system. For Dewey, education and learning are social and interactive processes, that are enabled through problem-solving-based thinking.

Cecil Reddie (1858–1932) founded the progressive *Abbotsholme School*. Physical punishment was banned from the campus, fine arts and craftmanship introduced as main subjects along with a focus on languages. The school also made history by offering the first sex education course in the country.

Rudolf Steiner (1861–1925) founded the Waldorf pedagogy, which is based on his own holistic philosophical approach called 'Anthroposophy'. The main aim is to "provide an education that enables children to become free human beings"[11]. For Steiner, personal freedom and developing a strong spiritual identity are interlinked. The fact that this pedagogy derives and is rooted in spiritualism makes the Waldorf pedagogy one of the most controversial offshoots of progressive education.

Maria Montessori (1870–1952) created her pedagogical approach based on the natural development of a child with the famous credo 'help me to do it by myself'. For her, the impetus for learning always lies in the living world of children and is brought to them through the so-called 'prepared environment'. This learning setting, which is based on the principles of continuity, progressivism and simplicity, allows children

4 Gabriele König, *Kinder- und Jugendmuseen. Genese und Entwicklung einer Museumsgattung*, 29.
5 ICOM, "Children's Museums Committee," ICOM, [accessed 22.09.2025] https://icom.museum/en/news/women-in-museums-margaret-m-brayton-and-the-childrens-museum-committee-of-icom/.
6 Nikola Köhler Kroath, *Exhibits im Kindermuseum – Vermittlung in einer Hands-on-Ausstellung*, 62.
7 Marianna Adams and Theano Moussouri, "*The Interactive Experience: Linking Research and Practice," in Interactive Learning in Museums of Art and Design. International Conference.*
8 Teresa Wally, *Der kindermuseale Raum*, cf. Silke Pfeiffer, *Reformpädagogische Konzepte. Geschichte und Theorie der Frühpädagogik*, 84.
9 Cf. Silke Pfeiffer, *Reformpädagogische Konzepte. Geschichte und Theorie der Frühpädagogik*.
10 Wikipedia, "Progressive Education," [accessed 22.09.2025], https://en.wikipedia.org/wiki/Progressive_education.
11 Wikipedia, "Waldorf Education," [accessed 22.09.2025], https://en.wikipedia.org/wiki/Waldorf_education#Educational_theory_and_practice.

to unfold their full potential as competent learners. In connection with these core principles and her theory of sensitive periods, which provide intrinsic motivation for reaching developmental milestones, Montessori developed a wide range of teaching tools and materials.

Alexander Sutherland Neill (1883–1973) was the founder of *Summerhill School*, which aimed to create a positive, community-focused, happiness, well-being and democratic learning environment for students.

Helen Parkhurst (1886–1973) created her *Dalton Plan* pedagogy based on her experiences working for Maria Montessori, and the first reform movement of the US school system. *Dalton Plan* is centered around the banishment of frontal teaching in favour of independent learning. The core principles of the plan are unguided student-led learning, peer cooperation and individual time budgeting.

Elfriede Hengstenberg (1892–1992) was a human motion educator who established a practice-oriented play and movement concept along with children-friendly gymnastic equipment to encourage the ideal development of children's motoric and physical skills.

Lev Vygotsky (1896–1934) was a psychologist focused on child-development. He made pioneering contributions to the theory of consciousness, special needs education, the relationship between language development and consciousness, and to the general developmental psychology of the child.

Célestin Freinet (1896–1966) & **Élise Freinet** (1898–1983) combined various reform pedagogical elements into one comprehensive teaching and schooling concept. Children are encouraged to follow their own interests in self-directed work within the framework of the lessons.

Jean Piaget (1896–1980) was a developmental psychologist who developed cognitive development theory, a theory on the nature and development of human intelligence, outlining various stages of human development and proofing children are not 'little adults', but mark a separate stage of cognitive development.

Emmi Pikler (1902–1984) was a paediatrician who focused on infant and early childhood development. Her pedagogy is based on the theory of free movement development, which encourages parents and caregivers to not intervene with a child's natural development of gross-motor skills. The core principle is that infants should never be brought into positions they cannot reach themselves (e.g.: helping a child into a sitting or standing position). Additionally, free play and relationship-based care are important pillars of this approach.

Jerome Bruner (1915–2016) was a psychologist who made important contributions to cognitive learning theory. Regarding learning theories, he introduced the spiral curriculum as a teaching approach, where each thematic area is revisited at intervals. He also pathed the way to mainstreaming project-based learning into formal education by advocating for exploration as crucial impetus for sustainable learning processes.

Loris Malaguzzi (1920–1994) created *Reggio*, a unique concept in which the entire societal environment takes on the responsibility for the individual education of each child. Reggio pedagogy represents the image of the competent child who actively advances his or her own development and explores the world independently, while the caregivers support the learning process as peer, sparring partner and researcher. Respect and appreciation of the family and the child's culture of origin are also important components. To preserve the flexible and dynamic make-up of the concept, the principles of the Reggio pedagogy deliberately are not recorded in an official written publication.

Howard Gardner (1943) is a developmental psychologist who developed the theory of multiple intelligences. His theory offers an alternative concept to the IQ-centered definition of a person's intellectual capacity by outlining several distinct types of intellectual competencies which function independent from one another.[12]

John Falk (1948) & **Lynn Dierking** (1956) are leading experts and researchers on free-choice learning, a mode of learning guided by a person's needs and interests, especially within a museum context.

12 Wikipedia, "Howard Gardner," [accessed 22.09.2025], https://en.wikipedia.org/wiki/Howard_Gardner.

Expressionists & Art Education

Parallel to the progressive education movement of the 20th century, expressionist artists, such as members of the blue rider group (Kandinsky, Marc, Klee) also picked up the idea of encouraging the natural curiosity of children. The group in fact named children as one of their greatest sources of inspiration and role models.
These progressive ideas were carried on by the alternative movements of the 1968 generation, leading to a great variety of projects dedicated to children. Artists and art educators tested new ways of engaging children in cultural life. Some established lasting institutions like art schools or creative workshop centers, but most of them were temporary projects in the tradition of performance and happening art. Even though these projects certainly had exhibition-like elements and were related to the museum sector, they were neither directly associated as museum programs nor connected to traditional museums.

In the traditional museum sector, the art education movement pathed the way towards audience and youth-oriented approaches. The main aim was to get children and young people in touch with art. **Alfred Lichtwark** was one of the first museum directors in Germany to permanently implemented this new approach in his museum.

Techniques for Children-Focused Museum Work

One of the key characteristics of children-focused museum work is the unique mix of educational techniques.
The techniques below are listed in alphabetical order and might not be exhaustive. All techniques are general practices which are implemented in various ways in children-focused museum work and are often combined to better meet the needs of a specific target group and create one-of-a-kind heritage-rooted learning experiences.

Aesthetic practices

Aesthetic practices use cultural heritage techniques such as art, dance, music, film, literature, handicraft, new media, architecture, new art forms, but also circus, urban culture, contemporary and ancient sub-cultures, and similar modes of cultural expression as tools to convey knowledge and access culture.

Case studies/scenarios

These educational practices encourage empathy and reflection to convey a deeper understanding of a topic at hand. Participants are presented with a character or actual situation, whose role or point of view they are asked to represent or consider in a specific scenario. Roles can come along with a set of rules and restrictions, which must be considered when deciding how the character should react. All decisions have consequences and often present the participant with a dilemma[13].
Giving participants a crucial role in finding solutions encourages them to reflect on the possibilities and consequences of their decisions.
This method is not to be confused with role play, as the focus is not on acting out the role. Instead, decision-taking, reflecting, and discussing the social and economic status and scope of action of a character are the main elements.

Co-creation

This participatory bottom-up approach actively involves the target group in the creation of the educational content. In children-focused museum work this means, young visitors take on an important role in the development process of an exhibition or program. They can be included or consulted in various ways at different stages of the project: thematic research, content development, design, prototyping, testing, etc.
Co-creation goes beyond mere collaboration like asking for feedback or conducting test runs with a children's council. Instead, children should be offered the opportunity to truly contribute and shape parts of the project, while their preferences and working pace are cherished.

Digital learning

Digital media is used in children-dedicated museum work to encourage individual interpretations and engagement with content, to increase the attention span of visitors, to visualize complex subjects, and as an outreach tool. Additionally, digital learning plays an important role in ensuring accessibility.
Digital tools are utilized to facilitate life-long learning. They function as a response to an increasingly digital learning environment and enhance the overall learning experience. From touchscreens and tablet computers to robots, VR, AR, apps, virtual tours and smart exhibits, digital learning in museums has many faces and is one of the fastest evolving educational practices of the 21st century.

13 Kåre Andersen, Marianne Bager, and Anneken Appel Laurs, *History conveyed through dilemma-based communication. A toolbox for museums and schools*, p. 6.

Enquiry-based learning
Enquiry-based learning is an educational method based on self-directed exploration or research by the learner. Presented with a general theme, children are encouraged to identify their own issues and questions. They then examine the resources they need to research the topic.[14]
An important aspect of enquiry-based learning is the use of open learning, which has no predefined outcome or result: children are simply asked to confirm their outcomes with their research.
"In open learning there are no wrong results, and students have to evaluate the strengths and weaknesses of the results they collect themselves and decide their value."[15]
One of the most renown enquiry-based learning styles is project-based learning.

Gamification
Gamification is the application of game design principles, game design thinking and game mechanics to non-gaming applications and processes to solve problems and engage participants.[16]

Gamification can be implemented in various forms – digital and analog. Common elements used in museum work are points/scores, badges, riddles, quests/challenges, leader boards, individual performance feedbacks and teams.

Media-based learning
These are educational practices based on the individual or guided exploration of books, magazines, video clips, audio files, documentaries, digital libraries/databases or online contents.

Nature play/outdoor play
Nature play allows children to experience nature and can have physical, cognitive, and emotional benefits such as risk taking, discovery, exploration, imagination, sensory stimulation, development of physical skills, teamwork, and cooperation. Increasing urbanization and smaller backyards have significantly reduced children's daily contact with the natural environment and their connection with it, therefore museums take on an important role in offering nature experiences to children.[17]
In our context the term 'nature play' includes any form of outdoor play, outdoor-like play, and the (indoor) use of natural materials such as wood, stones, sand, and water.

Object-based learning
The object-based learning method uses objects to facilitate learning. Objects come in various forms, such as collection items, facsimiles, everyday objects, symbolic representations, but the method typically involves visitors handling and interrogating physical artefacts. The use of objects can act as multi-sensory tool to promote learning and engagement.[18]
Objects stimulate imagination and help transfer and apply newly gained knowledge to other contexts. They can be used in multiple ways and offer an authentic and often tactile experience combined with encouraging associative processes, which fosters a deep understanding.

Open-ended play/loose parts play
Open-ended play settings are environments that have no pre-determined limitations, instructions, rules, or pre-set sequential guides for children to follow or a already-decided outcome.
Children are encouraged to make their own decisions and engage their creativity and imagination. Open-ended materials are non-descript items that a child can play with freely. However, they can be themed (e.g., different kinds of tree items like bark, wooden discs, dried leaves, little branches, and other wooden items in an exhibition about the forest).

Peer learning/intergenerational learning
The main concept of these methods is to encourage in-depth learning by facilitating learning between individuals. The museum and its staff transfer their sovereignty of interpretation to the visitors and merely provide the tools and platform to exchange knowledge, instead of ready-made explanations and perceptions along with a predetermined learning plan. Visitors serve as learning peers, guides, and learners alike.
In peer learning, children are encouraged to acquire and share in-depth knowledge with their peers. They become experts on a certain topic and are asked to find ways to convey it to other visitors.
Intergenerational learning is based on reciprocity and mutuality involving people of different age groups where the generations work together and benefit from each other in terms of perception, learning methods and experiences.

Phenomenon-based learning
Phenomenon-based learning centers around the shared observation of genuine real-world phenomena. These phenomena are approached holistically from different points of view, crossing the boundaries between subjects naturally and integrating different topics and themes. [19]
These learning techniques share similarities with enquiry-based learning and are often implemented together. The major difference is that phenomenon-based learning always requires a global context and an interdisciplinary approach.[20] This means that a topic must be a real-world issue or 'phenomena' and that learners are required to apply different perspectives to study the topic.

Role play
Role-playing games are a form of play which are encouraged and structured by predesigned settings. The core of this immersive method is the playful exploration of different roles and characters, which helps children and adults alike experience different realities and dive into a topic.

Storytelling
Storytelling is one of, if not the oldest cultural technique of humankind to convey knowledge. It generates memory and promotes learning. Similar to the construction of memory in the brain, storytelling works with emotional connection and associative processes. Dramaturgy and narrative elements are used to create subtexts that allow us to remember content over long periods of time.[21] Even if the listener does not understand every detail concretely, they will still understand the core elements of the story.
In children-focused museum work, stories are used in various ways: oral storytelling, using narratives in exhibition design as a guiding system to provide an emotional connection to abstract concepts and content, object-led storytelling, visitor-led storytelling, story-based game design, etc.

Take-over (day)
Takeovers allow children to discover museums from a behind-the-scenes perspective, by taking over the roles and jobs of adult museum workers. They get the chance to step into real-life decision-making positions in organizations for a predefined period.
Children gain valuable insights, and experience a workplace, while organizations benefit from a fresh perspective on their work.[22]

Tinkering & Making
The tinkering and making approach is based on the realization that learning works best through trial and error and when involving all senses.[23]
'Tinkering' refers to making small changes on something, often to repair or improve it. In the context of learning, tinkering is part of a trial and error-based process that rewards persistence, resourcefulness, and self-sufficiency. 'Making' is part of the DIY-culture and emphasizes learning through doing, often in a social environment. The term includes a set of multifarious activities from traditional crafting techniques to robotics and 3-D printing. Making activities are often peer-based and motivated by creativity, fun and self- fulfilment.[24]
Tinkering and making develop the capacity for innovative problem solving by engaging children in projects that incorporate all STEAM topics (Science, Technology, Engineering, Art, Math).
In museum work, the term 'Tinkering' was introduced and developed as a museum education concept at the *Exploratorium Science Center*, San Francisco.

14 The University of Manchester, "Enquiry-based Learning," [accessed 22.09.2025], https://www.ceebl.manchester.ac.uk/ebl/.
15 Wikipedia, "Inquiry-based Learning," [accessed 22.09.2025], https://en.wikipedia.org/wiki/Inquiry-based_learning.
16 Wikipedia, "Gamification," [accessed 22.09.2025], https://en.wikipedia.org/wiki/Gamification.
17 Tim Gill, "Physical Play in a Risk Averse Society," [accessed 22.09.2025], https://rethinkingchildhood.com/.
18 Klaus Weschenfelder and Wolfgang Zacharias, *Handbuch Museumspädagogik*, 220.
19 Phenomenal Education, "Phenomenon-based Learning," [accessed 22.09.2025], https://www.phenomenaleducation.info/phenomenon-based-learning.html.
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21 Wikipedia, "Storytelling," [accessed 22.09.2025], https://en.wikipedia.org/wiki/Storytelling.
22 Kids in Museums, "Takeover Day," [accessed 22.09.2025], https://kidsinmuseums.org.uk/what-we-do/takeover-day.
23 Deutsches Museum, "Tinkering,"]accessed 22.09.2025], https://www.deutsches-museum.de/angebote/schule-im-museum/projekte-forschung/tinkering/
24 The Exploratory, "Tinkering Toolkit," [accessed 22.09.2025], https://learningisopen.org/toolkit/tinkering-making/.

Design

Children-focused spaces in museums, galleries and science centers do not only rely on engaging exhibits to be interactive. The physical venue itself holds the potential of fostering interaction. Providing an appealing and atmospheric, yet functional and safe space that enables and fosters various types of interaction is key to conveying the prepared contents.

A well-curated and designed space creates natural encounter zones. Here, the old, the new, the unknown, the familiar and the surprising elements come together. The space offers children a protected environment in which they can explore, experience and wonder.

Creating appealing areas for children is a crucial step towards enabling a positive, holistic learning experience. When designing children's exhibitions and workshop spaces, we need to consider how children move: they sit, lie, and move on the floor, jump from elevated areas, climb, run, hide, swing, scratch, fiddle, and pick. Some age groups even tend to bite and lick their environment.

Providing a comprehensive guide on exhibition design exceeds the scope of this guidebook and is a content area well-covered by other resources. Thus, in this chapter we will focus on three core principles for children-focused exhibition design, which go hand in hand with educational content development and curation.

Dramaturgy

In exhibition design dramaturgy can be defined as a spatial and chronological sequence between a starting point and an end point.[25]
Here it is yet again crucial to consider how children approach an exhibition setting with various offers: they most likely will not follow predefined orders or paths (unless enforced by guides or restrictive design), explore the room before settling in one area, drag loose items to other areas, repurpose items and interior. Moreover, they are drawn to bright colours or sounds and will be easily distracted by the plenitude of options or other visitors.
The overall aim is to build an arc of suspense on a meta level that covers all elements of the exhibition to create an atmosphere which pulls children into the topic at hand. Instead of arranging one independent phenomenon after another, a dramaturgic approach creates an overarching story-based setting through content and design elements.[26]

Scenography

Scenography can be summarized as the act of staging contents in multidimensional settings which can be physically entered and experienced by the audience. The goal is to create a sense of place through crafting holistic environments or atmospheres. Illustrations, pictures, art design, interior design elements, eye catchers, visual breaks, colours, fabrics, light, sound, digital media, films, and scents are used to craft immersive spaces.
In immersive exhibition spaces, the boundary between imaginary space and real space is deliberately blurred. The story-driven imaginative world becomes a multidimensional reality, visitors can literally step into. This emotionally and aesthetically appealing design approach is a powerful tool to accelerate the memorability of the contents offered by turning information into experiences.

Sensorimotor skills

Sensorimotor skills refer to the interdependency of sensory and motor functions. All learning fundamentally consists of a unity of knowledge and ability.
"Sensory and motor interaction provides for the foundation for a child's growth, development and learning within the world around them. Sensory stimulation/feedback and motor go hand in hand. The motor system drives the sensory stimulation and sensory stimulation/feedback drives the brain. It is critical for these skills to improve and develop to aid in behaviour and academic learning. Often, children struggling with learning or behaviour have inadequately developed sensory and motor systems."[27]
Hence, design features that stimulate and encourage the development of sensorimotor skills are essential in children-focused museum environments.

25 Werner Hanak-Lettner, "Szenografie," in *Handbuch Ausstellungstheorie und -praxis*, 156.
26 Teresa Wally, *Der kindermuseale Raum*, 77f.
27 Pediatric Boulevard, "Sensorimotor Skills," [accessed 22.09.2025], https://pediatricboulevard.com/what-is-sensory-motor-and-why-is-it-important/.

Quality standards

Today, children and families are the fastest growing audience segment in the museum, gallery, and science center sector. Additionally, education has been recognized as a core function of museums by ICOM since 1961. However, until this project, there was no elaborated framework of international working standards for children-focused museum work.

We at *Hands On! International* are convinced that children-focused museum work is the key to replacing outdated educational paradigms and fostering skills children need to tackle contemporary challenges.

Together with our 21st Century Children project partners *Junges Museum Frankfurt* and *Sladovna Písek*, and dedicated members and colleagues from all over the world, we have created a global vision of children-focused museums, galleries and science centers serving as change agents by being *Homes of 21st Century Education*.

This initiative aims to highlight the unique potential of places of cultural education by putting a spotlight on their capability as education pioneers for 21st century children.

Furthermore, we provide an elaborated common ground and define characteristics for these various forms of children-focused museums, galleries, science centers and similar organizations, paying respect to the wide range, whilst still making a clear distinction from other museum types and play spaces such as playgrounds.[28]

Home of 21st Century Education aims to:

- Accelerate the want and need for children to co-create a more sustainable society.
- Offer a meta-vision for sustainability of the sector. Including: social sustainability, peace education, empathy, combating poverty, gender-issues, and tackling disadvantages on all levels.
- Highlight future-oriented informal education in museums, galleries, and science centers as a key to tackle contemporary challenges.

Organizations certified as a *Home of the 21st Century Education* are innovative learning spaces with children at the center of their work. By encouraging playful engagement with cultural heritage, they equip children for a sustainable future of social, cultural, and environmental cohesion.

The manifesto of eight characteristics for *Homes of 21st Century Education* is accompanied by a catalog of criteria, which serve as a benchmark for high-quality children-centered informal education.

Directory Homes of 21st Century Education criteria

The following criteria are used to establish a common ground for all organizations interested in becoming a certified *Home of 21st Century Education*.

To help organizations work towards meeting these criteria, we provide additional information, tips, and examples along with each criterion below.

Cultural gateways

- Regular opening hours/available to the public/permanency of offers
  We are looking for organizations that are permanently committed to serving children as *Homes of 21st Century Education*. Therefore, one-time projects or organization whose entire children-focused offers are only available to a very restricted group of visitors are not eligible for this scheme.
  Generally, offers must be available on a regular basis to groups and individual visitors alike. However, not all offers necessarily need to be available to each visitor segment.
- Permanent organization type/legal entity
  The entity in charge of children-focused museum work must have a permanent organizational form and verified legal status in the country of operation (registered company, association, NGO, or similar).
- Elaborated mission statement with focus on education
  The mission statement outlines the main purpose and aims of the organization. It is a public expression of core activities and values and is an important management tool to ensure internal and external transparency and professionality.
  To serve as *Home of 21st Century Education*, an organization needs to commit to education in the mission statement. Ideally the dedication to serve children is also anchored in this formal expression of identity.
- Rooted in cultural heritage, interpreting tangible and intangible heritage with a focus on low-threshold interpretation
  No matter if you identify as museum, children's museum, gallery, science center, or center of art pedagogy, the *Home of 21st Century Education* movement is open to all organizations whose working mode derives from the museum sector and uses tangible and/or intangible cultural heritage to interpreted and impair topics. The formats used to convey overarching topics through cultural heritage must be comprehensible and accessible to a family audience.
- Content is always chosen in connection to the concrete community, its needs & circumstances
  This includes creating a clear predefinition of target groups for each offer and assessing relevant contents and topics for this very group. Local conditions, living realities, factors and potential challenges are carefully considered when choosing topics.
  To ensure relevancy and representation, children and/or the local community should be in some way involved or consulted when creating new offers.
- Socially responsible pricing structure
  The organization is required to consider the financial capability of various visitor groups when setting ticketing prices for their offers. E.g., group deductions, bulk tickets, free passes or reductions for low-income families, participation in national or local accessibility schemes for cultural participation, free entry for personal assistants/carers/accompanying persons, annual passes, etc.

Educational lab

- The creation of exhibitions, environments and programs is supervised/advised by psychologists, sociologists or pedagogues, and the team respects latest research findings and developments in education, learning theories and practices
  The organization acknowledges state-of-the-art findings connected to children and learning in the fields of psychology, pedagogy and sociology and implements them into its practices. Furthermore, the organization takes measures (e.g., expert consultants, research cooperation, partnerships with universities, internal scientific research and/or monitoring of programs & exhibitions, postgraduate staff trainings, desk research of scientific journals, etc.) to stay on the cutting edge of relevant scientific research.
- Educators and staff with expertise in learning theories, child development, and pedagogy
  The organization permanently employs staff with profound pedagogical expertise for all children-focused offers. Educators, guides, and other frontline staff are internally or externally trained to communicate adequately with children.
- Articulated learning objectives
  Each offer is created to enable visitors to achieve pre-specified learning objectives. These are learning aims elaborated as specific statements of what knowledge and skills visitors gain as a result of each offer, clearly outlining what kind of learning is expected to take place throughout a given program/activity. For organizations to qualify as *Home of 21st Century Education*, the educational quality and benefit of each of their offers must be evident.
- Articulated philosophy/working method (or combination of methods)
  Another measure to ensure the educational quality of an organization's children-focused offers on a long-term basis is a defined and transparent working method, along with a structured and pre-planned course of action when it comes to creating new offers.
- Play-based approach
  Learning through play is undoubtably one of the main common denominators of children-focused museum work. Hence, we consider a play-based approach an obligatory minimum standard for our sector.
- The organization invests into on-going training of their staff
  E.g., regular internal and external training opportunities, such as seminars, workshops, lectures, courses, conferences, job shadowing, and postgraduate programs.
- Education staff is involved during the early stages of designing new products
  The role of education staff is not limited to conveying ready-made contents. Pedagogical expertise must be a constant in all stages of creating and implementing a new offer.
- Ongoing long-term partnerships with local schools, teachers, and caregivers.
- Established policies to track audience feedback and adapting programs and environment.
- Focus on innovation: new methods and tools are tested
  A crucial role of children-focused museum organizations is to serve as incubators of contemporary education. This includes developing, testing, and researching innovative practices.
- National and global networking
  Organizations share and exchange practices with colleagues and other professionals on a national and international level.

Holistic education

- The learning setting offers meaningful experiences based on the Hands On! Minds On! Hearts On! principles
  E.g., interactive elements need to convey meaning

28 View the second part of our trilogy: View the second part of our trilogy: "What can be..... Best Practices".

not just interaction ('button pressing' vs. 'hands-on learning'), a clear commitment to the educational mission, and to conveying scientifically correct content.
- All formats are interactive and foster individual exploration based on the needs of the audience
  E.g., finding ways how to break down complex topics without oversimplifying and carefully choosing which concepts children can really grasp.

Education for humanity
- Society (and its big issues) – oriented – Even a little child is a part of society with its big problems
  Children are regarded as competent members of society and are made aware of contemporary societal issues, challenges, and concerns.
- The *Homes of 21st Century Education* also activate through their environment, uniqueness, and innovative design, which can serve as inspiration to envisioning a new world
  Organizations take on the role of change agents by serving as meeting place and center for active citizenship.
- Asking questions and encouraging visitors to create and test their own solutions, instead of providing ready-made & one-sided answers
  E.g., transparency about potential biases, never judgemental, raising questions to be answered individually by each visitor, and offering a wide range of perspectives.

Intergenerational: with children in the center
- Permanent children-focused offers for individual visitors and groups
  Examples for non-permanent offers: hosting/creating a children's exhibition once, that is on show for a limited duration, or all offers can only be accessed by a small group of partner schools.
- Learning spaces that elevate child-centered learning and encourage positive adult-child interactions
- Offering a diversity of formats catering to children and an intergenerational audience
  Organizations are required to predefine the target groups for each of their offers, along with considering the learning needs and skills of each specified target group. E.g., marking all offers as suitable to people from 0 to 99 years old is not a realistic concept when it comes to adequately serving each target group.

Polyphonic, participatory, and inclusive approach
- Diversity in staff (culture, gender, age, ethnicity, etc.) regarding the specifics of the local environment or elaborated strategy to ensure local communities feel welcome (bridging potential gaps between staff & visitors to ensure representation)
  E.g., measurements/policy/approaches to ensure that the diversity of visitors is addressed appropriately by all staff members and all local communities feel welcome and represented (trainings, awareness raising, inclusive language, outreach strategies, etc.), a hiring policy that considers the local demographic landscape.
- Collaboration with children, young people, and families as equal partners of events, displays and exhibitions
  This will help to include their stories and give them a stronger sense of ownership.
- Adequate communication strategy & channels and keeping them up to date
- Website/social media: children ('s offers) and playful approaches visible and visually represented
  Commitment to children as an audience must be evident in the organization's main online communication channels. E.g., children's offers on website visible at first glance, either visually (images) or in the written text.
- Design & content for everybody
  Apart from the obvious means of accessibility such as ramps, heights of objects and information material in multiple languages, inclusion is considered in every content area.

Digitally aware and active
- Offering means and opportunities to develop and practice skills, which might not be fostered in other environments
  E.g., complementing contents and skill development offered by other organizations (schools, libraries, playgrounds, etc.), focus on 21st century skills.
- Being aware of the digital world and having a clear strategy to support children to navigate reality and virtuality
  Organizations are asked to develop a clear position on how to respond to current needs in connection with digital tools and environments. Given the unique nature of each organization, program and target group this leads to multifaceted approaches. These can range from a strict no screen policy for pre-schoolers to foster analog engagement as a response to their increasing consumption of screen time, to use familiar digital devices to approach new topics or as impetus for individual exploration.

Dynamic and evolving organizations
- Inclusion, active partnerships, polyphonic approach, and interconnectivity should be woven into the organization's mentality
  Towards to audience, but also directing internal practices.
- Focus on sensitive topics: serving as a hub of real social relevance, functioning as a medium of digesting 'big issues' & contemporary developments
  Serving as 'glocal' discourse centers for contemporary issues and dedicated to actively serving society.
- Environment and formats need to be adaptable and be able to react to changing societal needs
  The organization must be willing to modify existing offers based on the feedback and immediate needs of the target group. E.g., serving their audiences remotely/digitally/outdoors/on social media during 2020/2021 lockdowns.
- Audience-focused not primarily collection-focused
  E.g., choosing topics and contexts relevant for the audience.
- Providing advocacy and a platform for making children's voices heard in society
  Advocacy for play and children's rights, providing a platform for children to actively participate in society and express their thoughts and ideas.

How to get certified

Do you want to highlight the quality of your work? Do you want to benchmark it and get international feedback on your work? Do you want to lobby for high-quality children education in museums and similar organizations?
The brand and label *Home of 21st Century Education* provides:
- a shared vision and mission for organizations dedicated to serve as future-oriented learning spots for children
- a catalog of global quality standards and benchmarks for children-centered museum work
- an official certification for meeting the quality standards, issued by an internationally acclaimed organization.
- research findings featured in 3 publications.

Home of the 21st Century Education targets organizations who aim to equip children to actively co-create a more sustainable society by offering individual education based on a combination of high-quality interpretation and joyful and interactive engagement with tangible and intangible heritage.

We welcome applications from children's museums, museums, science centers, galleries, and similar cultural organizations with a particular emphasis on children's programming.

For further information on how to get certified, visit **www.21stcenturychildren.eu**, or contact *Hands On!* via **secretariat@hands-on-international.net**.

Resources & Further Reading

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