

The Roles of Science Museums in the World of Tomorrow

Jacob Thorek Jensen

Danish Museum of Science and Technology

Abstract

This paper focuses on how the roles of science museums must change in order to become relevant for diverse audiences, and especially those who are not using the institutions today. The paper unfolds experiences from the Danish Museum of Science and Technology, where they are completely rethinking the role of the museum in society as part of the development process for a new science museum. The museum is working with science capital as a tool and framework to explore new possibilities for the museum, and to develop new practices. This is needed if the museum wants to be an active agent within contemporary society and in the world of tomorrow.

Keywords

Science capital, Transformation, Experiments, New formats

Introduction

The roles of science museums have to change in order for them to become more relevant to a diverse audience, and not only serve the people who have been the core visitors for the past 50 years. This paper will address this topic by sharing insights and experiences from the Danish Museum of Science and Technology (DMST). The museum is experimenting with how to create new practices in order to appeal to people who may not perceive it as “something for them”.

DMST is working with the concept of science capital as a tool to change practice, mindset and working culture at the museum, but with the acknowledgment that science capital is not a fixed set of ideas and methods which can be copied from one institution to the other or from one country

to another. The museum is investigating and experimenting with science capital and what it means to them. The museum is also exploring what it can do to change the institution so that they are a more active and attractive fixture in society. This would increase the museum’s relevance to various demographics with regard to factors such as gender identity, educational background, spirituality, and sexual orientation.

This is what this paper will focus on. The paper will be concluded by addressing challenges and potentials science museums must focus on if they want to be regarded as important and relevant institutions in the society of tomorrow.

The resurrection of a museum

The DMST is an independent museum with a national responsibility to deal with the

technological and industrial development of Denmark. The museum receives support from the Danish government to carry out this work.

At the moment the museum is located north of Copenhagen, Denmark's capital; however, it will move to Copenhagen within the next 5 years. Here they will transform one of the most iconic industrial facilities in the city, an old power station, into a new science museum and science/innovation hub for companies, organizations, and institutions, which work with the green transformation of society and the world.

The museum was established in 1911 by the Confederation of Danish Industry and the Association of Craftsmen in Copenhagen. The diversity of the collection is enormous; from steam engines to smartphones; a Soyuz-space capsule; the original LEGO; production facilities; Denmark's first car from 1888, which can still drive making it the world's oldest functioning car; and the compass, which Hans Christian Ørsted used in 1820, when he discovered electromagnetism – a key discovery for the creation of our modern electrical society. There are approximately 30,000 objects in the collection. The unifying term is innovation. Every single object in the collection is an example of new ideas or new discoveries.

Even though the museum is more than 100 years old, it has been somewhat neglected in recent years with falling visitor numbers and a collection in poor condition. Five years ago, it was decided to rethink the role of the museum in society, which includes the relocation of the museum into the new facility, and the development of new practice for how a science museum functions. The museum is now located in an old industrial facility, which hasn't been renovated and therefore unsuitable for a modern museum. For instance, many large areas within the museum are unable to be heated properly. In a way, the development of the new museum is also the rebirth of the old museum. This creates an opportunity to completely rethink the role of the museum for its visitors and ultimately society. The existing museum is currently being used as a laboratory, where they can experiment with new ideas, formats, and methods.

Science – right where you are

The DMST has been granted funding from the biggest foundation in Denmark, the Novo Nordisk Foundation, to experiment with how they can create new science communication and science education, which is relevant for people, who don't see science as something for them. The project is called 'Science – right where you are'. The aim is to:

- To make visible that science is not just about formulas, but instead is part of the world and life that each of us is living.
- To show how insight in science is important in order to be able to act and make decisions in our lives.
- To show how scientific discoveries make the world more wondrous and interesting.
- To establish a starting point where it is acknowledged that we all have different approaches to understanding scientific insights.

The project is not just targeted at children, who are the usual target group for such initiatives, but also adults, as the museum believes it's important to support the curiosity and learning for all citizens in the society.

The museum is working closely together with the Science Museum Group and draws on their knowledge and experiences with science capital, which is the theoretical framework for the work, the DMST is doing (Archer et al., 2015; DeWitt et al, 2016) Through different Danish studies into how and why young people engage with science in Denmark, the museum acknowledged that the British society is very different from the Danish society making it difficult for the museum to copy the initiatives that the Science Museum

Group has been doing with science capital. Because of this, the DMST is now working on new methods, formats, and tools based on the concept of science capital, but rooted in a Danish context. Everything they are developing at the museum will be made accessible to other institutions; not for them to copy what the DMST is doing, but for them to find inspiration to challenge their own practice.

The project is divided into several phases. It's important that data and experiences are being collected systematically, so it's possible to learn from the mistakes and thus continually develop new practice and formats based on previous experiences. It's okay to make mistakes and failures. Only through pushing the boundaries for what a museum can do and can be are they able to make connections with people, who are not using them today. The DMST is carrying out 12 experiments, which take place in existing and new exhibitions and public and educational programmes. The following is a presentation of two of the upcoming experiments.

Learning through experiments

The DMST is developing a new public activity inspired by escape rooms and mystery walks, which have become quite popular among younger Danes in recent years. This activity is targeted at couples—

either as a first date activity or for a couple who has been dating and wishes to do something new together. These people are not among the usual visitors at the museum, but the hope is to become relevant for these people by finding inspiration in a concept that they are already familiar with. It's important that the activity is developed so the participants do something together, as visiting museums is often a social event. It's also important that the participants are encouraged to actively use their bodies as well as their minds in order to complete the different tasks. Another aim with this activity is to introduce an activity at the museum which has an estimated time frame. Currently, most of the museum's offerings don't have an estimated time frame, which means that visitors who are not familiar with the museum don't know if they should expect to be at the museum for 1 hour or 4 hours. The museum is developing a mystery walk, which has an estimated time span of 45-60 minutes. The concept of the walk is a quest centered on some of the iconic objects in the collection.

Another one of the upcoming experiments with the new practice is to make a pop-up museum outside the walls of the museum in order to reach some of the people who would never even think about entering the museum. They have partnered up with Copenhagen Airport and are

planning to make a temporary museum in their facilities, where travelers can enter the pop-up museum and get a small taste of what a science museum can be. This is a unique opportunity to reach millions of Danish and foreign travelers, who may be unfamiliar with the museum or under the impression that a science museum is not something for them. The idea is not to replicate the exhibitions and practices at the museum currently, but instead experiment with how they can engage new audiences in science and technology and then hopefully ignite an interest and curiosity in science. The pop-up museum will be open for at least 1 year, where it's expected that at least 1 million visitors will see the pop-up museum; those being visitors who are not users of the museum today.

The DMST has several other experiments in the works for the coming years. In 2022, Denmark will host the first three stages of the world's biggest bicycle race, the Tour de France. In relation to this, the museum will make an exhibition about bicycle culture in Denmark and explore how science relates to an ordinary bicycle. In 2023, the main thematic focus of the museum will be artificial intelligence. In relation to this, the museum will conduct several experiments to investigate how they can make the science and technology related to AI interesting and accessible for

people who don't find it relevant for their lives, even though AI is affecting the lives of most people in Denmark already today.

The aim is that every single experiment should foster new ideas, knowledge, experiences, and reflections that the museum can use when creating other interventions in the exhibitions, and the public and educational programs. It's a continued effort to develop offerings for a wider selection of people.

Challenges and potentials

Museums across the world have faced enormous challenges in connection with the COVID-19 pandemic, where many have been forced to be shut down for long periods. It's up to the employees of the science museums and the science centers to decide if they want to use this historic event as a catalyst for creating new and better offerings, which are relevant for a wider selection of the public, or if the institutions should return to business as usual and create 'safe' block buster exhibitions, which will secure high numbers of already familiar visitors.

I would argue that the science museums and science centers can use this situation to transform the institutions to be more inclusive, more relevant, and more interesting. These ambitions for the institutions are very much in tune with the

thoughts and ideas behind science capital. That's why I believe science capital can be used as a tool and framework to facilitate this transformation.

Even before the COVID-19 pandemic, only about half of the Danish population had visited a museum within the last year (Jessen, 2018). There was an enormous inequality in the educational background of those who choose to visit the museums and those who did not. Citizens with higher educational backgrounds were highly overrepresented at the museums compared to their share in the Danish population, while citizens with vocational educational backgrounds were highly underrepresented at the museums compared to their share in the Danish population (Jensen & Lundgaard, 2015). Denmark is a fairly equal and democratic society, so I anticipate that these numbers can only be more alarming in some other countries—at least if we believe that museums, including science museums, have something to offer for everyone in the society. This was an issue before the COVID-19 pandemic and this will be an important issue to address in the aftermath of the pandemic, where a lot of institutions are struggling to get visitors back in the museums.

Science museums have a unique opportunity to play an active part in the society and address challenges and

potentials, which are of an importance to citizens today. Current topics must be the starting point of all the activities. There's no need for fear of dealing with conflicting issues—even though some might think less of the institutions—if we participate in the public debate about issues such as climate change, vaccinations, refugees, mass surveillance, etc. It's in these zones of non-comfort where hidden opportunities lay buried.

References

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