Interactive Museums
Learning Through Experience

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Hands-on:

Museums are no longer somber places housing artifacts that cannot be touched or where monotone, guided tours are organized and pre-determined for you. Instead, they are taking on a role of being entertaining as well as educational. Interactive and multimedia exhibits give visitors the ability to discover and learn at their own pace, plus, they engage individuals, keeping them interested as they experience the museum’s various themes on a tangible level. This type of exhibition works on the premise that the act of participating in activities that exercise not only our listening and reading skills, but our motor skills, critical analysis, and physical skills, enhance the brain’s power in understanding and interpreting information.

“Interactive” is not new to museums; in fact, they were among the first organizations to utilize interactive multimedia and technology as a means of facilitating public interest and participation in the learning environment. Now days, most museums, world wide, are using the interactive approach in order to enhance the experiences of their visitors. The use of multimedia applications in museums ranges from museum databases and catalogs to orientation and interpretive guides and, of course, exhibits designed to be “used” by the visitor. These designs allow the public more access to information within the museum, as well as more control over their museum experience. They are able to further explore topics that interest them and engage in activities that will allow them to learn more. In other words, interactivity in museums allows for a more personalized visit...a museum tailored to the individual.

Multimedia provides patrons with greater access to museum collections. Things such as multimedia databases, which offer digitized information and videodisc images about all of the museum exhibits, can be used at terminals within the museum and are open to all visitors. These databases go beyond being merely a catalogue. Rather, they are more like an interactive encyclopedia providing detailed pictures and facts. Patrons can choose to learn more about a particular exhibit just by using a touch-screen. A multimedia guide works in much the same manner. It takes things a step further by assessing what patrons are interested in and then it gives them information on related topics or exhibits in the museum that they might find interesting. Such guides usually provide information in multiple languages and can even display directions to specific areas of the museum.

These tools are useful as far as exploring the museum as a whole but individual, interactive exhibits are what make museums entertaining and fun for children and adults as well. Not only do they allow for an enhanced exploration of things like natural history artifacts and artwork, but also interactive museums allow visitors to work hands-on with scientific and technological exhibits. Patrons engage in activities that range from producing their own video to building their own robot. Visitors participate in group or individualized experiments and are able to handle equipment themselves. They can push buttons, pull levers, create things and test them, and they can watch live demonstrations or take part in them. This gives people the opportunity to explore and discover the nature of things rather than just reading about it or being told.

This exciting way of enticing everyday citizens to learn has made its mark worldwide. Interactive, technological museums can be found in many different countries covering every region of the globe. This just goes to show that the idea of making learning fun for everyone is a universal one.

Sciencentre

The Queensland Sciencentre (www.sciencentre.qld.gov.au) in Australia offers games, activities, and interactive exhibits meant to appeal to all community members, young and old. From earth and environmental science, to chemistry and physics, the Sciencentre has over 170 hands-on exhibits that allow visitors to mix fluids, bend light, build bridges, and experiment with geometric principles. One such exhibit, “Slippery Air”, allow individuals to experiment with the mechanics of a hovercraft. The exhibit simulates the lift of a hovercraft vehicle and shows the influence of an air cushion on reducing friction.

As you move through the exhibit areas, volunteers (mostly young adults) who are known as Explainers are available to assist visitors in interacting and understanding the science behind the exhibits. The Sciencentre also has interactive shows that deal with many themes from collisions to using liquid nitrogen. There are regular teacher workshops and the center even offers support materials to instructors in order to aid them with lessons and activities to do outside the museum or in a classroom setting.
Yokohama Science Center:
The Yokohama Science Center (www.city.yokohama.jp/vs/vsc/vsc-e-menu.html) in Japan focuses primarily on space science. It allows visitors to learn by experience through hands-on exhibits. The center’s staff perform science shows and experiments as well. The exhibition section is divided by different themes on different floors. For example, the “Space Discovery” floor allows visitors to closely examine and play with electromagnetic waves, lights, radio waves, and x-rays. Individuals can experiment with a light controlled robot and manipulate radio-controlled probes. Another exhibit, “Space Training,” gives visitors the ability to engage in various physical training exercises necessary to become an astronaut. Individuals experience the surface gravity of the moon, can operate an electric manipulator via remote control and can test their reflexes, jumping ability, overall speed and durability.

The Yokohama Science Center is also equipped with a computerized planetarium that is officially called the “Space Simulator”. It accurately depicts the amount of stars an astronaut may observe from outer space. The planetarium is unique because not only can individuals observe stars seen from earth but they can also observe earth and other planets seen from different locations in space.

Exploratorium:
The U.S. is filled with many hands-on museums although one of the most extensive and well known is the Exploratorium (www.exploratorium.edu) in San Francisco, California. The Exploratorium calls itself the museum of science, art, and human perception, and houses over 650 exhibits that allow for interaction with the museum’s visitors. Like the Queensland ScienCentre, the Exploratorium employs and trains high school students and young adults as Explainers who help visitors use the various exhibits. As new exhibits are built and older ones repaired, visitors can actually watch the process as the carpentry, machine, and electronic shops are visible. Individuals can experiment with mirrors, lenses, filters, magnets and electricity. They can explore musical instruments, wheels, and pendulums among other things.

One of the most recent exhibits at the Exploratorium is “Revealing Bodies”. This exhibit incorporates science, art, and technology to capture the many different ways we perceive and use the human body. The exhibit includes various instruments visitors can use to explore their own bodies, plus, digital images of cross sections from an actual human body are at their disposal. The Exploratorium even provides webcasts of scientific demonstrations of body imaging technologies.

Discovery Centre
South Africa has its own version of the Exploratorium right on the campus of the University of Pretoria. Their SET (Science, Engineering, and Technology) Discovery Centre (www.up.ac.za/science/explore/explore.htm) is a place for people of all ages to engage in what they call, “edutainment”. The SET Discovery Centre has an outreach focus on poor or disadvantaged communities and is designed to expose both children and adults to science and technological demonstrations and fields. The center covers themes such as physics, light, space, air and water. It even delves into topics like mechanics, chemistry, transportation and telecommunications.

The Discovery Centre is more like a laboratory or a “scientific playground” where visitors are able to use several apparatuses to experiment with as they wish, and watch and participate in demonstrations.

ESPACODATA
The ESPACODATA (www.mnit.org.br/home-i.htm) is Brazil’s future National Museum of Information Technology and Telecommunications. It intends to inform visitors of the past, present, and future of these technologies, their applications and impact on society. This museum is expected to function on a very practical level in the sense that the museum will demonstrate how computers and telecommunications directly affect everyday people’s lives. The ESPACODATA will be equipped with what are known as “Discovery Rooms”. In these rooms, visitors of all ages will have the opportunity to utilize the museum’s various tools and research techniques.

The National Museum of Information Technology and Telecommunications is being designed with interactivity in mind. Individuals will have the ability to operate ESPACODATA’s equipment and participate in workshops or small groups in order to learn how to better use current, state-of-the-art standards in computer and telecommunications technology and explore what’s to come.

The Future
As technology advances, more and more museums will be incorporating hands-on activities or interactive exploration demonstrations into their programs. Soon, museum visitors will be able to try out more advanced equipment such as simulators and “Virtual Reality” applications once they are introduced. Air and Space museum visitors will be able to “fly” a spacecraft rather than just look at one, and art fans may be able to explore a DaVinci painting from the “inside” with the help of virtual reality. The options are limitless. Still, the key concern will always be giving the community, adults and children alike, access to the museums’ knowledge and learning tools. Attracting the audiences through using methods that are exciting, challenging, and fun, not only benefits the museums, but aids in keeping communities educated, up to speed, and in constant interaction with the world around them.