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Assignment 6 - Essay

**"Welcome to the Stone Age" - an object handling workshop for  
children from 8 to 11 years**

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## **Abstract**

In the following essay I am going to assert the concept of an object handling workshop for primary school children which I have developed on my own. With the help of the notions of Hein, Gardner and Csikszentmihalyi I am going to briefly summarize learning theory regarding museums and children. Considering children's learning one focus of the essay is the educational interplay between school and museum. I am going to demonstrate that museums and their child-orientated programs are a valuable complement to education in school. The workshop "Welcome to the Stone Age" is designed in consideration of the depicted learning theories and in regard to the needs of primary school children. In conclusion I assume that making museums desired places for children is the key to attract the entire family to museums.

## **Introduction**

When I left secondary school seven years ago my most trained skill was "learning facts by heart". For some reason I could cope very well with the traditional lecture and textbook-centered approach (Hein 1999: 74) to learning. Other children could not.

Learning at school is standardized and focuses on frontal instruction although children's ways of learning are as different as their characters. From my perspective school is not able to offer enough object handling practice for reasons of time and money. For many children listening to a teacher standing in the front and making notes in order to learn them by heart is not an effective way of learning. Considering this museums can be a valuable complement to school and their target group-orientated programs might activate even those children who cannot cope with the school's demands. Activating children is something I would like to contribute to working in a museum.

The below asserted workshop is designed for a museum of natural history, archeology, pre-history or history in general. It aims to show the characteristics of the New Stone Age and methods of an archeologist. With the help of various learning theories by Mihalyi Csikszentmihalyi, Howard Gardner and George E. Hein I attempt to create a child-orientated workshop that offers multiple entrypoints to knowledge.

## **Defining the target group**

For many years education in museum was standardized through guided group tours (Hooper-Greenhill 1999: 3). However, museums no longer consider their visitors to be a unified mass without personal demands on a museum experience (Hooper-Greenhill 1999: 23). For that reason museums began to define target groups, groups of people sharing age, social status or cultural background (ibid: 19). For the purpose of designing an object handling workshop for a specific target group, a museum educator has to be well aware of the general characteristics of the target group (ibid: 21f).

I chose the target age from 8 to 11 years for several reasons. The lower limit I set at the age of 8 because it might be hard for children to understand the dimensions of time in a

workshop about the Stone Age (Jensen 1999: 112). I assume that children at the age of 8 know at least something about historical epochs in order to set the Stone Age in a historical context. Furthermore some of the activities require motor skills that younger children might not have. The upper limit was set in order to challenge the students' skills without boring them.

Due to their limited experiences children have in general their own ideas and conceptions about the world and how it works. These ideas determine children's way of perception and understanding of new experiences (Jensen 1999: 111). Sometimes children cannot distinguish thoroughly between reality and fiction which also has an effect on their perception (Jensen 1999: 112).

In general students like handling and looking at objects (Ingle 1999: 314f). When growing older their preference for touching will increase (Ingle 1999: 316).

After having defined the target group "children from 8 to 11 years" it is necessary to take a closer look at learning theory in general, regarding learning in museums and regarding children in order to understand what learning means and how it works.

### **Learning theory in general**

One major question of learning theory as a discipline is: How do we learn? In the following I am going to answer this question briefly.

Every day people experience a lot of new information and new situations. More or less deliberately the brain selects and organizes what is worth to be stored in memory (Hein 1999: 74.). Another task in this process is to make sense out of an experience, to explain and interpret it (Hooper-Greenhill 1999: 12). The interpretation of own experiences is to a great extent influenced by personal prejudices and foreknowledge. In turn both prejudices and foreknowledge depend on the interpreter's position in history and society (ibid: 12). In order to make meaning out of what a person experiences it is crucial to connect foreknowledge with new experiences (Hein 1999: 77f). Therefore museum experiences must activate the visitors memory in some way so that the person is able to connect existing knowledge with new information.

For creating a valuable learning atmosphere is also important to know how learning is undermined and undergirded. In my opinion Mihalyi Csikszentmihalyi's idea of intrinsic and extrinsic learning is a useful approach to that. He states that learning is incentive-driven which means that people only learn if they can anticipate some kind of reward (Csikszentmihalyi 1999: 147). If a reward is coming from outside an activity the person's motivation is called extrinsic. In turn if a person is doing a task for his/her own sake, he/she is intrinsically motivated (ibid: 147). Whereas learning at school is often extrinsically motivated because of external incentives, just as grades, learning at museums rely on intrinsic motivation, because there are no external forces to go into a museum (ibid: 148).

Personal interest is a very good catalyst for intrinsic learning. If a person is interested in a topic he/she decides deliberately to put psychic effort into learning it instead of learning something else (Csikszentmihalyi 1999: 149). The through this process gained knowledge is supposed to have a long-term effect not only on the person's knowledge but also on his/her personality which is shaped through knowledge and experience (ibid: 149). Therefore I assume that extrinsically gained knowledge as it occurs in school might be forgotten after a short period while learning on the basis of intrinsic motivation lasts longer and might influence one person's future perception and interpretation of every-day experiences.

### **Learning theory regarding museums**

As the section before has shown a museum can provide a much more pleasant learning atmosphere than a school. In order to use this advantage museum educators need to regard a set of aspects concerning learning theory in museums.

One from my perspective valuable approach to learning theory in museums is George Hein's "constructivist museum". Constructivism in terms of learning theory means that learning depends on the mind of the learner, whose ability to learn is constantly reorganized. The constructed knowledge is the learner's individual one (Hein 1999: 75f).

At a museum the visitor constructs personal knowledge from the exhibits. Museums with a constructivist approach enable their visitors to use different ways of learning in order to make their own connections with the objects (Hein 1999: 76). According to Hooper-Greenhill the educator's role in this concept is to provide experiences in order to test or increase the visitor's knowledge (Hooper-Greenhill 1999: 21).

Different ways of learning have been described by Howard Gardner. His multiple intelligences approach, which refers to linguistic, logical-mathematical, musical, spatial, bodily kinaesthetic, interpersonal and intrapersonal capabilities, underpins the idea that intelligence is not only the ability of logical thinking but rather the ability to know how to do things (Gardner 1999: 100). Whereas school demands mainly linguistic and logical-mathematical intelligence, museums refer to all types of it (Gardner 1999: 101).

Regarding the aforementioned museums can give their visitors a feeling of value and encouragement (Hooper-Greenhill: 22), because the question is not if visitors want to be active at museums but rather if museums enable them to be it (ibid: 19).

### **Learning theory regarding children**

Section one defined children of a certain age as a target group for museum programs. After discussing learning theory in general and learning theory regarding museums it is necessary to know how children learn and what aspects have to be considered when designing a museum workshop for children.

Although children are supposed to be born with natural curiosity outside factors like extrinsic motivation in schools undermine their desire to learn (Csikszentmihalyi 1999: 146f). Children's visits to museums are often forced by adults, which leads to an extrinsic motivation to learning. By providing programs that offer at least some choice to children, they feel less forced to do tasks and open up for learning (Jensen 1999: 122). Characteristical for children's learning is that they first learn and understand concrete things. It is much harder and takes longer for them to understand abstract ideas (Jensen 1999: 112).

Since attention is a "scarce ressource" (Csikszentmihalyi 1999: 148) it is crucial for museum educators to concentrate on few objects in order to attract the children's attention (Jensen 1999: 112). Touching objects is a suitable way to direct children's attention in a museum (Ingle 1999: 315). Touching objects at museums is supposed to be an emotional and intellectual experience for students which increases their feeling of empathy and sympathy for other cultures or the past (Golding 2009: 201). The understanding of the past will also increase by dressing up in contemporary costumes of the explored time (Ingle 1999: 316). According to Shuh handling objects can also enhance children's ability for critical observation (Shuh 1999: 89).

A museum visit organized by school often serves to demonstrate practical aspects that underpin the theory learned at school. Surveys have shown that students often cannot connect knowledge gained at school and related activities in museums (Anderson 2003: 225f). For that reason it is necessary to make these links clear and accessible for children.

Object handling programs in museums need not only to be linked to school education but also to the general environment of the children. The learning effect will be greater when children can compare their own culture, its values, beliefs and customs with the displayed cultures (Anderson 2003: 229).

In summery child-orientated museum programs need to be a combination of both education and entertainment in order to provide a supporting learning atmosphere for children (Jensen 1999: 115).

### **Workshop "Welcome to the Stone Age" in two parts**

The below depicted workshop is designed for school children from 8 to 11 years and deals with the characteristics of the New Stone Age. According to its topic the workshop would fit into any museum with Stone Age exhibits, for instance museums of natural history, archeology or prehistory. I chose this topic because I consider the changes that took place at the beginning of the New Stone Age to be essential for the development that led to our modern societies. Settling down, keeping animals, cultivating plants and making pottery are the key innovations of the time which is often called *Neolithic Revolution*.

The workshop is divided into two sessions: the first one deals with the life in the Stone Age, where the children are supposed to simulate the every-day life of the Stone Age people in order to get an understanding for it. The second part of the workshop answers the question

”How do we know that” by giving a brief insight into the work of an archeologist.

In order to create not only long-term knowledge but also a welcoming atmosphere for the children in the museum it is necessary to regard the above mentioned theories like Gardner’s multiple intelligences and theories about children’s learning.

The children of the target group might have heard about the Stone Age, but as I mentioned in section one they are not able to grasp the dimensions of time. However, for the understanding of the workshop it is necessary to comprehend the time gap between today and the Stone Age. In order to solve this problem the museum educators have to start the workshop with a travel in time together with the children. The whole class of children, the teacher and approximately three museum educators meet in a separate room, away from the exhibition so that neither the children are distracted from other visitors nor visitors are disturbed by the children’s noise.

After a short greeting the museum educators ask the group of children what they think when the Stone Age was. Most of the children will not know that. The educator’s task now is to go back in time step by step together with the children. They first ask, how old the children are and then how old their grandmothers are. On a white board the educators put applicable pictures of a today’s child and a teenager of the 1950ies or 1960ies, which stands for their grandparents. Additionally the photographs are shown in large scale on a projection screen so that it can be seen by all children. Aside of the pictures on the whiteboard the educators write the time (today and 60 years ago). Next the educators uphold a picture of a knight and ask the children, when knights have lived. I think that it is highly likely that at least some children know that knights lived in the Middle Ages about 1000 years ago. The second picture shows Jesus and stands for the time 2000 years ago. After that the children might not know any further eras by years but maybe at least by name. The next era is Ancient Egypt 3000 years ago which is represented by a picture of Ra and Horus. 5000 years ago people started using metals extensively in the so called Bronze Age. The picture for the children will show a person in woven clothes forging a sword. The next picture will show a person who is forming a pot out of clay in front of his housing and other persons harvesting crops and milking goats which stands for the New Stone Age - the period which is studied by the children. A last picture shows a person in pelt who is hunting a mammoth with a lance in the Middle Stone Age 9000 years ago. After that the latter two pictures are seen on the screen again in order to compare them. With the help of appropriate questions posed by the educators the children are supposed to find out the innovations of the New Stone Age as mentioned above. On the whiteboard all eight pictures each with the name of the era and the amount of years that have passed since then can still be seen.

I am well aware of the fact that the depiction of the eras above is rather simplified. From my perspective this is necessary according to the age of the children and their ability of understanding time. It also serves the aim to understand the time gap between today and the

Stone Age as well as the chronology of major cultures in Europe and the Mediterranean area.

After this education session the children have time for being creative. With the help of the new gained and existing knowledge the children get the task to imagine themselves as people of the Stone Age and show the others how they would look like. Either school or the museum has to provide different materials such as crayons, wax crayons, paint brushes, acrylics, watercolors, plasticine, card stock, scissors, glue and so on that can be used to create a Stone Age image of oneself. This task gives the students the choice to use materials according to their preferences and intelligences. Children with distinct spatial or kinaesthetic intelligences might prefer to build a figurine out of plasticine instead of drawing. This activity also enhances the children's ability to feel empathy for the past because they imagine themselves living in the past.

The first two activities might have lasted 60 to 90 min so the children need to have a break for drinking, eating or going to the rest rooms. From my perspective these breaks are essential in order to keep the children's attention alive.

The group has to change rooms now. They will go into the *Stone Age-lab* where they find the main activities of the workshop. Everyone dresses up with fake-pelt clothes so the children feel like Stone Age people. Then the children can choose from four different activities: agriculture, pottery, baking bread and making clothes. Approximately five to six children (if a class consists of 20 to 24 students) will be in a group and each group will do one of the activities. Since the activities will last longer than the first ones and require personal impetus it is necessary that the children are intrinsically motivated. Each group will be supported by one adult, either a teacher who has been instructed or a museum educator, who will help them by asking motivating questions and answering the children's questions rather than instructing them. This is crucial for the success of the workshop because the children should be creative and find own solutions instead of doing what adults force them to do.

The task *agriculture* combines four activities. The group first has to seed grains on grassy soil. On a table that is standing in the center of the room they find a wide range of tools which are replicas of Stone Age tools. They decide on their own which tools are appropriate to solve the task. The supporting adult will provide information about the chosen tools, for instance the name and the material they are made of. The second activity is cutting crops again with chosen tools. Both the grassy soil and the crops are in a small scale field as part of the room. The last activity in this group is milking and shearing a sheep. Since the first farmers in the Stone Age kept mainly goats and sheep rather than cattle milking the sheep is closer to reality. For reasons of animal protection and safety there will be no real sheep but a fake one with a milk mechanism and fake pelt.

Another group will work with the task *pottery*. In the New Stone Age mainly three methods

of making pottery existed. The group tries to imitate all of them. One method uses coils of clay which are already lying there. The children should try to find out how this method works on their own with a little help of the supporting adult. Another method is to put slabs of clay together and forming a pot out of it. This should be tried out as well as crafting a pot from a ball of clay which is the third method.

Children with an interest in preparing food can take part in the task *baking bread*. The children get a bowl of crops and are supposed to make a dough. On the tool table they will find a grind stone which they hopefully pick in order to make flour out of the crops. Water for the dough will be provided by a fake standpost. With the help of the supporting adult the dough can be baked in an oven in the ground which looks like a Stone Age oven but works with electric fire rather than real fire due to safety reasons.

For the task *making clothes* the children have to produce clothes on their own. Fur and wool are provided as primary products. Spindles and needles can be found on the tool table. With the help of the spindle and the wool the children can produce yarn for sewing the fur together to coats. The supporting adult is assisting but does not instruct them.

When all groups are finished, which can be forced by the educators, each group tells the whole class what they have done. I think that the children will concentrate on their own activities so they do not notice what other groups do. The educator's role in this part is to make links between the groups' activities. The *agriculture* group produced crops and wool. The crops were essential for the *baking bread* group. Wool was a primary product for the *making clothes* group. The *pottery* group made pots which in turn were used by the *agriculture* group to collect the crops and the milk. Although the children were working separate they all depended on each others success. The discussion round afterwards is needed to comprehend this.

This part might as well have taken 90 minutes so that the children need a longer lunch break. Lunch is provided by the museum cafeteria which offers healthy food that is suitable for children. Heavy food would tire the children out which makes it very difficult to grasp their attention for the afternoon session.

Part two of the workshop will take place at the *archo-lab*. In this separate room will be a little excavation site. I choose not to make this an outside activity because it would depend on the weather. The educators ask the children if they wonder how we know so much about the Stone Age and tell them that archeologists dig into the ground in order to find remains of the past. Then the educators invite the children to be archeologists themselves. Every child gets knee pads and gloves and is able to choose a modern tool like a shovel, a trowel or a brush. The soil of the excavation site contains replicas of findings, for instance sherds of pottery, needles, broken blades made of stone and so on. The findings need to be the



same objects the children handled in the morning session so they can remember them. After cleaning the findings a little bit in order to notice details, the children are given the task to assign the findings with intact objects like whole pots. The last task is to find modern equivalents to the Stone Age tools, for instance bowls, knives, scythes and so on which can be found on a table inside the room. This activity links the past with the children's present and helps them to feel empathy for the past and understand it a little bit more.

### **Desired learning outcomes**

The above depicted workshop gives the children many opportunities to choose activities. According to that the learning outcomes are not the same for every child but depend on its choices. It also depends on the questions a child has asked the supporting adult during the activities. Hence, the workshop follows the constructivist approach, in which the learner decides what he/she wants to learn.

Since the workshop is a collaboration with schools there need to be some general learning outcomes for the whole class. Otherwise schools might not take the time to attend this workshop. One major aim is to enhance the children's understanding of time and giving them an idea when the Stone Age was with the help of the first activity. Additionally the children should find out how mankind gained knowledge about the past in general and the Stone Age in particular by working on an excavation site. During the group-of-five session in the morning the children should get an awareness of the fact that life has not always been as easy as it seems to be today. Other learning outcomes depend on the children's individual ability to understand and interpret experiences and can not be forecasted in detail.

### **Conclusion**

The aforementioned has shown that according to several learning theorists standardized and teacher-centered learning is most ineffective. However, this approach to learning is deep-rooted in our schools and in society. Children who cannot cope with this way of learning are left behind. For them learning becomes a torture which might effect their course of life because without success in school the range of possible professions is small.

In turn museums have the merit to engage divers ways of learning by handling objects rather than pure facts. This attracts children's attention and can make the museum a desired place for children. Happy children equals happy parents so I assume that children's positive experiences can make the museum not only an attractive place for children but also for families (parents and grandparents). Hence, convincing children that museums are welcoming places is a big chance for museums in order to get more visitors.

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