CONFERENCE PROCEEDINGS

3RD INTERNATIONAL ACADEMIC CONFERENCE ON PLACES AND TECHNOLOGIES

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URBAN MOBILITY, TRANSPORT AND TRAFFIC SOLUTIONS

THE IDEA OF COGNITIVE CITY - A CHALLENGE FOR NEW TECHNOLOGY TO PROMOTE HEALTH

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ABSTRACT

New technologies offer us amazing opportunities for the progress of cognitive forms of learning, because they provide a virtual way of observation of the world around us. The concept of cognitive city, as an idea, enables to take advantage of new technologies and their availability in all spheres of society. Health promotion and disease prevention is possible to conduct through the enlightenment of children, youth and people. The program of prevention of human health should be presented in an interesting, user-friendly and modern way. In that sense, an option is as a separate subject or as part of some broader themes in the concept of cognitive cities. For the strategy and the concept of enlightenment, it is necessary to be adapted to the new trends of contemporary strategies of development of urban areas and updated according to the needs of target groups. In addition to providing information, tools are needed that would measure the interest of the people in the topics of health programs with the aim of achieving better results. This paper will indicate the possibilities offered by new technologies implemented as tools for health promotion and disease prevention in the idea of the concept of cognitive cities. The use of multimedia content with the help of new technologies implemented in the concept of cognitive cities can in plastic and entertaining way show the terms and conditions for the use of preventive measures, and why we use them.

Keywords: Cognitive city, Cognitive forms of learning, Health promotion, Health literacy, e-Health Systems.

INTRODUCTION

Cognitive science is the interdisciplinary study of mind and brain, combining the concepts, methods and insights of large parts of psychology, neuroscience, evolutionary biology, linguistics, philosophy, anthropology and other social sciences, and formal methods from computer science,

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mathematics and physics (Andler, 2005). In cognitive science the mind is represented as an information processor (Marshall, 2009; Bruner, 1990). Through human senses information passes into the mind and is stored in memory and may be observed as "input" of information. As a reflection of the entered information behavioural "outputs" are resulting. Knowledge of the process, which refers to human learning, creates space for new tools that allow enlightening people on how to protect their health. New technologies make it possible to visualize the issues of health prevention and to reduce misunderstanding that might occurs in humans. Misunderstandings arise as a result of the imperfections of language, what H. P. Grice discusses in his scientific paper entitled Logic and Conversation (Grice, 2004). Visualization supports the objective explanation of textual and verbal presentations.

New technologies offer us amazing opportunities for the progress of cognitive forms of learning, because they provide a virtual way of observation of the world around us. This paper will indicate the possibilities offered by new technologies implemented as tools for health promotion and disease prevention in the idea of the concept of cognitive cities. Methodological assess includes following steps: overview of the current vision of health promotion, consideration of health promotion integrated into the framework of ideas of cognitive cities and concluding remarks.

VISION OF HEALTH PROMOTION

Health promotion is defined by the Ottawa Charter for Health Promotion as "the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical mental and social wellbeing, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to wellbeing" (WHO, 1986). Document 'Health education: theoretical concepts, effective strategies and core competencies' created by the World Health Organization (WHO, 2012), expressed the following view of health promotion and education: "Health promotion is viewed as a combination of health education activities and the adoption of healthy public policies. Health education focuses on building individuals' capacities through educational, motivational, skill-building and consciousness-raising techniques. Health literacy is an outcome of effective health education, increasing individuals' capacities to access and use health information to make appropriate health decisions and maintain basic health".

Health literacy is clearly dependent upon levels of fundamental literacy (Nutbeam, 2000). The term health literacy is originally used in the United States and describes and explains the relationship between patient literacy levels and their ability to comply with prescribed therapeutic regimens (Ad Hoc Committee on Health Literacy, 1999). This approach defines health literacy as "the ability to read, understand and act on health care information" (Center for Health Care Strategies (CHCS), 2000). Health literacy is described by Nutbeam in the paper 'Health promotion glossary' (Nutbeam, 1998) in the following sense: "Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. By improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment. Health literacy is itself dependent upon more general levels of literacy. Poor literacy can affect people's health directly by limiting their personal, social and cultural development, as well as hindering the development of health literacy. "

In order to achieve success in health literacy, promotional material must be adapted to people in the area where health promotion is conducting. Knowing national history, religious and societal beliefs, looking through the lens of past, society can be able to transcend problems and make decisions.

HEALTH PROMOTION INTEGRATED INTO THE FRAMEWORK OF IDEAS OF COGNITIVE CITIES

Cities play a prime role in social and economic aspects worldwide, and have a huge impact on the environment (Mori and Christodoulou, 2012). Albino, Berardi and Dangelico in their paper mentioned the following data related to population growth in cities (Albino, 2015): "According to the United Nations Population Fund, 2008 marked the year when more than 50 percent of all people, 3.3 billion, lived in urban areas, a figure expected to rise to 70 percent by 2050 (UN, 2008). In Europe, 75 percent of the population already lives in urban areas and the number is expected to reach 80 percent by 2020. Cities consume between 60 percent and 80 percent of energy worldwide and are responsible for large shares of GHG emissions (UN, 2008)". Cities should respond to people's needs through sustainable solutions for social and economic aspects (Turcu, 2013; Berardi, 2013a; 2013b). Adapting to the needs of citizens technologies can be used in cities to empower citizens (Cugurullo, 2013; Kitchin, 2014; Vanolo, 2014).

Due to predictions which indicate that the majority of the population will live in cities, people should be provided with the knowledge how to create life in cities more sustainable. This knowledge should be based on the uniqueness of geographical origin of community, custom and national history, religious and social beliefs in order to be accepted by the population. Population growth causes unavoidable expansion of the city both in height and width, which requires cities to find ways to manage new challenges and to overcome the problems arose (planning the infrastructure, linking parts of the city, creating of proper customer services, etc.). With the problems that draw the cities of the future will face future generations, and therefore their knowledge should be theoretically stable and flexible enough to be easily applied to solve those problems. Using of cognitive science to explain phenomena of perceiving, thinking, remembering, understanding language, learning, we can form a program that can train the new generation in all scientific fields. One of these branches is preventive medicine and preventive dentistry because people need to be healthy and happy as a condition for survival.

PLACES FOR LEARNING BASED ON THE CONCEPT OF COGNITIVE SCIENCES

Figure 1: The interactive miniature park Madurodam - a fun form of education for both young and old

Cities need the spaces that will allow the whole family to participate in a fun form of education. This presents a challenge for planning of urban environment that will provide space for such activities. Miniature parks can correspond to such criteria. These areas are designed for the purpose of education, recreation and tourism. In such parks there are exhibitions of the selected specimens of history and culture of a nation or a city. Examples of such exhibitions or miniature cities are Madurodam in Netherlands, France Miniature in France, Catalunya en Miniaturra in Spain, Miniaturk in Turkey. The authors of this paper find that the miniature park Madurodam has elements of cognitive approaches to learning, giving the opportunities that parents and children through the use of active exhibits learn about the world around us. The exhibits are not elements

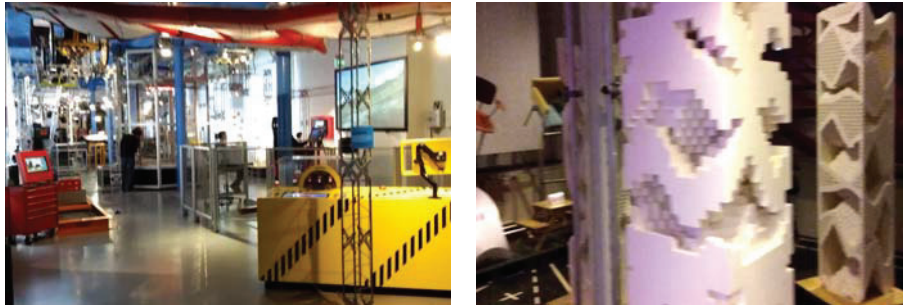just to watch, but through practical experience, through interaction, knowledge is acquired (Figure 1).

Figure 2: Science Centre Delft - an educational entertaining centre showcasing all the best scientific and technological research for people of all ages; Interaction, inspiration and creativity are core principles of functioning.

Also, it should be noted technical and scientific exhibition and research area at the University of Delft. Such institution is Science Centre Delft (Figure 2). This institution has exhibits of scientific and technological innovations and research at TU Delft. It is scientific education centre for local school children, but also for people of all ages. Stimulating, challenging and hands-on experience are the three principles on which is based the concept of the Centre (DELTA IN ENGLISH, 2010). Visitors are offered the opportunity to build and design things themselves.

Planning such a space for family fun, combining entertainment and science, should be implemented through the joint participation of scientists from various scientific fields. The position of such area should be in urban environment. Organizationally, this area should be flexible to allow for establishment of spaces for exploring new developments in theory and examples of technological artefacts. These items should present scientific issues but also encourage visitors to work in a team. This is particularly important for children to work with their parents as a team. Learning takes place immediately through the exercises that are the creation of the author of the artefact. In the context of the exhibition should be a topic that involves the transfer of knowledge about ways to preserve health, such as recreation, proper diet and ways of maintaining hygiene of the body and mouth. Visitors are stimulated on perceiving, thinking, remembering, understanding and learning information from artefacts in examination area.

CONCLUSIONS

Cities are the mark of the society and civilisation. Every city has its cooperation with society and that relationship is the base of the sustainability. The concept of cognitive city, as an idea, enables to take advantage of new technologies and their availability in all spheres of society. People must be educated to use new technologies to get the benefit of them. The younger generation more quickly accept the use of new technologies than the older generation. To overcome the gap between generations within the family it is important that families learn as a team. In this sense, cognitive parks and science centres are places where it is possible to run these processes. Exhibition spaces facilitate the process that allows the input and storage of information and influence the "output", such as behaviour, decision-making, application of knowledge in the right context, and also the protection and prevention of health. Knowledge of cognitive science is the key to successful organization of areas where are joined together entertainment and learning.

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