EXPERIENTIAL LEARNING IN ARCHITECTURAL EDUCATION. DESIGN AND INSTALLATION OF INTERACTIVE SCIENTIFIC DISPLAYS FOR THE COPERNICUS SCIENCE CENTRE

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What is the formula for efficient architectural education at the time of IT revolution, when all kinds of information are just one click away? One of the possible answers is experiential learning – a method proposed by American educational theorist David A. Kolb.[1] Kolb believes that learning is a process consisting of four phases: experience, reflection, conceptualization and application. The process is repetitive and involves reaching a solution through constant experimentation – learning by trial and error. This paper is a case study of teaching using the method of experiential learning.

A group of fourth-year students from the Faculty of Architecture, Warsaw University of Technology (A. Rudowska, P. Krzyszczak, A. Piwnik, F. Dzimwasha and C. Nazaruk), was assigned a task of designing and supervising the construction and installation of interactive displays for the Copernicus Science Centre. All stages of the project – from the concept to project execution documentation – were performed by the students themselves. Their supervisors (from the Centre: P. Wójcik, E. Walędzik, M. Grzymała, M. Mieczkowski and from the Faculty – the author) limited themselves to answering questions and evaluating the proposed solutions.

The team began working on the project in March 2013. From among more than ten different initial ideas, five conceptual projects emerged. They were subsequently presented to the management of the Copernicus Science Centre and received very well. Four of them were approved for implementation (Fig. 1, 2, 3, 4). The next stage was prototyping. Real-size physical models were built and used to test the correct functioning of the mechanisms and verify the repeatability of the expected phenomena in all the displays. The execution documentation was ready by September 2013. In December 2013, the finished displays for the "World in Movement" exhibition were tested. In spring of the following year, they were installed in front of the Centre.

The project proved that experiential learning can be a valuable addition to the traditional methods used in architectural education. According to the students, a major advantage of this method is the opportunity to operate in a real project environment – with actual contractors, a budget and a time schedule. It was a new experience for them to be able to develop the entire project and supervise its implementation. From the teacher's perspective it was rewarding to see how committed and motivated the students proved to be with this project as compared to standard class projects which are executed solely for academic purposes and are never actually implemented in the real world. It also appears that this approach allowed the students to better consolidate their knowledge and newly acquired skills. The client – Copernicus Science Centre – appreciated the designs and wanted them implemented, which demonstrates the high quality of the students' design solutions.

The main obstacles to popularizing experiential learning is the high cost and lengthy execution process. Combined with the natural limitations of Kolb's method (no theoretical instruction or self-learning, which are two integral elements of higher education), they make implementing the method on a wider scale in architectural education rather impracticable. With architecture, true experiential learning can only start after graduation.

Despite the above reservations, experiential learning might prove highly beneficial in architectural education, especially assuming a limited scale

[1] D. A. Kolb, *Experiential learning: experience as the source of learning and development*, Prentice-Hall, Englewood Cliffs, NJ 1984.

of the objects to be designed. It is worth considering industrial design as the field where learning design through experience might work best.

Keywords: architectural education, science centre, industrial design, experiential learning

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