Summary of the Workshop

Using the external environment of the school

Speakers: Leo van den Bogaert from the Unschooled Mind Company, Netherlands; Konrad Krainer from the University of Klagenfurt, Austria; Hannu Salmi from the University of Helsinki, Finland.

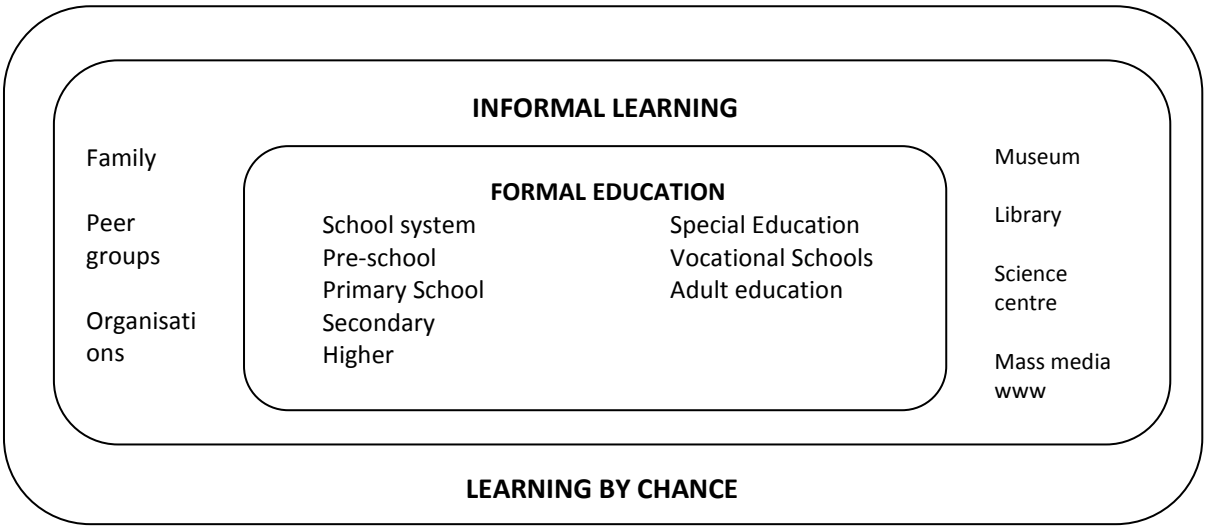
Report: Arja Kaasinen, University of Helsinki, Finland

Informal learning and formal education

Bridging the gap between formal and informal education is one of the main challenges of the education. Before trying to work with these challenges, it is important to understand what is inside these two concepts. There are many explanations for these concepts, but when looking at them a little bit closer, it is easier to understand their meanings.

Formal education includes education which happens at schools. It includes also special education, vocational education and adult education. Informal learning includes all the learning situations which happen outside school, for examples with family, at museums, libraries, through mass media or websites (Table 1). Formal education has an official goal (e.g. diplome), but informal education never has it.

Table 1. Informal learning and formal education



It is amazing to realize that 20 % of our knowledge is imported by formal education and 80 % by informal learning. These numbers show us the central role of learning outside the school. That is

why we have to be sure that the schools, teachers and administrations understand the fact that informal learning is a very important and big learning environment.

Informal learning had been considered for a very long time as a criticism of the school, which is no longer the case today. Informal learning has become an accepted way of learning. For example, the Fibonacci project is a kind of a bridge between formal (university) and informal (for example science centre) education and learning. Actually the differences between informal and formal learning places are not the point, the main point is that children will learn. But even so, teachers have to understand the difference between these two learning environments because teachers have to decide where to teach. Teachers should understand that informal learning is an opportunity, not an extra work. Informal learning is a big mental investment for teachers because they have to co-operate with other teachers or professions, they have to find practical arrangements (buses etc). And yes, there might be a lot of extra work at first. That is why sometimes outdoor activities and informal learning is not taken as a natural part of education.

Different ways and places of learning

The main point is that children learn. We know that there are plenty of learning theories. Many times, when people are talking about science and mathematics education, they use the term ”Learning by doing”. Sometimes that sentence is misused: children do not always learn if they just do. The term ”hands-on principle” might fit better to inquiry-based learning.

It is also important to think about meaningful learning. Is the learning situation motivating? It might be good to have a look at Finnish booklet about PISA-results, where it is written something about this issue. There are some results and examples about Finnish education and also a critical approach to it.

Many times ICT help pupils to learn and motivate themselves better than any other thing or place. That is one reason why it has become a very important tool for teaching and learning. Interactivities by ICT help pupils to understand many things much easier. For example, it is much motivating to learn and see how much water we are using, when testing it with ICT tools than reading it from a book. Augmented Reality equipments are one of new ICT tools (photo 2). With these high-technology equipments, you can make invisible become visible. For example, you can see with this equipment how the molecules are moving when it is cold or the temperature is over 50 C°. You can see how a hot air balloon is moving and you can understand why it is moving up and down. This tool can help children to learn abstract concepts and physical phenomenon in a very easy way.

That is also why science centres are good places to help and support schools and teachers. Actually science centres are now a big movement. New centres are built all the time in Europe. In those places where research is growing up in the field of science education, there are also science centres. Science centres can be used also as good learning laboratories where researchers can evaluate learning. The role of the outdoor activities in many different ways is very important. The school systems should understand it and make it possible for teachers to go outside. But it is not enough, it is also important to reflect on how pupils learn.

How to use external environments of the school?

There are several different kinds of projects and programs where informal learning environments, like science centres are used in very useful and fruitful ways. Those projects can give us examples of how schools can use external environments. They can invite 'the environments' at school, they can work together and schools can visit for example science centres. One good example is an Austrian IMST-program (https://www.imst.ac.at/). Inside that program there are plenty of projects going on, where schools are using external environments of the school. One example of this kind of environment is Natur Erlebnis Park (http://www.naturerlebnispark.at).

We should look an external environment as an open learning environment. It is not important whether you are learning informally or formally, as long as you are learning. We also have to be sure that our students are learning, so we need research, evaluation and self-reflection. The teachers should really know something about the differences between these two concepts, otherwise they could not realize that informal environment is playing such a big role in our learning processes.

Photo 1. Leo van den Bogaert using the external environment.

Photo 2. A boy using the augmented equipments in Heureka, Finland