3D Printing in teaching art

When we talk about using 3D printing in school teaching, art is not the first discipline that comes to mind. We are used to thinking that the study of art is done in the classroom, listening to the teacher's explanations, looking at images and, at most, visiting the works.

If you have ever been involved in art in any way, you will be well aware of the link between the concept of 'beauty' and proportion, i.e. the mathematical relationship between two measurements. Art and mathematics have a very close relationship and, in this specific area, 3D printing can bring great benefits to the education process that are useful not only for the artistic literacy of pupils.

3D printing to facilitate learning about ancient art

Do you still remember when you studied the three types of capitals at school? Of course you do! If you concentrate and dig into your memory, you will also be able to remember the names of the classical models: Doric, Ionic and Corinthian!

More difficult, if you are not an art expert, will be to remember what the distinctive features of each model are unless... you have learnt through direct experience!

Capitello Ionico, Athina, Greece
Photo by Josiah Lewis -https://www.pexels.com/

3D printing a new way of learning by doing

Learning by doing is a way of learning in which activity is the basis of the knowledge transfer process. Therefore, whenever possible, the good art teacher takes his pupils to visit the works he explains. Unfortunately, this activity is not always possible for logistical or economic reasons.

When we talk about ancient art, it can be complicated for the pupil to distinguish the characteristics of artefacts that have been eroded by the passage of time. Instead, building a 3D model of each individual type of capital will be an unforgettable experience that new generations can enjoy while older generations were forced to memorise the characteristics from illustrations on the pages of a book.

The use of 3D printing becomes a way of learning by doing.

3D printing to facilitate the learning of contemporary art and mathematics

Mathematics and architecture are related disciplines.

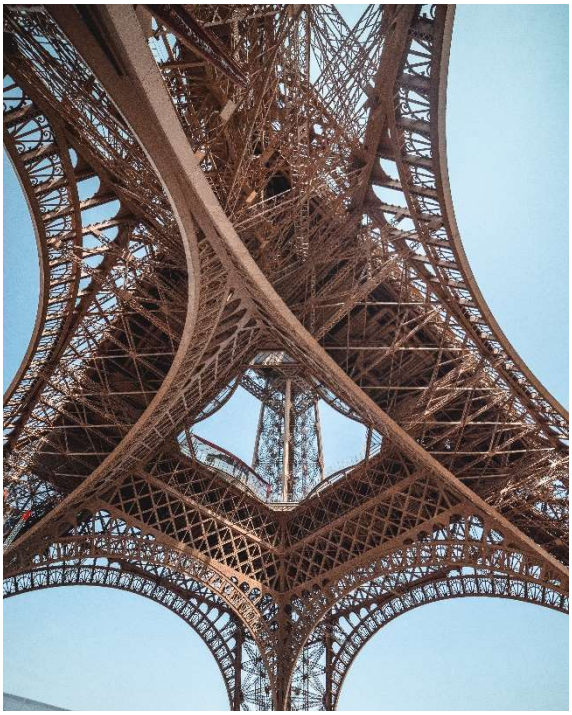
It is easy to imagine how producing a model and a 3D print of some works can help to understand that:

- architects use geometry to define the spatial form of a building

- architects use mathematics to design shapes that are considered beautiful or harmonious.

- architects use mathematical objects to decorate buildings

- architects use mathematics in the form of computer modelling to achieve environmental objectives.



Paris, Tour Eiffel, photo by Guillaume Meurice- -https://www.pexels.com/

Mathematics and geometry are the basis for the construction of functional and harmonious-looking structures. In addition, in contemporary architecture the architect-artist chooses to put real mathematical paradoxes or equations into construction.

One lesson and many benefits

From this perspective, the use of 3D printing in education is useful in two ways: on the one hand, it helps the student to assimilate the characteristics of the work and to place them within the artistic movement to which it belongs; on the other hand, it improves the student's scientific sensitivity by making him think about the not only theoretical nature of mathematics.

In addition, the use of 3D printing in education is useful in overcoming the dichotomy between the humanities and science. This objective must not only be achieved in order to overcome a limiting belief that prevents a peaceful learning process but is also a basic requirement for entering the world of work in the future.

Valencia, Calatrava, photo by Milan Chudoba - -https://www.pexels.com/

If reading this article has made you curious about the extraordinary opportunities that 3D printing offers for improving teaching, follow the development of the project and register on the ITE platform where lesson plans and case studies will soon be available for you to use.