



Could hands-on activities and smartphone in science CLIL teaching foster motivation and positive attitudes in students?

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Motivating students is one of the most challenging things we do as educators. We know that students need to be engaged to fully appreciate and learn what has been taught; the secret consists in nurturing student engagement. One of the newer ways to involve students and foster motivation in their Science learning consists in focusing on their usage and on applying knowledge and skills in their real-life. Students usually are engaged in authentic teaching pathway. Learning focusing on the experience helps teachers to improve classroom management by gathering students around a common organized activity.

Hands-on activities support problem-based approaches to learning by focusing on the experience and process of investigating, proposing and creating solutions developing critical thinking skills and enlarge student's scientific glossary.

We utilized in our classroom some lab activities that we learned at an ESA/GTTP Teacher training Workshop 2014 program at the Lorentz Center Leiden, Netherlands.

“Cooking a comet - Ingredients for life”

“Demonstration of the second Kepler's law using marbles”

New media equipment, as student's own smartphones, can increase the teaching impact speaking the same language used by the students every day. They can measure magnetic fields, their GPS coordinates (longitude and latitude), and so on. In this way we can measure distances as parallax using mobile devices and simulating distance measurements in the classroom, on the school campus. The smartphone is the device with which the students answer questions, take decisions, and solve quests. Students infact can observe the Universe from their classroom and scientifically they can watch the Sun with “Google sky map” or “Star walk” are excellent tools to learn your way around the night sky .As teachers we used these apps in the classroom when Sun goes through the constellations so our students don't believe in horoscopes.

This paper is focused on hands on activities and the effects of the smartphone in science teaching in classroom and their use in an innovative AstroQuest project, which consists of a class interactive role-playing game to teach Astronomy, Physics and Chemistry. The AstroQuest Project enhances interdisciplinary between sciences and humanities and is multi-language in order to be used as CLIL compliance.

References

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