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SPACEBUZZ: MAKING SPACE-EDUCATION RELEVANT AND INCLUSIVE FOR ALL CHILDREN

Abstract

One of the key challenges of space education is how to relate the often abstract and high-tech world of space to the personal context of children. In other words: how can we make space education relevant and inspiring for children? Another challenge is how to make a lasting impact, as many traditional space education programs are relatively short ad hoc interventions.

Netherlands-based SpaceBuzz met these challenges by creating a 12-lesson learning journey for children between 10-12 years old that uses experiential learning in combination with XR-technologies to inspire and teach children about space, Earth and STEAM-related topics. The overarching narrative of the learning journey is that children become astronauts themselves. In the programme, children train to become an astronaut, travel to space to experience the Overview Effect via XR-technologies in a rocketship-vehicle, conduct research and engage in outreach activities. The ultimate aim of SpaceBuzz is to turn children into ambassadors of planet Earth that want to contribute to keeping "spaceship Earth" healthy.

The first version of the SpaceBuzz program was piloted late spring 2019 on 10 primary schools throughout the Netherlands. The pilot was evaluated by conducting focus groups with children, interviews with teachers / facilitators and a scientific experiment on the effectiveness of the XR-experience for learning. It turned out that the choice for a strong narrative structure and combination of experiential laerning activities worked well. One key improvement point was that we needed to become more inclusive, especially for underprivileged children that have not been exposed to space-related topics before. The scientific experiment showed us that using VR / XR to take children into space provoked feelings of awe in children, which in turn yielded learning gains.

Based on the data that was gathered and lessons learned, we refined the program and formally launched it late 2019. Even though the COVID-19 pandemic forced us to scale back the rollout in 2020, we still managed to reach over 9000 children and continue to gather evaluation data of our programme, which so far has been very positive.

At the end of 2020, we also started to work with partners in France, Italy and Hungary to rollout the programme in these three countries late 2021 (SpaceBuzz is nationally adaptable in terms of astronauts, language and curriculum). The development and adaptation process is yielding valuable lessons, especially on the importance of taking local cultural, educational and institutional contexts into consideration.