PUNTE Project course at Linz School of Education Johannes Kepler Universität Linz

Course description:

At Johannes Kepler University in Linz, the PUNTE Project course has been incorporated into two pre-existing courses, Informatics for teachers (Schulinformatik), and Computational thinking. Within these two courses, the PUNTE Project course was used for theoretical and practical education of teachers on unplugged coding. The course is offered online and face to face in accordance with the preferences of students but also the rules of Johannes Kepler University. Testing of knowledge about the application of the PUNTE Project course will be done through the development of student projects that include the application of Poly-Universe.c

Responsible lecturers:
Dr Branko Andjic,
prof Dr Barbara Sabitzer,
Marina Rottenhofer.

The aims of the course are:
- to educate students to be able to use Poly-Universe in a variety of ways when teaching,
- provide students with an understanding of the applied Poly-Universe for the development of exercises for computational thinking,
- provide students with an understanding of the applied Poly-Universe for the development of exercises for unplugged coding,
- to improve the critical thinking of students,
- to help students to use the electronic version of Poly-Universe.

The structure of the course:

The course is structured as a semester course (duration: fifteen weeks) with five classes each week (2 lectures and three 45-minute activities).

The following parts of the PUNTE Project course have been incorporated in both of the above-mentioned teaching subjects:

1. Exploration of the shapes of the elements of Poly-Universe sets and debates about their possible value in teaching and learning based on an appropriate theoretical foundation in introductory classes (duration: 1 week),
2. Poly-Universe methodology, geometry, and its teaching approach (with proper theoretical background) are discussed (duration: 1 week),
3. Connections of Poly-Universe methodology with computational thinking and its application in education (duration: 2 weeks),
4. Connections of Poly-Universe methodology with Informatics and unlagged coding and its application in teaching (duration: 2 weeks),
5. Preparation and development of student projects on the application of Poly-Universe methodology in educational activities (duration: 1 week),
6. Presenting student projects and providing feedback (duration: 1 week).

Learning outcomes
After the course students will be able to:
- to use Poly-Universe sets in their future teaching,
- be able to use Poly-Universe when explaining computational thinking,
- implement Poly-Universe in teaching about the unplugged coding process,
- implement Poly-Universe in developing of critical thinking,
- use Poly-Universe sets in developing teaching and learning school projects.

Evaluation:
At the end of the course, students will have tasks to develop an educational project that involves the application of Poly-Universe in teaching and education. Students will have the opportunity to present their projects, based on this work will be evaluated students' work.