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## PUNTE Project — Application of Poly-Universe

Poly-Universe in different subject areas

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The aims of the course are:

1. To promote student teachers' knowledge about Poly-Universe materials and educational proposals.
2. To explore Poly-Universe from different perspectives and school content disciplines.
3. To prepare student teachers' to be able to apply Poly-Universe in teaching using different approaches.
4. To promote cooperation between student teachers from different subject areas.
5. To construct and organize a learning environment such a way that enables student teachers to recognize Poly-Universe as a useful educational tool to promote motivation and engagement.
6. To develop creativity which will help them to create new applications of Poly-Universe in teaching and learning.
7. To promote didactic skills when planning a Poly-Universe activity
8. To develop oral and written presentation skills

The structure of the course/module:

This module lasts 6 weeks, with 1 one class a week, 3h.

The module is structured in following sections:

1. Exploration of the shapes of the elements of Poly-Universe sets and discussions about their potential usefulness in teaching and learning based on appropriate theoretical background. Student teachers from different areas have different tasks related to their own areas (appendix 1). Students in groups, cooperate, observe and analyze the work developed by their colleges. They explore how to use Poly-Universe in their own subject areas, using different approaches and which links could be done with other areas. They register the process in a log book (duration: 2 weeks).
2. Students analyze their field notes, identifying evidence of motivation, engagement and also emotions associated. They read a text about Motivation and Engagement and make links to their field notes. (duration: 1 week).
3. Students plan an activity with Poly Universe to their own subject areas and try to make connections to other subject areas. (duration: 1 week).

4. Presentations of students' work and ideas about using Poly-Universe sets in teaching and learning and discussions about them. In the presentation students present his/her ideas and possible application(s) of Poly-Universe. (duration: 1 week).
5. Writing a report and answering feedback questionnaires (1 week).

Activities developed are presented in Table 1.

*1. Table: Duration and type of activity*

Activities	Module's duration and type
1. Exploring Poly-Universe in different subject areas	2 weeks compulsory
2. Motivation and engagement when using Poly-Universe	1 week compulsory
3. Planning an activity	1 week compulsory
4. Reporting and reflecting	2 weeks compulsory

#### Evaluation

The final grade is the average of the grade on participation, oral presentation and written report.

#### Contains of modules:

- 1 In the first moment, students explore the elements of sets and through playing and dealing with them (spontaneously or guided by teachers) students can recognize some possibilities of using Poly-Universe sets in teaching and learning. A specific activity related to their subject area is also proposed, Students can discuss other possibilities. They must register the process in a log book.
- 2 Students will read a text about motivation and engagement and discuss it. They will analyze correspondence with other field notes and discuss the potential of Poly-Universe for motivation and engagement.
- 3 Students will plan an activity for their own subject area, discussion teaching and learning strategies as well as links to other areas.
- 4 Students will present their work to colleagues and comment colleagues work
- 5 A written report will be produced including a reflection about the all process.