

Lab4Schools

Pedagogical Concept for Students with Learning Difficulties



## Pedagogical Concept

Among other goals of the Erasmus+ project “Lab4Schools” has been the definition of a concept to assist students with learning difficulties. This concept was to be applied during the course of the project and the influence on the motivation and success of the involved students was to be validated.

### 1. The reasons for learning difficulties

There can be a variety of reasons for learning difficulties in students. Some common causes include:

- (1) Neurological disorders: conditions such as dyslexia, dyscalculia, and ADHD can affect a student's ability to process information and perform academic tasks.
- (2) Cognitive and intellectual abilities: some students may have difficulty learning due to lower levels of intelligence, memory difficulties, or processing speed.
- (3) Environmental factors: poverty, lack of access to educational resources, and unstable home life can contribute to learning difficulties.
- (4) Health issues: physical or mental health problems can affect a student's ability to concentrate and retain information.
- (5) Learning style: some students may struggle with traditional teaching methods that do not match their preferred learning style.
- (6) Emotional and behavioural issues: students who experience anxiety, depression, or behavioural problems may struggle with learning.
- (7) Lack of motivation: students who are disengaged from the learning process may have difficulty retaining information and performing academic tasks.

It's important to note that learning difficulties can be caused by a combination of factors, and that every student is unique. An accurate assessment of a student's individual needs and challenges is essential for developing an effective plan for supporting their learning and success.

### 2. Fundamental approaches

One concept that could be effective in encouraging students with learning difficulties is the implementation of a "study buddy" program. This program pairs students with a peer who can help them develop and improve their study habits. The study buddy can provide support, guidance, and motivation for their partner, as well as help them set achievable goals and track their progress. Additionally, the program could involve regular check-ins and group study sessions, where students can learn from each other and share their own strategies for success.

Another approach could be to provide students with regular opportunities for self-reflection and goal setting. For example, one could ask students to keep a study journal where they reflect on their strengths and weaknesses, set weekly or monthly goals, and track their progress. One could also encourage students to set achievable goals that are specific, measurable, and aligned with their long-term aspirations.

Finally, one could offer students a range of resources to support their academic and personal growth. This could include academic tutoring, stress management workshops, or study skills courses. These resources can help students build the knowledge, skills, and confidence they need to succeed in their academic pursuits.

### 3. The benefit of short-term student exchanges

In recent years, there has been growing recognition of the benefits of student exchanges (study abroad programs for students) with learning difficulties and/or social and emotional problems. Study abroad programs provide students with opportunities to immerse themselves in a new culture, improve their language skills, and work with students from all over Europe on projects that align with their academic and career interests. These programs can also help students build important life skills, such as teamwork, communication, problem-solving, and independence, which can be particularly beneficial for students who are struggling with academic and personal challenges.

The student exchanges should be designed with the needs of students with learning difficulties and/or social and emotional problems in mind. This could include providing additional support and resources, such as academic mentors, counselling services, and support groups, to help students navigate the challenges of being abroad and working in teams.

The program could involve sending groups of students abroad for a structured program that includes language immersion, cultural exposure, and project-based learning. The students would be assigned to international teams, where they would work together on projects that challenge them academically and emotionally, while also providing them with a sense of purpose and accomplishment. The short-term student exchanges in the context of an Erasmus+ project suite these program proposals especially well.

#### Language Immersion

Language immersion is an important component of the study abroad program. By immersing themselves in a new culture and language, students can improve their language skills, broaden their cultural horizons, and develop a deeper understanding of the world. For students with learning difficulties, language immersion can provide an opportunity to improve their language skills and build their confidence in using the language.

In the context of this Erasmus+ project this component was immanent, as the students were subject to the language of the visited country as well as to speaking English with their colleagues from the other teams.

#### Cultural Exposure

Cultural exposure is another key component of the study abroad program. By experiencing different cultures, students can gain a new perspective on the world and learn to appreciate the diversity of human experience. For students with social and emotional problems, cultural exposure can help them build empathy, resilience, and a sense of belonging.

Again, this component is immanent in this Erasmus+ project, as getting to know the host cities, the schools and the students was a vital part in the timetable of all meetings.

#### Project-Based Learning

Project-based learning is an effective way for students to apply their knowledge and skills in a real-world setting. In the study abroad program, students would be assigned to international teams, where they would work together on projects that align with their academic and career interests. These projects could be designed to challenge students academically and emotionally, while also providing them with a sense of purpose and accomplishment.

The projects could involve a range of activities, including research, fieldwork, data analysis, and presentation. By working together on these projects, students can learn from each other, build relationships, and develop important life skills, such as teamwork, communication, problem-solving, and decision-making.

This component, too, was an immanent part of “Lab4Schools”. Working in international teams was the other core part of the timetable in all meetings.

#### Emotional Support

For students with social and emotional problems, the study abroad program should include emotional support to help them navigate the challenges of being abroad and working in teams. This could include regular check-ins with academic mentors, support groups, and counselling services. In addition, the program could incorporate opportunities for students to reflect on their experiences and share their learning with each other and their families.

#### Reflection and Goal Setting

Reflection and goal setting are important components of the study abroad program. Students should be encouraged to reflect on their experiences and set achievable goals that are specific, measurable, and aligned with their long-term aspirations. This could involve keeping a study journal, where they reflect on their strengths and weaknesses, set weekly or monthly goals, and track their progress. By setting and achieving their goals, students can build their confidence and resilience, and develop a sense of purpose and accomplishment.

### 4. Project-Based Learning

In the context of this project, project-based learning (PBL) was a core concept applied.

PBL is a teaching and learning approach that involves students in solving real-world problems through hands-on, experiential learning. PBL is becoming increasingly popular as an educational approach, as it provides students with several advantages that traditional lecture-based approaches do not. Some of the key advantages of project-based learning are:

1. **Relevance and motivation:** PBL makes learning relevant and engaging by connecting course content to real-world issues and problems. Students are more motivated to learn when they can see how the information and skills they are acquiring will be useful in their future careers and lives.
2. **Active and experiential learning:** PBL is an active and experiential learning approach, as students are required to actively engage in problem-solving and decision-making, rather than simply passively receiving information. This type of learning helps students to retain information better and develop a deeper understanding of the material.
3. **Collaboration and teamwork:** PBL typically requires students to work in teams, which helps to build important skills such as collaboration, communication, and teamwork. These skills are not only valuable in the classroom, but also in future careers and personal relationships.
4. **21st-century skills development:** PBL provides students with opportunities to develop 21st-century skills, such as critical thinking, problem-solving, communication, and creativity. These skills are in high demand in today's rapidly changing world and are essential for success in many careers.
5. **Personalized learning:** PBL allows for personalized learning, as students are able to pursue projects that align with their interests and goals. This leads to greater engagement, motivation, and a deeper understanding of the material.
6. **Assessment and feedback:** PBL allows for authentic assessment, as students are able to demonstrate their learning through the products and outcomes of their projects. This type of assessment provides students with meaningful feedback that is directly related to their learning and progress.

In conclusion, project-based learning provides students with a number of advantages over traditional lecture-based approaches. It makes learning relevant, engaging, and experiential, while also helping students to develop important skills and competencies that are necessary for success in the 21st century.

## 5. Measuring motivation

Measuring the motivation of students in a project-based learning (PBL) environment can be challenging, but there are several methods that can be used to assess and evaluate student motivation in this context. Some of the methods that can be used to measure motivation in PBL include:

**Self-Report Surveys:** Self-report surveys can be used to assess student motivation by asking students to rate their level of motivation and engagement with the project. Surveys can be administered at the beginning, middle, and end of the project to track changes in motivation over time.

**Observations and Interviews:** Observations and interviews with students can provide valuable insights into their motivation and engagement with the project. Teachers and/or researchers can observe students during class time and ask students questions about their motivation and engagement.

**Student Product Analysis:** An analysis of the products produced by students in the PBL project can provide insight into their level of motivation and engagement. For example, a well-designed and thorough project report or presentation can indicate high motivation, while a lack of effort or a poorly executed product can suggest low motivation.

**Attendance and participation:** Attendance and participation in class and project meetings can be used as a measure of motivation. Regular attendance and active participation in class and project discussions can indicate high motivation, while frequent absences or a lack of engagement can suggest low motivation.

**Grades and Assessment Scores:** Grades and assessment scores can provide some insight into student motivation, as students who are highly motivated are typically more likely to achieve higher grades and scores. However, it is important to note that grades and assessment scores may be influenced by a number of factors, including prior knowledge and skill level, so it is not always a reliable measure of motivation.

In conclusion, measuring motivation in a PBL environment requires a multi-method approach, as self-report surveys, observations, interviews, student product analysis, attendance and participation, as well as grades.

In the context of this project, it was decided to conduct an educational questionnaire with a selection of students (before and after the participation in the project). Furthermore, a set of four students with learning difficulties was chosen from each country. For these students a self-report survey was conducted, as well as observations by accompanying teachers and the development of grades and attendance in the course of the project.