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Report

Partnership - Key Findings and Recommendations

PORTUGAL
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Erasmus+ Cooperation for innovation and exchange of good practice.
Strategic partnership “Science 4 all”

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"Tell me and I forget. Teach me and I remember. Involve me and I learn."

Benjamin Franklin

Introduction

The first learning, teaching or training activity took place in Sintra, Portugal from 14th to 18th November 2016 and was attended by headmasters and teachers of French, Estonian and Polish schools (three persons from each country) and also Portuguese teachers (team, school cluster headmistress, school coordinator and other teachers). These groups worked together, shared their different experiences and discussed to try to find the best solutions for the problems and needs which appear in the partner schools. The attendance of school headmistresses/ headmasters was, according to us, a way of enhancing the impact of this transnational activity through possibility of improving organisation of the partner schools. Our main objectives were:

1. Knowing partner schools and teams.
2. Exchanging good practices.
3. Encouraging the use of ICT in school context.
4. Familiarizing with Portuguese culture.

After a week of a complete programme (see annex) which included workshops, good practice sharing sessions and cultural activities the participants considered these objectives were fully achieved. We mustn't forget all conversations carried out during breaks, which were enormously fruitful and also contributed to our learning and recommendations.

This document presents studies and analyses from the short-term joint staff training event in Portugal.

1. Good practices sharing

1.1. Teaching methods

1.1.1. How to make cross-curricular teaching a reality in our schools

A Geography teacher working with an adapted curriculum class, presented the project which started this year in Agrupamento de Escolas Monte da Lua. The group of teachers is working together in all subjects and is implementing cross-curricular teaching in their daily practice. The class they are teaching was formed in order to give an answer to certain problems among students, such as lack of motivation, dropout risk, difficulty in following the rules. To carry out this kind of practice, teachers have meetings every two weeks to assess strategies and specific training sessions. During the meetings and together with the students, teachers plan their work, in particular they:

- set goals,
- analyse the contribution of each subject,
- choose materials,
- reflect on resources, problems, tasks and organisation.

Evaluation is very relevant and it is done throughout the project to:

- assess the degree of task accomplishment,
- identify obstacles and problems,
- evaluate students' progress and behaviour.

Although this approach is still in its beginning, all the teachers believe this is an effective method to deal with students facing demotivation, uncommitment and dropout risk.

1.1.2. How to improve underachievement in Maths and Science among pupils from disadvantaged backgrounds?

Estonia

To achieve high results in Maths, Estonia has implemented an innovative methodology, which is described below.

At the end of the 6th grade students do an online test and are divided into three different groups according to their results, from then on they attend different classes where they are taught according to their level (very good/satisfactory/poor) - leveled groups. There are usually 3 groups, depending on the number of the students in the

7th grades. The students in the first group are motivated to study Maths and they are going to continue their studies in the upper-secondary school. The students in the second group experience some difficulties in Maths, but have not lost interest in the subject. Some of them may continue their education in the upper-secondary school. In the final group the students are not motivated, the basic level of skills is low, they're are going to enter a vocational school after the 9th class. The class is split into three different groups only during Maths classes. This methodology has proven to be very successful since the results in 9th grade final Maths exams were all quite good. Even the groups of poor level students had succeeded in final evaluation.

One of the strategies used to motivate students and that is driving them to success is online game-based learning.

Special attention is paid to students who have special needs: teachers draw individual work plans, they differentiate objectives and evaluation and these students benefit from psychological support.

France

To help students get involved in the subject, teachers in France implement several strategies:

- Board therapy (send students in front of the class to explain what they have learnt,
- Mutual help (students with better marks help stds who have more difficulties),
- Use of ICT:
    - Labomep (teachers choose the exercises they want, publish them and students are asked to do them. The teacher will monitor time spent and students' procedures),
    - Geogebra,
    - Scratch,
    - Maths contests and challenges.

1.1.3. Methods of working with gifted pupils and ones with educational problems

Two teachers of the Special Education Department of AGML (Agrupamento de Escolas Monte da Lua, Portugal) made a presentation about the inclusion of students with Special Educational Needs in the School Cluster. They referred the different types

of approaches depending on the degree of the students' disabilities. Some focus was put on the difference between integration and inclusion.

Dr David Guedes an expert from association that deals with giftedness ANEIS (Associação Nacional para o Estudo e Intervenção na Sobredotação, Portugal) pointed out some difficulties faced by schools, parents and students regarding giftedness.

After both presentations the participants and speakers exchanged some points of view and talked about different ways of dealing both with gifted pupils and ones with educational problems in the four countries:

In France, as in Portugal, parents joined to form an association to support gifted students. In Estonia parents may apply for a special programme for these students and they are within the group of students with special education needs. They are given the opportunity to take part in various competitions in the field of education.

However, there are still some schools dedicated to students with special needs, but the aim is to follow the Portuguese example. Differently, in Poland most students with identified special needs attend special schools. They are not among ordinary students and are not integrated in a public school.

The expert in giftedness, Dr David Guedes, pointed out the long way to go not only until gifted students are prematurely identified, but also until proper legislation is created in order to put an end to the void in this area.

1.1.4. Inquiry-based learning (IBL) in practice

Inquiry based learning stands for the learning process in which not only facts are explained but where questions, problems and scenarios are presented to the pupils. This learning approach can include a wide range of activities, such as case studies, field-work, investigations or research projects, among others.[1]

Prior to the workshop where a Science teacher introduced this methodology, the participant teachers observed a Science lesson which was taught outdoors and in which the teacher used this approach. The teachers could realize the importance of this type of approach, since it allows the development of the 21st century skills:

[1] http://www.scientix.eu/web/scientix-cop-02/ibse [20.12.2016]

- critical thinking and problem solving,
- effective communication,
- collaborative work,
- creativity and innovation.

One of the most important aspects of its use is that the focus of the teaching and learning process is on the student. The student is granted the opportunity of being actively involved in the process of learning, whereas the teacher assumes a role of orientation and challenge.

Inquiry-based learning uses a central question to frame a module. Students answer this central question for themselves, doing hypothesis, discovering and learning through a series of guided discussions, experiments, and hands-on activities over several class periods. Teachers find that students are more engaged in what they are learning, and have a wider context for understanding the material rather than just hearing a lecture or memorizing facts.

Inquiry learning is an active and constructivist process thus assessment feedback should be integrated into this. Assessment of IBL skills and competencies requires teachers to be able to use a variety of tools to determine where students are in their learning. From these data, they can make judgements that can help the student to decide on the next step in learning, and so guide them towards improvement.

1.2 Teaching tools

1.2.1. The Use of Moodle in collaborative teaching

Two teachers from Agrupamento de Escolas Monte da Lua presented the Virtual Learning Environment (VLE) – Moodle AGML. They told the participants about the way they are using this collaborative platform in the teaching and learning process with pupils. Their focus was mainly on the work done with and by students, although this tool is also used by the school cluster teachers in their collaborative work with their peers.

Although both teachers teach completely different subjects – English and Science, this type of platform allows, in both subjects, collaborative work. In the school cluster the use of this platform is highly recommended and each department or disciplinary group has a digital folder where teachers share their materials, tests, tests'

matrixes. This V.L.E. also allows students' participation in the construction of some tools, such as glossaries (scientific vocabulary/ English vocabulary) and alphabet.

1.2.2. Use of digital devices in teaching and learning and use of innovative methods

A relevant topic addressed in the workshop dedicated to "innovative methods" was the ambiguity and divided opinion on the meaning of "innovative methods". Nowadays the idea of innovation in education is usually related to the use of ICT and, in fact, when asked about innovative methods used by teachers, most students give examples of classes with the use of digital tools or devices.

However, other examples were given where technology is absent - outdoors lessons, role-playing, singing songs, going to concerts. And strange as it may seem, when asked to reflect on the reason why most teachers do not use innovative methods, both teachers and students gave very similar answers summarised in Table 1.

Table 1.

Teachers' answers	Students' answers
➔ teachers' age ➔ they don't feel comfortable ➔ they don't like to take risks ➔ no. of students and classes ➔ lack of motivation ➔ some teachers prefer traditional methods ➔ time consuming ➔ workload ➔ lack of proper training	➔ they are old ➔ teachers dislike new technologies ➔ they do not like innovative methods ➔ teachers prefer to use traditional methods ➔ teachers believe students are better focused during traditional classes ➔ teachers are afraid it will increase their workload ➔ they are afraid to lose control ➔ it takes time and they usually work as little as possible ➔ it's more difficult to prepare an innovative lesson than a traditional one

In order to deconstruct some prejudice against the idea that using ICT and mobile devices in class is a knotty task, teachers from Estonia and Portugal developed a workshop to present several apps/ digital tools that can be used in the classroom and which are quite simple to use, not time consuming for the teacher and highly motivating for students.

The first presentation was about Padlet and Kahoot and the participants had the chance to see how Padlet works, they edited a Padlet which was shared with them. After that, the teacher launched a Kahoot game which was played by the participants. The second part of the workshop was conducted by the Estonian teacher who showed a PREZI with some different apps/ tools – Plickers and Quizizz. The participants played both games and even though they had never worked with these apps, teachers were quite excited and willing to try them with their own students.

1.3. Project management

The project coordinator, who is also an expert on project management, gave the participants an overview of what a project is. European Council definition states that a project is “a series of activities aimed at bringing about clearly specified objectives within a defined time-period and with a defined budget”. The good project must be or include:

- goal-oriented;
- coordination of interconnected activities;
- time duration: start and end date;
- exceptional and unique;
- some uncertain and risk;
- sustainable change;
- added value.

Since the participants in the short-term event are also members of the project teams, this presentation was very relevant not only because it showed in a very clear way all the stages of a successful project, but it also made people reflect on the preparation phase. Most importantly, because the project “Science 4 all” is still on an early stage, participants were provided with better knowledge about project phases still to come, which will enhance project quality, which are:

- Programming, where determine whether or not it benefits the organization (identifying problems);
- Identification; analysis of relevance of project ideas, which includes an analysis of the stakeholders and of the likely target groups and beneficiaries;

- Formulation or Appraisal, where the action is developed in detail and project ideas are developed into project plans;
- Implementation, where actions are carried out and monitored;
- Evaluation where the achievements are assessed in depth and lessons learned.

Moreover, being in possession of this information, every teacher will be equipped with better understanding and knowledge on how to develop a good project either from EU perspective, or school educational project perspective.

2. Effective school management: problems and challenges

On the first day of the event, a panel discussion with the directors of the four schools took place. This meeting had the presence of the Polish headmaster, Estonian headmistress and deputy headmistress, the Portuguese headmistress and deputy headmistress. The French headmistress was represented by the French coordinator, the director of the education department of Sintra Municipality accepted the school cluster invitation and was also present at the meeting. During the meeting each school director presented their own reality and shared their main concerns and challenges. Below are described main problems and challenges faced by partner schools.

Portugal

A team of four members helps the headmistress in the administrative tasks; a pedagogical board elected by parents and teachers works with it. Each school up to the ninth grade has its own coordinator. The municipality takes care of expenses concerning buildings, visits in the district, public employees. Teachers are nominated for their positions in school by the ministry of Education.

The challenge for the headmistress is to rebuild a new identity within the cluster. The headmistress wants to join forces of every school around and promote teachers' engagement. There is also the will to connect schools around common cultural issues. First result: a common website has been created. There is also a concern with the start of new partnerships and innovation.

Poland

The district is in charge of leading the Primary schools and lower secondary schools (Upper secondary schools depend on the ministry of Education). Teachers are recruited by the district and the headmaster. A big reform led by the government is actually in progress. Instead of having three schools with three levels, the new reform will reduce them to two levels.

The challenge for the headmaster is to help teachers to accept this reform.

Estonia

The headmistress leads the school, recruits the teachers but the school is financed by the municipality. The headmistress assigns the number of contact hours to teachers. Teachers' working load is big. Some of them give up to 28 contact lessons.

The school has a special situation - 100% Russian students due to the location of the town - next to the border with Russia. Another challenge is to encourage teachers to practise the Estonian language by giving them an opportunity to attend language courses.

France

The headmistress was not present, so the description of the school was made by the French coordinator. Teachers are civil servants and nominated in schools by the ministry of Education. A big reform which refounded curriculum in junior high school was voted last year; this reform asks teachers to work with their colleagues in an interdisciplinary team. Most teachers are reticent, they don't understand why programmes have been reduced so much and don't like to collaborate with their colleagues

The challenge: the headmistress must have this reform accepted by the pedagogical team.

Differences and similarities

We came to the conclusion that there are many differences - organizational model, teachers' recruitment system, headmaster's role in financial issues. However, there are also common challenges faced by school management teams: teachers' lack of motivation; resistance to innovation and collaborative work. Teachers are not open

to share their good practices and many are still very reticent to open their classroom's door.

3. Summary and Recommendations

Below there is a list of recommendations that emerged from the group reflection after the short-term event in Sintra. We dare extend these recommendations to policy makers, since some problems pointed out during the week have their origin in educational systems. We divided these recommendations in three different categories: Teachers, Organisations and Policy makers.

To teachers: Take risks; don't be afraid to try new methods; take part in projects; work collaboratively; use ICT, open your classrooms' doors; share your ideas and good practices; listen to your students; involve them in decision making/ planning/ assessment; stop being the centre of the teaching and learning process and act as facilitators rather than presenters; promote critical thinking and value creativity

To organisations:Consider the number of contact lessons per teacher (in France and in Portugal teachers have less contact lessons); promote reflection on evaluation tools (in Estonia there is no need of using paper tests); support collaborative work among teachers, what will result less workload with classes; encourage teaching staff to participate in projects and trainings; think or rethink (Portugal) the implementation of leveled groups (common practice in Estonian school), division of foreign language classes in two groups according to their skills and knowledge (Poland). French and Portuguese schools should invest in CLIL methodology, which is already being used in Estonia and Poland.

To policy makers: Creation of laws related to inclusion of students with Special Educational Needs (SEN) and mainly gifted students is compelling. In this area Portugal and France are a bit further ahead and Estonian schools have development plans for gifted students, but there is still much to be done. Important aspect size of classes and school clusters. It is recommended to have lower number of students per class and lower number of school in clusters in Portugal.

Appendices

- A schedule of the meeting
- Presentations in pdf format