

## Slovenia

**Cross-subject Week Activity**

*Teachers at this school organize cross-subject activity weeks in which learning is multidisciplinary and students (age 11-15) have an active role, doing experimental work in the class and the field, thereby developing communication and learning skills. There is an emphasis on collaborative authentic learning, with home assignments linked to life situations. Examples of topics are forest and continental water, housing problems, or energy. Community experts and parents are involved in the implementation of some projects.*

**Main Focus of Innovation:** CONTENT, RESOURCES, ORGANISATION

**General Information**

**Name of the ILE:** Cross-subject Week Activity

**Location/Address:** Primary school Lucijan Bratkovič Bratuša, Trg 31, 5292 Renče

**ILE submitted by:** Bogomir Furlan

**Rationale**

*Why do you suggest that it should be included in the project? How does it respond to 21<sup>st</sup> century learning challenges?*

The main objective and purpose has been to promote holistic learning and to develop key competences of lifelong learning with the organisation of lessons which is based on:

- pupils' activities in which various active learning methods are intertwined,
- individualisation and differentiation (coming out of pupils),
- as varied and diverse learning environment as possible,
- elimination of limits which are otherwise represented by the »classical« list of subjects (with accurately determined weekly number of hours assigned for individual subject in a certain class) and adequate timetable with 45- minute teaching lessons.

**Learning Aims / Intended Learning Outcomes of the ILE**

*What are the core learning aims and which knowledge, skills or attitudes are to be acquired? (These may include outcomes related to learners' social, interpersonal, or meta-cognitive development)*

Activities of pupils are planned so that pupils develop a wide range of knowledge and skills. We speak above all about practical, lifelong knowledge and skills which are adequately conceived and motivating for pupils. The emphasis lies on the development of various mental processes, on the use of knowledge, on getting used to argumentations and critical evaluations (of acquired information; new findings; products). Different learning forms are intertwined (individual work, work in pairs, team work), where team work with the emphasis on cooperation learning has been given advantage. Pupils by doing that learn about their social skills and routines; they get accustomed to team work, to share their roles, and to take responsibilities. Social skills develop also through dealing with the contents linked with social problems. Ecological problems and health, i.e., in the activities conceived in that way, require from pupils to picture themselves in various roles (e.g., role play, round table).

A particular emphasis is put on the individualisation and differentiation of lessons, which is according to big disparity and various interest as well as capabilities of pupils a precondition that this kind of learning becomes qualitative and successful. Teachers adjust lessons to pupils with differentiated learning objectives, contents and forms of work. Certain activities were conceived for different difficulty levels.

**Cross-Subject Week Activity**

This ILE provides a holistic education in the natural sciences through cross-subject activity with different disciplines coming together. Students participate in a variety of active methods: experimental work, research, problem-solving, role play, debate etc. While the ILE looks very promising, the template doesn't make clear how many activity weeks are involved. If it is only once a year, it would only be a small supplement to the overall education and hence outside the criteria of relevance for the ILE project. Could you let us know more about this issue of the centrality or marginality of the activity in question to the learners involved?

**Learners**

*Which group(s) of learners is it aiming at? Who is eligible to take part? How many learners are there? What are their ages?*

The natural science activity week and the social science activity week was in the school year 2007/08 implemented for all pupils from grade 6 to 9, (age from 11 – 15). All teachers of upper subject level were involved in the project. During the natural science week the main coordinator was the teacher (female) of natural sciences and chemistry, whereas in the week of social sciences the coordinator was the teacher of history and geography. For each class the leader was the class teacher. Otherwise other teachers are appointed as leaders of particular activities.

In the current school year (2008/09) we are preparing a natural science activity week which is supposed to take place during the last week of April. All pupils from grades of 2nd and 3rd triad (from grade 4 to 9) shall be involved. Besides teachers of the 3rd triad (subject teachers) also class teachers of the 2nd triad shall participate in the week.

### **Facilitators**

*Who are the teachers/facilitators? Who are the leaders? What are their professional backgrounds? What are their roles?*

Instruction takes place for pupils as if there was no classical timetable and weekly schedule of subjects. However, this kind of instruction requires a lot of engagement from teachers and a lot of harmonisation in order to have as many activities and objectives from the curriculum as possible to be realised and put in place. According to the share of the realised goals of individual subjects we also note the realisation of hours of a particular subject in an appropriate documentation (diary).

The Primary School Renče has been performing twice a year the week of activities for three years so far. Teachers have in that period acquired their first experiences with such approaches to planning and carrying out such instruction and have each year slightly modified and upgraded it in a complex way both in terms of organisational and the content. With the help of the acquired experiences the teachers managed to conceive in the school year 2008/2009 a thematic cross-subject week, which has been harmonised in terms of teaching and objectives both horizontally (from 6 to 9 grade), and vertically. With possible changes and improvements the programme of the week shall take place also in the future school years. By implementing the week each year pupils from 6 – 9 grade shall have an opportunity to systematically upgrade their knowledge about energy, as well as to upgrade the research skills and other practical functions. In the forthcoming school years it is envisaged to increase the number of cross-subject weeks and upgrade them also with other cross-curricular topics.

In April 2009 a week of natural sciences took place for children of the second and third triad with the topic of ENERGY. Activities were cross – subject connected and intertwined, so that both the objectives of the natural science subjects were realised as well as the goals of the rest of the curricula: languages (mother tongue and foreign language), history, fine arts and physical education. Based on the objectives of the curricula each grade was assigned with its own umbrella theme, which was linked to energy.

Pupils were performing activities for the entire week based on the research – developmental approach, problem set exercises, carrying out surveys and their analysis, planning and working out products...

Pupils of the sixth grade were during that week concentrating on the electric energy. They analysed the consumption of the electric energy at home and at school. From this purpose they made a questionnaire and carried out the survey in the local community and at the school, they analysed the answers and presented the results in Slovenian and English language. They prepared plans and worked out their own product driven by electricity.

Pupils of seventh grade worked on the Sun as the main source of energy. With the research – experimental work they were studying the importance of Sunlight for the growth and development of plants (the course of photosynthesis); they were seeking for the ways how to better exploit the solar energy; they were looking for the data on sun collectors and then made plans for the construction of their own solar collector and tested its functioning.

In the eighth grade the main theme was Fuel, more precisely its combustion and the problem of fossil fuels combustion. Pupils were examining and comparing the combustion of different fossil fuels, the production of greenhouse gasses and took conclusions on the consequences of those processes in the nature. Through experiments they simulated the action and the impact of greenhouse effects. In various sources they looked for the information on global warming and climate changes and performed by taking over play roles a round table on this issue.

During the week of activities pupils of the ninth grade concentrated on the topic of FOOD as a source of energy. By carrying out experiments they made researches on the nutrition composition of food and were studying what is happening to the food after its consumption – what are the products after the effect of digestion enzymes.

They were studying the respiratory organs and digestion organs, they constructed the model of lungs and simulated the process of lung breathing; they tried to prove the products of cell breathing and compared cell breathing with combustion.

They presented the links and the understanding of chemical and biological knowledge, which is essential for understanding food as a source of energy, by poster demonstrations.

They prepared a round table on the issue of healthy food (the importance of healthy food and physical activity, disturbances in nutrition ...) and included also the social aspect of this issue into the debate.

### **Organization of the ILE**

*How is learning organised? How do learners and facilitators interact? What kind of pedagogy do they follow? What curriculum is used?*

Learning is organised in the cross-subject and multidisciplinary way with the emphasis on the active methods of learning: experimental work in classes and the field (field work), research and solving problems, work with sources, role play, debate techniques, etc. ... Lessons are held dynamically and with flexibility. There are neither ordinary classes, nor usual schedule.

Interaction among pupils and among teachers is spontaneous and relaxed. Teachers have primarily the role of giving directions and encouragement.

In the activity week pupils often change their working environment; partly lessons are held in classrooms, and partly in specialised classrooms; then in the entire school surroundings (around the school), in the field, in the nature, (forest, meadow, river); in the facilities (as for example greenhouse; excursion to a company or factory, laboratory etc.).

During the implementation also some other experts are involved: retired people, parents – experts for certain areas (e.g., gardener (female), florist (female), fishermen and hunters).

Home assignments which pupils get during that week are not in the function of consolidating and verifying their knowledge but are linked with life situations, conceived in terms of a precondition for the preparations for the activities which pupils carried out in the framework of their lessons (e.g., searching for sources). They require from pupils a certain level of creativity and research.

### **Learning Context**

*In which context does learning take place? What does the physical learning environment look like? Are community resources used to facilitate learning and how?*

After the accomplishment of the activity week teachers got feedback information by way of a questionnaire which assessed the pupils' satisfaction, experiences and their feelings during the activity week.

Pupils expressed their desire to have this kind of lessons as much of as possible.

The most quoted reasons:

- this type of lessons is more attractive and interesting, more dynamic (something is happening),
- because we work and create ourselves,
- because we deal with themes which are interesting,
- because lessons are held not only in classrooms,
- because teachers are kinder than usually;
- teachers have different attitude towards us.

Teachers also assessed lessons organised this way more effective. In their reflections they expressed satisfaction since pupils were far more motivated for work; there were far more disciplinary problems as usually in »classical« lessons. Teachers usually feel well, since during the lessons, which are not determined by timetable and the goals of the subject they teach, since their personal note gets importance and a different quality of communication and relationships.

However that kind of work demands from teachers a lot of pre-planning and adjustments and a lot of current flexibility and capacity of prompt adjustments of contents and objectives according to the current results. Teachers find themselves in a different role as usually, when they have »all the strings in their hands«.

Functioning as pupils' directors, partners and organisers teachers have to be creative and innovative. Individual teachers who feel safe only when the course of lessons is precisely determined and planned in advance including the expected correct results, could have some problems in the organisation and implementation of lessons which are based on solving open problems (where solution paths cannot be foreseen in advance not even correct results).

Teachers from year to year personally grow and train themselves during the preparations and implementation of activity weeks, both in the area of team work and communication and in shifting their concentration from results to the process.

Parents were also informed about the course and the results of the activity week. Parents' feedback information was encouraging and positive.

The natural science activity week was presented in April 2008 in Olimje at the expert symposium on the topic of Flexible Subject List – a path to greater autonomy, professional responsibility and quality of formation and education work.

### **The course of the project**

In the past school year (2007/08) the activities weeks were organised at the same time for all pupils from the 6th to 9th grade (aged 11 to 15). Pupils of 6th grade were active in the field of gardening and greenhouse, pupils of 7th grade were doing the topic of forest and continental waters, pupils of 8th grade learned about and researched the construction materials and pupils of the 9th grade were dealing with housing problems. Here the cross–subject and multidisciplinary concept is important or emphasised, which demands team work of all teachers. The dominant role, when selecting and planning the implementation of activities, was given to the teachers of those subjects which are leading subjects in the week of activities according to the selected themes; e.g., in the natural science week the teachers of natural sciences: biology, chemistry, physics, techniques and technology. Since, besides the goals of the curricula of the enumerated subjects, the emphasis is also on the development of key competences for lifelong learning (communication in mother tongue, communication in a foreign language, mathematical competences, digital literacy, teaching of learning...) the activities are planned in the way that they contribute the most to the development of the enumerated competences, where teachers of other subjects are included (teachers of languages, mathematics, painting, information technology). Examples: The data pupils collect by measuring within the experimental work are arranged, elaborated and properly demonstrated with the support and help of the teacher of mathematics. When working with sources (searching, analysis, evaluation of information), text processing, making compositions (e.g., writing an experimental report, seminar work), preparations for debates or role play, the teacher of mother tongue participates and he gives pupils directions into the development of adequate strategies and skills of written and oral communication.

Other teachers also take over certain tasks and activities (at least as accompanying persons), although the activities of pupils are not directly linked with subjects they teach. If not, it would be impossible to implement the week of activities for all the pupils from grades 6 to 9 at the same time as there would be a shortage of teachers. For certain pupils' activities we included also the housekeeper and some other outside partners.

Pupils are therefore led and directed through the activities by teachers of various subjects joining in and replacing themselves without letting pupils be burdened by which subject was currently on the schedule.

In the current school year (2008/09) we are in the middle of the planning phase for a natural science week for children from grades 4 to 9 which are going to take place in all classes simultaneously in the umbrella theme - Energy. When planning the pupils' activities teachers are also, besides cross-subject connections within each grade which is a precondition for the holistic linking of knowledge, careful about vertical upgrading of conceptual structure and skills, which are built from grade to grade.

### **History of ILE**

*Who initiated it? For what reasons was it started and with what purpose? Have these changed since?*

When joining the project of »Flexible Subject List« the Primary School (PS) Lucijan Bratkovič Bratuša Renče was faced with a challenge how to organise lessons of natural science subjects in order to make children possible to create for themselves a holistic picture of certain concepts and contents which are otherwise treated separately within different natural science subjects (e.g. energy); some pupils have consequently problems in linking those subjects and composing them as a whole. Besides, they wanted to provide for pupils a research – experimental work which is difficult to be accomplished in a qualitative way in 45 minute school hour.

For the first year the teachers of natural sciences had planned and also carried out two days of school lessons which did not take place in the standard timetable and were based on the activities of pupils (particularly in the experimental part). According to the extremely good reaction of pupils and teachers they extended those two days in the following school year into two weeks and extended also to the subjects of social sciences. The first week of pupils' activities emphasised social science contents; it was carried out in the autumn and the second week took place in the spring time and was more coloured with natural science subjects. This practice has been continuing also in the current school year and on the basis of experiences from the previous years the model has been upgraded and improved.

### **Funding of the ILE**

*How is it funded?*

So far no premises and funds of local community have been used for the implantation of the activity weeks as there has been no particular need for that. Activity weeks take place within the regular lessons and are not financed from additional resources.

### **Learning Outcomes**

*What are the learning outcomes achieved by the ILE, including academic, social, interpersonal and meta-cognitive outcomes? How is learning assessed?*

The implementation of cross-subject activity weeks has been documented by video recordings and photographs. The natural science activity week was carried out in march 2008 has been noted by PPT presentation and an article in the collection of papers from the symposium on Flexible Subject List – a path to greater autonomy, professional responsibility and quality of formation and education work.