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Virtual Classrooms in Collaborative Projects and the Effectiveness of the Learning Process

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Abstract

Our research has highlighted the fact that a major advantage offered by the use of collaborative projects by organizing virtual classrooms, is represented by opening a stock of interactive media resources available globally. Students can explore areas of interest in an organized collective manner. The information found can be used for planning, problem solving activities, homework and essay writing. This way of organizing is essential for creating more student-centred learning environments of exploration and research, where the teacher takes other roles than sole provider of information.

Keywords: virtual classrooms, collaborative projects, learning task

1. Introductory issues

The last ten years of Romanian higher education were marked by the appearance of virtual classes as a result of the didactic strategy used into the educational process. These together with collaborative projects enhanced the efficiency of learning mainly in pre-university education [4].

After clarifying some theoretical concepts regarding a certain type of learning that the authors used in their didactic activities at pre-university level, we will demonstrate the advantages and disadvantages in developing transmittable competencies.

Learning circles support the training of students and teachers in collaborative learning activities. "Learning circles" promote projects based activities on a given topic incorporating them into curriculum. Working in

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"Learning circles", students are encouraged to develop interpersonal skills in group work and in perceiving group results as their own results. Also, this type of activity encourages interaction between teachers from the same school or from different schools promoting various dynamic professional development models.

"Learning circles" type projects combine distance learning with traditional learning being perceived as a complex of human networks requiring adequate technical, human, financial and procedural management.[3]

Teamwork, teaching others and carrying out activities with people from diverse backgrounds are useful skills for students' future social work, skills that are developed using the Internet in such projects.[6]

These types of learning were used for a semester with the third year students from different departments (from the Petroleum-Gas University in Ploiești and the Technical University from Cluj) and the students who took part in such collaborations proved an increased psycho-social adaptability in the first year after graduation as compared to the others (62% of them were hired in the first year after graduation and 38% of them proved flexibility in manifesting their professional competencies working in fields related to their specializations).

2. The concept of “Learning Circles”

“Learning Circles” consist of 6-9 teachers that, together with students in their school carry out activities in cyberspace on a topic of interest to the group.

The concept of "learning circle" involves both school and local community. One can refer to it as a virtual classroom because once formed the group is working together for a period of 4-5 months based on a curriculum established in relation to the selected topic. At the end of the activity, the group publishes their work product. Such materials can be educational materials for other teachers and students who did not participate in the project. Each session at the start of a new "learning circle" will form a new virtual classroom.

The major advantage of the activity in this type of project is that both students and teachers acquire new experiences.[1]

It can be said that activities allow members of the local community as well (scientists, artists, etc.) to participate in projects. Support received from the business environment allows teachers to acquire high managerial skills.[2]

For primary education it is considered "circle time" the time of day in which students exchange messages with each other. One purpose of the circle is to develop skills of oral communication in front of the group members.

For secondary and high school students the focus is on written communication and on the development of user skills for communication technology resources.

“Learning Circles" bring together classes of students from urban and rural areas, located in different geographical areas. Thus, passionate students of different fields can work together eliminating the subjective criteria for setting up groups such as gender, age, social environment etc.

Working in "learning circles” brings together the teacher and students to form a team where everyone has to perform different roles.

The experiences acquired through the learning circles proved to be beneficial to the professor-student relationships. Thus, the communication between them is more efficient because it is based on trust, the students appreciated, and the teachers thought the didactic evaluation is less stressful for both sides, checking particularly the less performing competencies.

3. The stages of "Learning circles"

To ensure the effective management of "learning circles" projects the following steps have to be taken: A. Preparation stage, B. Opening the "Learning Circle", C. "Learning Circle" Project Planning, D Activity progress, E. Organizing and preparing the publications, F. Closing the "Learning circle".
3.1. Preparation stage

a) Preparing teachers

The first step in the "Learning Circle" is to identify the class or group of students within the school, establishing a topic and finding partners.

Before proceeding to finding partners the temporary deployment of the activity has to be established and made known to all interested. It will take into account holiday periods when access to computers may be difficult.

For communication between teachers and students there is a computer that manages, in terms of communication management, the activity that provides teachers and students with announcement space for the intent to participate in the "Learning Circle".

b) Preparing students

Teachers should provide students the concept of "learning circle" for them to be able to assume their roles responsibly. Parents will be informed of the activities to take place and there will be an attempt to attract them in these activities. Engaging local community members in projects undertaken in "learning circles" enrich the learning environment for each member.

c) The topic and project of the “Learning Circle”

Students together with a teacher set the project topic by negotiation. Its choice will aim to meet curriculum requirements and to make sure there is access to community resources or the communications network resources. It will consider the implementation of thematic tours and inviting personalities from the chosen topic’s field.

d) Setting up electronic mail

During the project, all participants will receive various messages from project colleagues. These must be distinguished from ordinary messages that each receives. Typically, activity in these projects leads to accomplishing a conference-type structure in which all messages are retained and made accessible for every member of the project.[2]

3.2. Opening the "Learning circle"

The first message the teacher transmits is to introduce him/herself. Because interested persons have limited time, it is recommended that messages be short and present information such as: description of the interest in information technology and communications, experience in other projects, position in school, personal information on teaching career. The last part of the message is advisable to invite partners to meet and answer relevant questions.

It is also useful for the teacher to specify how often and in which days they check their e-mail for efficient communication. For students to get to know their partners they will transmit information about them, they will ask questions and expect answers from other teammates.

Messages sent by teachers and students will be held in two conferences, one for the teachers and one for the students who will be managed by conference managers.[4]
3.3. "Learning circles" project planning

a) Project participation

Participating in “Learning Circles” can be done in two ways:
- As project promoter;
- As participant in a project launched by someone else.

If a school wishes to launch a new project it should assume the following responsibilities:
- Selecting the topic and communicating to partners the reasons why the topic was chosen and how the topic is integrated into the educational activity;
- Describing the type of information to be collected during the project;
- Examining the information received by members of the initiating group;
- Collecting and organizing the information. The initiators are responsible for the publication and its submission to partner schools.

To integrate "learning circles" into the curriculum it will start from teachers current planning. The project activities will engage students in the activity of the lesson itself. In this situation, some activities will be informative and will place the student in social situations.

If participating in a project for another school the task is to organize the activity locally and to communicate their results to their organizers.

b) Choosing the project’s topic

Choosing the project topic, in case of the project initiators, is made following discussions between students and teacher. Involving students in choosing the topic is a first step for their participation throughout the subsequent activity. The project’s integration in the curriculum through its topic is an advantage in that it helps the teacher to use his teaching materials.

The project will be held in both the physical and the virtual classroom within the newly created learning network. Various activities can be organized for the project: trips, visits to museums, watching movies, inviting personalities. The class initiating the project is responsible for conducting investigations for the project. Initiators are responsible for how the project evolves; they assess it, collect all the materials and publish results in a way that enable others to learn from the project.

Students and teachers involved as partners in projects initiated by others will pay attention only to parts of the entire project for which they will transmit information to initiators.

To obtain information, classrooms can be divided in smaller groups. Within the group students may have different tasks (e.g. measurements, data editing, data verification etc.). Thus, activity in the classes is also a collaborative activity.

c) Project launch

A new project will be launched by teachers as well as students as initiators. To make the project known the following information is submitted: project name, project idea, age of participants, the project start date, the project end date, proposed activities, expected results, the benefits the project will bring to others, the language of the project, name and e-mail address of the initiating group, the name and e-mail address of the coordinator, the conference in which it will take part, the project Web page address (if any).

d) Monitoring the activity

Throughout the project period messages will be sent on the topic proposed by the teacher and the students.

For the project’s proper progress it is recommended to send weekly messages to groups of students partners in the project, with results of work done. A long period of silence in a project can lead to a state of frustration for
each participant. Also, ongoing communication will provide an overview of all progress made in the project and can justify everybody’s the work.

3.4. Activity progress

For a better organization of work, given the fairly large number of participants, messages will be exchanges between classes, not between students individually.

During the course of a project the teacher will aim at developing the students’ writing and teamwork skills. Elaborating a written material will go through three stages: planning the content, editing it and turning it into a final document.

During the course of project students’ accountability and involvement in activities was proved by their awareness that colleagues depend on the work they carry and they, in turn, depend on the work of others.[1]

We thus found that, under certain conditions, learning can be more productive in a framework of cooperation between peers than by self-study or teacher-student interactions. A condition for the effectiveness of the activity is that group work be well structured and goal oriented. This observation is very important in the cooperative learning in communication networks. A second condition is the explicit organization of group work regarding: a) clear group goals, b) personal responsibility, c) task-specialized group members, d) adapting to individual needs, and e) equal opportunities for participants to achieve results, and f) competition within the group. The third condition is to choose a well-defined group task. Indeed, the value of cooperative learning is given by the challenge of intense, on-going interactions between participants. This means that the task should be:

This means the task should be:
- Polyvalent, in order to allow each partner a contribution to the common task;
- Complex enough to allow the group to prove a higher knowledge as compared to individual participants;
- Oriented towards social goals to stimulate activities and social attitudes;
- Not ambiguous, so that it causes coordinated interaction.

3.5. Sending and receiving messages

The first decision to be made is who sends and receives messages. For some participants in the project access to a computer with Internet connection or to e-mail is done in class, others need to go to a place where there is a modem and telephone line, like a media centre, library or a school office.

Receiving and sending information will be made either via the conference structure or via e-mail. It is recommended that before a message is sent it should be checked in terms of accuracy by the supervising teacher from the school.

Received messages can be addressed to the teacher, class or group of students working in the project. The message may be from a teacher, a class or group of students. For this reason the project coordinator in the school must decide which messages will be read by everyone, which will be read only by a group of students or only by him/her.

a) Distributing messages: printing, reading and reporting

Some of the teachers involved in these projects consider it appropriate to be the first to read the posts and then decide which ones to distribute to the classroom or group of students. Also, the teacher will decide which messages deserve to be stored in a directory or on a disc.

Another possibility for message distribution of to print messages in two copies: one will be added to the project log and the second will be distributed to a class group responsible for communicating between project schools. Each week, the group mentioned above will report to the entire class about the materials received.

b) Storing messages
To keep a log of the project, the teacher can keep all messages in chronological order. The drawback is the allocation of additional disk space.

c) Finding messages

The conference-type structure is a very good strategy to organize messages and find them. The different types of messages (from the teachers, the classroom, project related etc.) should be grouped by topic. For example, messages for teachers may appear like: Subject: Teacher; those addressed to the classroom: Subject: Student, project related messages: Subject: Project.

3.6. Organizing and preparing the publications

Making the project-specific publication is a very important step. This publication plays a critical role in motivating students to organize and evaluate information received from other partners.

Progress towards making the publication develops the ability to collect, evaluate and arrange information in the form desired.

The teacher works with other teachers to assemble the documents.

The development of information and communication technology has allowed the transition from print publications to electronic publications. This has reduced printing and distribution costs. But, in order to inform parents and the public it is recommended to make available print publications as well.

In order to make a publication there should be a publication coordinator, usually a teacher who will design the whole picture of the publication, its contents and will consider including all relevant materials.

The teacher together with the students has to establish strategies for collecting, recording and review of the information required.

The purpose of these strategies is to help students learn how to evaluate the materials received from partners. The teacher's role is to teach students the importance of a constructivist assessment.

A publication of the "Learning Circle" should include: a cover (or webpage), an opening letter, contents, participating schools (links to each school's Home Page), the presentation of the project and its outcomes.

Once all information necessary to the content shown above is ready, the publication can be assembled and disseminated.

3.7. Closing the “Learning Circle”

The end date for the "Learning Circle" is set since the start of the project. It is recommended that before the end of the project, students and teachers write their experiences and impressions about the project, resulting in positive as well as critical aspects.

These stages were followed in the didactic enterprise by four professors in UPG Ploiești and three in The Technical university of Cluj.

4. Results

It is proven that as a consequence of working with the learning circles that an important advantage offered by the use of collaborative projects in virtual groups is the use of media resources that are extremely easy to use by most of the people involved. The students have access to interest fields in collective approaches. The data they obtain can be used in the projection activity, the solving problems activity, the preparation of lessons and writing papers. Thus, creating several learning environments, centred on students, through the use of this didactic organization, the teacher takes over other parts than the on of the sole information provider.
5. Discussions

The increase of the learning process efficiency is a problem assiduously followed by teachers. Our research clearly proves that the work tasks through collaboration and the formation of certain virtual classes/groups increase the efficiency of the learning process through the development of competencies requested by different fields. Not only the student performances are increased but also their competencies are developed and diversified.

The concept of ‘learning circle’ can be used at different levels of learning, involves both the school and the local community. The ‘virtual classroom’ concept is discussed because once the group is formed, they work together for 4-5 months based on a curriculum established according to the selected assignment. You can apply this approach to preschool students, pupils, students or adults according to their psychological characteristics, age, subjects but especially social needs.

At the end of the activity, the virtual class publishes the product of their work. The materials elaborated in such a way can be didactic material for other teachers and students that did not participate in the project.

Every starting session of a new ‘learning circle’ is conducted with the making of a new virtual classroom. Thus, the continuity of the learning process and their attitudes and relationships encourage other initiative and responsibility behaviours. The relations at the class management level are authentic, the coomunication is active, student centred, horizontal attitudes and relationships are encouraged. The personal relationships are developed, an authentic personal development encouraging the development of the other members of the group, too. The others’ performances are generated by personal success, common experiences and feelings.

6. Conclusions

From observing the activities conducted in this type of project, we noticed the educational impact of the Internet both in the personal development of students and teachers and in that of their social adaptation and integration.

We can say that the teaching methods involved in this type of project determine an increase in student motivation, the improvement of communication, the development of teamwork skills, and regarding the teacher we can sense a real change of roles - from transmitter of information to supervisor, from the assessment conducted as a sanction to a constructive evaluation, from organizer to supervisor, etc.

Relationships at the level of classroom management are genuine ones; communication is active and student-centred; horizontal attitudes and relationships are encouraged.[4]

All these features, advantages and limitations, once known, can be used at different levels of education, by teachers from different disciplines, encouraging and stimulating the easy social and professional integration as well as the personal development.[5]

References