

Cooperative Learning in virtual environments using ICT to support inclusion in the classroom

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First and second choice network (4 & 16)

Some networks will ask for identifying sub-themes: not possible

3 - 5 keywords: Cooperative Learning, ICT, inclusion

General description on research questions, objectives and theoretical framework (up to 500 words)

The research that we are presenting forms part of our project “Case studies of the coordinated development and consulting process of a Programme of Inclusive Educational support integrating strategies of personalization in teaching, self-regulation in learning and cooperation between equals PAC Project”¹. This research project has been developed by the Research Group on Care Diversity at the University of Vic (Grup de Reserca en Atenció a la Diversitat). In addition, the project is part of a body of research on improving educational practices for inclusion, that clearly demonstrates which the identity of the CIES network (Collaboration in Educational and Social inclusion) which belongs GRAD.

The main research question was to observe how the strategies from introduction, generalization and consolidation of our Educative Support Programme at each centre studied have contributed to increase the degree of inclusion.

The project has 5 main Objectives. The central aim of this presentation is to explain the framework, methodology and the first outcomes of the 3rd objective of the Project. In this objective, the Project aims to show how to: “Adapt the cooperative learning structures and instruments for the design of multiple programs and for the development of self-regulation in learning, to the conditions of the virtual environments adopted by the educational administrations using information technology and communications (ITC)”.

For this objective of the Project we formulated three hypothesis’.

- The first said “*The Program “Cooperating to Learn_ Learning to Cooperate (CL-LC)”* in the PAC has sufficiently flexible characteristics to incorporate their proposals for instruments into the virtual environment, gradually increasing equal participation and simultaneous interaction amongst equals.
- The second was that the cooperative structures that they learn in present classrooms using information technology and communications (ITC) can be transferred to virtual environments?
- And the third said that the systematic and continued use of cooperative structures in virtual environments to help consolidate the learning contributes to increasing inclusion in the classroom and raises the participation of all students and especially students with specific educational support needs?

These research questions arise of the cooperative learning theoretical framework and processes to improve educational practice proposed by Pujolàs (2008) and Pujolàs & Lago (2011). This proposal is based on the cooperative learning tenets of Johnson & Johnson, 1997; Johnson, Johnson & Holubec, 1999, and Kagan, 1999. There are multiple approaches that have been made to the study of cooperative learning mediated by ICT, among other highlights, Scardamalia & Bereiter, 2003; Onrubia, Colomina & Engel, 2008 and Martin & Onrubia, 2011, are take how reference in our proposal.

¹ Proyecto I+D+I- Ministerio de Ciencia e Innovación . Gobierno de España. EDU2010-19140

Methods/methodology (up to 200 words)

To verify the hypothesis we are using a qualitative research methodology, based on case study methodology (Miles and Huberman, 1994, and Stake, 1995).

The research process at each centre is developed following the nine steps:

- I. Negotiation with 5 teachers of 4 centres that usually use ICT in their teaching process..
- II. Development of a pattern of non-participant observation in a classroom and a semi-structured interview guided.
- III. Data collection by observation of a session of each teacher and a semi-structured interview each teacher.
- IV. Analysis of the segments of interactivity observed the participation and interaction of students with specific educational support needs.
- V. Design of the tasks of teaching sessions from segments collected using cooperative structures and adapting the cooperative structures of the Cooperating to Learn_ Learning to Cooperate Programme (CL_LC).
- VI. Presentation and negotiation with teachers from each school in the development of cooperative structures designed sessions.
- VII. Data collection by observation of a session with cooperative structures with each teacher and a semi-structured interview.
- VIII. Analysis and comparison of the participation and interaction of students with specific educational support needs.
- IX. Discussion group of researchers and teachers.

Outcomes/results

In this presentation we have the results of six first steps:

1. Our propots was observed classroom wiht three characteristics about inclusión, use ICT for improving pràctive, expectatives of improving inclusion devoloping cooperative learning with suport of ICT. We can observed 4 casos in everyone of the 4 four centres that wich propose participeitd. The areas, centrals activities and tasks that we observed were :
Four activiitats of mathematics:
a.1 Resolució individual de problemes a l'ordinador personal. El professor ajuda puntualment als alumnes que ho requereixen.
a.2 Correcció d'exercicis d'àlgebra per part dels alumnes amb supervisió del professor a la pissarra digital.
a.3 Correcció d'exercicis d'àlgebra per part dels alumnes amb supervisió del professor a la pissarra digital.
a.4 El professor projecta uns exercicis sobre funcions a la pissarra digital en la plataforma moodle, i els alumnes els resolen per parelles o en grups de 3 espontanis al seu ordinador personal, el professor passa per les taules i ofereix ajudes.

Four activities of sciencies
b.1 Pràctica de laboratori a resoldre en grup sobre el funcionament dels pulmons. El guió de la pràctica està penjat al Moodle i els alumnes el consulten a l'ordinador. La professora s'apropa als alumnes que li demanen. L'alumne amb n.e.e. té una participació en l'activitat menor que la resta.

b.2 Resolució d'un qüestionari sobre el tema de la hidrosfera al moodle com a preparació de la prova final. La resolució és individual. Hi ha alumnes que acaben molt ràpid i es posen a jugar a l'ordinador.

b.3

b.4

Four activities of llanguage

c.1 Activitat de redacció d'un currículum personal a partir de la plantilla que projecta la professora a la pissarra digital. Els alumnes l'hauran de lliurar al Moodle.

c.2 Correcció sobre conjugació verbal per part dels alumnes en veu alta, i la professora valora la resposta. Explicació per part de la professora dels diferents tipus de verbs. Els alumnes no engeguen els seus ordinadors personals, segueixen de la pissarra digital i la convencional.

c.3 es planteja un foro de debat sobre un fragment d'un text que tracta sobre la drogadicció. Cada alumne comenta en una frase de màxim 3 línies el seu posicionament. Ho escriuen al seu ordinador portàtil i la seva aportació apareix projectat a la pissarra digital. L'objectiu és que puguin treballar l'ortografia i el respecte per les opinions dels companys.

c.4 Correcció conjunta de cinc exercicis projectats a la pissarra. La professora pregunta i un alumne respon, i es demana l'opinió als altres. Lectura en veu alta, cada alumne llegeix un fragment. Activitat en la qual cada alumne assumeix un personatge del text i s'ha de presentar.

C.5 La professora explica les conjugacions verbals a la pissarra normal i els alumnes prenen apunts en els ordinadors personals (hi ha alumnes que juguen i no prenen apunts). Resolució d'exercicis sobre temps i conjugacions verbals de manera individual a l'ordinador. Correcció dels exercicis conjunta a la pissarra convencional

Two actvitats of socials sciences

d.1 La professora explica el tema del Neolític a partir del llibre digital que hi ha a la plataforma Eleven. Els alumnes segueixen l'explicació i tenen obert l'ordinador amb el llibre de text igual que la professora. Resolució d'exercicis amb paper i llapis sobre el tema explicat

d.2

2. To respond at the first hypotesi of the thrid objectiu of our reserch, we need to identifide some informatios in the activities or in the taks observed who show us where can to improve the equal particiipations and simultaneous interaction between students for to improve the inclusion. We observed in each ot the classrooms observed on e or two os theses situacions:
 - a. Resolució individual / resolució cooperativa
 - b. Ajuda per part del professor /ajudes per part dels companys
 - c. Lectura individual / lectura compartida
 - d. Projectió per a tot el grup classe que facilita l'accés a la informació de tot l'alumnat
 - e.
3. To verife the second part of the firts hypotesi we have devoloped some strcutures of cooperative learning adapting the proposals of Programa CAC. Here present three representative activitaitat which shown how it led can

Previous Conclusions

The data analysis allowed us to observe different results, some directly linked to the research questions and other secondary questions, which grouped into 5 sections.

- a) For the activities; in more than half of the sessions data has been collected that we can adapt to existing cooperative learning structures using ICT.
- b) No significant differences or difficulties were seen in the adaptation of structures incorporating ICT in different areas of the curriculum observed.

- c) The majority of teachers indicate the need for an extended period of use of cooperative structures in face environment before incorporating them in virtual work environments with support of ICT development.
- d) Observation notes of the sessions and discussion groups indicate large and noticeable diversity in the learning rates for the incorporation of the conditions for teamwork to be marked in cooperative activities with ICT.
- e) Although it was not possible to get evidence of an increase in stimulating interaction and equal participation among students with educational support for specific needs, it should be noted that diversifying forms of help for them, can also contribute to progress in the learning of content areas to aid digital literacy of students with more specific educational support needs

Intent of publication

Yes

References (300 words)

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