TEACHING STRATEGIES AND SPACE ORGANISATION IN MULTIGRADE CLASSROOMS

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ABSTRACT
This paper presents the outcomes of one of the phases of an international research project which studied several dimensions of teaching in rural schools—Project EDU2009-13460, Sub-programme EDUC (Spanish Ministry of Science and Innovation); participant countries: Spain, France, Portugal, Chile and Uruguay. The outcomes of two dimensions researched in the Spanish territory, namely teaching strategies and space organisation, are presented. For that, attention was focused in education centres and classrooms where, according to the results of a previous research, there seemed to be present active and participatory methods. Qualitative research method was used in this phase of the research; teachers from multigrade classrooms were interviewed so as to obtain the information presented in this paper. The outcomes achieved offer information related to the understanding and application of the methodology on the part of the interviewed teachers. Several pedagogic options within the framework of differences in age and grade, as well as the possibilities they took into account about space organisation in the classroom and in the education centres, are presented.

KEY WORDS
Multigrade; Rural school; Teaching strategies; Space organisation.
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INTRODUCTION

When approaching the issue of education in multigrade rural schools two questions should be answered: «What do we understand by rural schools or by schools located in rural areas?» And: «What do we understand by multigrade classrooms and/or schools?» The answer to the first one, although it is a necessary and basic one in order to provide a framework to the teaching work, is not the subject of this work; but the second one is. In that sense, the most important idea is that multigrading conditions entail certain teaching proposals that should take into account the peculiarities of the students’ learning processes. For that, teachers have to overcome those teaching proposals built in terms of grading teaching only, and lay out others in line with teaching various grades simultaneously.

It is necessary to take into account that most Spanish multigrade schools are normally located in rural areas; this does not mean that multigrading is a pedagogic teaching model chosen, but an organisational proposal for the student body which occurs in a standardised manner. In that sense, contributions such as those made by Little (2001) about multigrading include that multigrade classrooms may be present in the life of education centres, regardless of being based—or not—in rural areas. In that sense, her contributions

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offer it as a pedagogic option that could be chosen—or not—in other grade settings, or in areas not specifically rural.

Through this last idea, in this work we explore the potential relationship that may exist between the methodologies used in multigrade settings and grade settings. Thus, the content presented in this paper is obtained from the results of applying and developing a research whose aim was to investigate thoroughly how teaching in multigrade classrooms works, and to explore also what occurs in these settings; in case that, pedagogically speaking, it was positive for the students’ interests, we aimed to explore if it could be extrapolated to other settings, not specifically multigrade or rural.

This part of the research we are presenting is based on nine interviews conducted with head teachers from multigrade classrooms in Spain. It is based on the analysis and interpretations of two dimensions addressed in order to know how teaching processes are developed and how teaching methods are applied in these student groups, specifically focusing attention on teaching strategies and space organisation. This phase of the work was preceded by two quantitative studies with the aim of defining the sample to teachers who could carry out active teaching methodologies in their classrooms.

EDUCATION POSSIBILITIES IN MULTIGRADE CLASSROOMS

Over the past few years we have witnessed a revalorization of the multigrade grouping model (Arteaga, 2011), in the sense of having underlined that, under certain circumstances, significant learning must be achieved, since the great ally of multigrade classrooms (diversity of interests, needs, abilities, potentialities, issues) becomes a source for curricular development and for designing teaching situations which enable real significant and functional learning (Martínez & Carballo, 2013).

Diversity is, on the one hand, one of the core elements of education in the 21st century, and it’s aimed at the student understanding himself/herself in order to understand others and the world he/she lives in; and diversity is, on the other hand, the basis of an inclusive school where all students belong to a group and all learn from each other (Stainback & Stainback, 2007); and, in multigrade classrooms, it is materialised within the framework of social organisation forms similar to those that occur outside the school (Abós, Boix, & Bustos, 2014).
However, as it has already been mentioned, certain conditions are needed; among them, we highlight the following: the use of active teaching-learning strategies in which, through a global and integral approach of the curriculum, the learner becomes the main player, as well as an alternate mix of shared spaces and graded spaces that allow learning by mutual impregnation («contagious learning»), cooperative learning, reciprocal teaching (Hamon & Weeks, 2002), together with the development of autonomy.

Multigrade teaching is a response to that particular organisation of these types of classrooms. Enjoying a great reputation in the Americas, multigrade teaching lays the foundations of the more appropriate teaching models to manage differences of age around a globalised action framework. In the education centres and classrooms where it is carried out, a great deal of the proposals include shared work themes with teaching sequences adapted to the generality of the group, but also to the difficulty levels that the differences in age and course of reference demand. Contributions by authors such as Santos (2006 and 2007) or Little (2001 and 2006), Pridmore (2007), and Mulryan-Kyne (2005 and 2007) along the last decade help to build knowledge about the essence, needs and potentialities of multigrading. In that sense, the use of class diversity for educational purposes, from the multigrade teaching perspective, enables a higher fostering of inter-age collaboration and collaborative work, as well as the educational amortization of environmental wealth from the surroundings, or the enhancement of the main features typical of rural towns (Boix, 2011).

Teaching strategies, methodologies or proposals used in order to adjust the teaching context to the requirements of the current policy frameworks lead to the use of spaces with a clear educational intention. In addition to the spaces found in the school buildings, rural areas also have the towns and landscapes. The richness which on many occasions is found in the variety and in the resources (architectural, historical, cultural, sportive...) represents the opportunity to link such places to the school life, while these are not strictly located within the education centre facilities. (Bustos, 2013). If, in addition to that, active methodologies are set up to explore and exploit these spaces, the richness of skills acquired through learning may be higher than that obtained through traditional methodologies based on reproductive models.
OBJECTIVES AND RESEARCH METHODOLOGY

Within the general framework of this project a series of objectives related to the study of teaching practices that make use of active-participative methodologies were specified; for that, teaching strategies, space organisation, time organisation, teaching resources and the students’ learning assessment were analysed. In order to contribute to the achievement of these objectives, an ethnographic methodology characterised not only by the use of certain tools and research techniques (observation and interviews), but also by the development of «certain kind of intellectual endeavour, a kind of speculation...» (Geertz, 1987, p. 35) was used. In this way, «ethnographic experience happens to be more significant if accompanied by reflexive work that enables transforming and specifying the idea from which reality is observed and described» (Rockwell, 1987, p. 25). In this case, reality consist of the teaching practices, these being understood as practices spread out in the classroom context and characterised by the teacher-student knowledge relationship (Achilli, 2001).

The fundamental objective of this phase of the research project was to analyse more deeply those teaching practices in which, according to the answered previously provided by the teachers, the presence of active and participative teaching methodologies—aimed to achieve significant learning aided by environmental resources—was observed. Five categories were taken into account in this analysis: teaching strategies, space organisation, time organisation, teaching resources, and learning assessment. In that sense, the questions formulated in the interviews were directly linked to the answers given by teachers in their respective questionnaires. Regarding teaching strategies, questions as the ones presented below were formulated:

- Could you explain how you work on research on the environment? And how do you work in problem-solving?
- We have noticed that you work on research on the environment as well as on centres of interest. Could you explain how you proceed?
- Could you explain how you work on the project’s approach? What about centres of interest? And strategies based on simulation and role-playing?
- We observed that you develop innovative teaching strategies in the classroom—project approach, centres of interest, research on the environment... Could you explain how you put them into practice?
Regarding space organisation:

- Do differences in age and curricular competence play a role in the use of space? In what way?
- What criteria do you use to organise space into learning corners and/or thematic areas?
- What criteria do you use to organise space in terms of points of interest?
- We see you use different types of environments in the classroom. We would like to know how you manage learning corners, workshops, and the thematic areas.

The analysis of the content from the interviews was to be used also to select the classrooms where the third phase of participant observation would be carried out. Table 1 shows data from the classrooms of the teachers who were interviewed. Regarding information processing, the analysis of the content from the interviews was made using NVivo software. Information entries were taken from the five initial categories, as well as the one related to subcategories and indicators.

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This paper includes contributions obtained from the study of nine interviews carried out in Andalusia and Aragon.
OUTCOMES

TEACHING STRATEGIES

The teachers’ accounts indicate, in general, a significant variety of teaching strategies, both active and participative, which seem ideal for working in multigrade classrooms. For instance, the possibilities that the project approach offers are acknowledged:

Whenever possible we try to work in a project from a bit bigger perspective. Now we are working on the theme of cohabitation; all pupils are working on it, from the little to the elder ones. All work on the same topic, but at different levels. This cannot be done every day but at least we try to do one project each term... some little thing... so we can all work in the same stuff.

However, the teachers found some difficulties applying the project approach in the multigrade classroom. To some extent, it is recognised that this method offers some advantages for the students’ learning, even though putting it into practice requires a great deal of dedication on the part of the teachers. Additionally, while teachers recognise the feasible pedagogical advantages of this model, they consider they have a difficult time when putting it into practice, sometimes due to multigrading itself.

Of course it motivates them more. It meets their motivations. So, I think that the project approach is quite good because you can work on it and approaching it from any point, from any theme. Then you can put the focus in Maths, Language, Science... It requires a lot of work.

The appropriateness of putting this model into practice is acknowledged, and textbooks are considered a rather additional or secondary material. Some excerpts regarding projects developed in the classroom points in that direction.

I think this has been useful... To say: «More projects should be done», because I think that nowadays is about that; ultimately, Education will be working through the project approach, textbooks will be left as supporting material. And I think it is very satisfactory.
On the other hand, we found that the teachers who were interviewed gave different interpretations about some of the basic concepts used in the research project. For instance, regarding the notion of centres of interest, while sometimes it is started from the globalised approach in the application of teaching strategies, it was materialised as follows:

Well, for example, imagine we are working on... For example, the other day it was sunny, then it rained, then suddenly it was very hot, next you needed to put your jacket on... We were studying English. Well, we brought up the weather theme, even it was programmed for May: «The weather». I brought up this topic. So then we started talking about it: «Look, what is the weather today?» «Well, now it’s sunny», and suddenly it was raining. Let’s say the centre of interest in this case was the weather. We used the Internet and the digital whiteboard and we watch the weather man, the weather report.

In that sense we can speak of a «theoretical» presence of centres of interest, in what is evidence observed.

Also, sometimes what happens is that, if you see that the children show interest in a specific topic, you work on it even if it is not planned.

...we work using centres of interest, perhaps. I am going to work about skating, or I am going to work about...

Something similar happens with the project approach, due to its implications for the pedagogical practice when it is referred more to the education centre than to the classroom. But there exist significant malfunctions, such as the mix-up of project approach and centres of interest:

...Project approach or rather centres of interest, because you guide yourself by the project that the publisher has chosen, that is what I called centre of interest, I mean: «What’s in the project we are working today?»

And then I have written projects because this book I talked to you about before... this does not appear anywhere—the alphabet book. I also want to work on... or, for instance, the book of the protagonist is not listed in any book. I also want to do, for example, a project, when the mums come to the classroom. They came to make carnival costumes; they made them and the
children decorated them. What I mean is that it is something different, something that is not, as it were, planned by a publisher.

In other occasions, work projects—it was not a proper project approach—were related to the purpose of promoting local culture and traditions. Some of them are developed in connection with other territorial areas, in what one of the teachers considers an interesting fact for the students to connect and learn about what happens inside and outside the town.

And this year we have been working in a collaborative project with other schools (...) the project consisted in making the towns known—each one their respective towns. (...) So everything in the project was class work, such as drawings, lists about the town or other activities. Another task we did was taking photos of our town, our town food, traditional games...

Now we are... Every year there is a day for cohabitation, it consist in spend a day together—it rotates each year—in one of the towns. This year will be in (...), and so we have started a project called «Know...» and it is developed in the whole CRA.

As regards to specific aspects that «take» the student—virtually—out of the town, we find some references to school work:

... we made a project (...) It is quite good, because it has been developed through all the subjects and all the grades. All related to Europe: authors, poets, painters... everything. Every single thing. Maps... all related... Researching everything about Europe. (...) ...we made flags, presentations (each child made one for a particular country).

The approaches related to teaching strategies which were implemented taking into account the setting characteristics are in line with some of the approaches that the teachers described in the interviews. In line with the line of global learning for studying the territory, we can frame what is related to research on the environment in the middle of certain excerpts of the interviews. In the example shown it can be observed how the load of work is distributed among the students in order to obtain information about the town, with the help of their families, of issues included in the curriculum.
We created a little sheet in which we explained to the parents we wanted the children to collect data, each one about a particular theme; we specified some points we were interested in, and we indicated we needed a draft. So then pupils asked about their themes at home and brought back their work. We said they could ask their neighbours too, or search in the Internet. Well, the thing was to collect data. Then they brought it back to school, we completed the work and then each child did his/her section.

In other excerpts we find some approaches that could fit in the research on the environment making use of global approaches of studying the territory.

And well, as for research on the environment... since we are only a few people and we live in a rural town, we always have the chance of... the theme of plants, we go outside and look for plants; the theme of the river, we made a project about the river...

For instance, in third grade we are going to make a promotional brochure, «how would you advertise your own town?» well, searching for monuments, for...

And they are also researching on the environment, besides this centre of interest they are going to research on the environment because if they are going to make... to take measures, then they are going to... one of them will create a game... based on role-playing, perhaps the type of games we used to play when we were little.

They show a special sensibility towards their surrounding environment, since they see these towns as an opportunity to use different resources and experiences. In that sense, experiential situations are core.

So, sometimes we work on the project approach, sometimes through problem-solving, sometimes... with the aim of creating situations, and that is what was clear from the beginning. I mean the experiential situations... Let’s make use of them. We do many experiential activities...

Regarding some concepts or indicators that were to be analysed in the research project, it is also observed that problem-solving is interpreted more
as a method circumscribed to Maths area than as an active method of cross-curricular work.

Problem-solving is good also because, «Teacher, what should I do now?» And I say to myself, «See, and think about what is he/she asking for. He/she is speaking about difference». «Ok, what calculation do you have to do?»

In Maths perhaps I follow more closely the textbook, because the thing is, as I say... Unless there is something I see that I can explain... Then if I am explaining a problem-solving strategy I can do that because it can be applied to all.

On the other hand, when the interviewed teachers refer to the global learning method, it is frequent that none of them identifies this expression with «globalised textbook». The difference lies in the fact that, in the case global learning, the teacher sets up a proposal or a planned didactical approach following elements from the curriculum, while in the case of the globalised textbook—which is more frequent in Infant Education and First Grade of Primary Education—activities from the different learning areas are alternated, regardless of there being a globalised editorial programme or not.

- «When you speak about global learning, I suppose you are referring to the one led by the publishing house, right?»
- «The publishing house».

The teacher interviewed below recognises the need of using a global approach in the teaching proposal of multigrade classrooms. In some way, he/she interprets that the activities included in textbooks do not address a global subject which could be addressed from more highly global approaches. He/she comments on the appropriateness of performing schoolwork with thematically interrelated activities. Regardless of this, in his/her answers the implementation of an alternative to reality is not observed:

...in the textbook I’m missing... Let’s say it goes off at a tangent... We are working on the human body. Well, make that Maths be connected to. If you are calculating, it should be with things related to the topic, and from time to time they go... they go in other direction. I guess it shouldn’t be that dif-
ficult, when they are making the book, to «hyper-connect» everything, since they are basic themes. So I don’t like it because it takes work to relate it to the work we are doing».

As regards to the concept used in the research about psycho-pedagogical approach, we find interesting information with respect to the student’s autonomy, information processing, individualisation of learning paces, and teaching strategies that foster learning by mutual impregnation («contagious learning»).

The difficulties teachers have to attend students of different grades simultaneously is on the basis of them proposing grade activities when there exists the possibility of having support teachers in the classroom. That is, interviews reveal that it is relatively frequent that the support teachers and the teacher who is present in the classroom—who usually is the tutor—propose that the students do their activities and are attended according to their grades, to their courses. The students are split up so that the teachers attend the students as per grade.

...as I am with them all together lesser time, it is easier for me, to say the truth. It is because the support, the fact of splitting them up for a while, it’s a great help, isn’t it? But, when they are all together... Can you imagine if I would be with them all the time?

The act of playing as an inherent element to active methodologies appears, although when referring to it the teachers focus in some specific curricular areas, such as Physical Education.

Well, playing is very important in those ages. I think it is really important, and while they play, even though we cannot appreciate it, I think they really learn. I think it’s really good for them. They relate to each other, they play roles that exist in adult life, besides interacting with kids of the same age... I don’t know, I think it’s really important.

...because I... my Physical Education work, it is based on games. I mean we work on the body schema, space-time organisation, the body itself... everything based on games.

However, the curricular design per areas is the main element when it comes to using a specific method, so content is the main reference and, additionally,
this connection of the use of certain strategies is made, on the one hand, in relation to specific areas and, on the other hand, due to the «need» of competence work—as if it were a legal requirement.

...and then, well, as for the problem-solving method I like mostly doing stuff on the computer, search activities when we are working with this thing of competences and assignments and so on.

Well, there are hay centres of interest, of course they are—we do competence work».

**SPACE ORGANISATION**

Regarding the use of space in the classroom, the organisation is quite variable. In relation to grouping students, we find how several space areas are managed according to school tasks, learning pace, and the different parts of the school day. On many occasions, classroom organisation is regulated according to the existing grades within the student body: spaces assigned per grades or grades assigned per spaces, rather than a mix of grades within different spaces. In other occasions, the type of activities and the meteorological conditions or limitations are behind students’ placement in the classroom or in the education centre.

Also, we are lucky to have a large space. We can carry on activities with pupils from Infant Education here; we have an assembly zone where we meet and talk. We have a hand meeting over the heat radiator. In winter we all go there, next to the radiator, and speak about our weekend or about the previous evening... first time in the morning... because we have a large space.

With regard to the criteria normally used to manage school space in the classroom, we find that space areas are related to learning areas.

...many times it depends also on the subject we are working on. For example, if we are learning English, when I teach English, for example, since I have pupils from 3rd and 4th courses together, that is, the same grade, I teach the same, you know? I make no differentiation.
On certain occasions they try to use other criteria, such as students’ abilities, behaviour, or the type of activities that are being done.

I group the children... I don’t do it following the criterion I would like to, but I follow criteria of age and grades they belong to.

Well, it depends... most of anything it depends on the level of understanding in relation to the students who have more issues, maybe I try to...

It depends a little bit on what we are working on. I have some desks at the back, for example, and when we are using our tablets, doing search activities, we split up in different groups...

The number of students in the classroom is one of the handicaps for space organisation, as is of the type of grouping used—in general terms, however, age and course are the basic criteria. The multigrade classroom thus turns into several minigrade classrooms. However, teachers also point that, while not doing it systematically, they place the older students with the little ones or with those who need more help.

The level of competence is not used as a criterion very often; it is more frequently used with younger students, and usually leads to a relaxation of the grouping criteria.

Well, usually, the three-year-olds, I place them together because their level is more or less the same.

The ones I tend to vary more are the four-year-olds, because I have only one girl who is five. So, as not leaving her on her own, she sits down with the four-year-olds.

On the other hand, there are some occasions and proposals based on the reality outside the education centre. Among some of the variables that can influence this criterion of space management for grouping students, we find issues such as neighbourhood, friendship...

...after school they go home, they hardly see each other. Some of them, for example... These two kids I have in 4th course, they do see each other because they are neighbours, one lives opposite the other, and it’s the only people they... The only friends they have are school mates, you know? They see each
other all the time and all that... And I always try that they are grouped. In the classroom they are almost always together.

Regarding the type of groupings, the thoughts of one of the teachers about U-shaped grouping illustrate how this is a non-permanent structure, and she tries to place in contact students of different ages because of the mutual benefit she considers it entails. In some ways, inter-grade contact appears again as one of the benefits that the teacher regulates in the classroom.

Then I keep making changes with the children, I mix them, for example, 5th and 6th courses. Sometimes the three 6th pupils, I place them together. Other times I mix them so that they can help each other. Sometimes they have to do their tasks together (5th and 6th), so I place them on one area and the others in other area. But usually, for most activities, I try they help each other, I tried they mix up. And always organised in U-shape, so I am there too... Sometimes you can even sit down with them, but if not, just placed as one desk more.

When the teachers speak of the types of spaces they used it must be pointed out that there are learning corners, mainly in Infant Education, but we cannot say that these types of spaces are integrated in the classroom work. Rather than a corners methodology, what exist are specific zones, either for carrying out certain activities or because they are related to specific subject areas.

And we created those zones since the beginning, and the kids know that when we are working on Plastic Arts, they know they have their things there... I have quite defined Plastic Art corner and the Reading zone. The Plastic Arts, because I have some desks there and I like that we can work together and see each other’s faces. Yes, there is the zone for new technologies, it is clearly defined, and then, according to each subject area there are also other delimited spaces.

Sometimes the teachers refer to learning corners as places where one goes when a task is finished.

And then, as they were finishing their tasks, I would send them to the corners. So, these corners have always been permanent. The one for the kitchen, the one for playing with animals, another for our costumes, to read stories...
On some occasions spatial conditions either foster or hinder the use of this type of spaces.

What I mean is that within a space as reduced as this, there are some small spaces, you see? However, to actually differentiate the reading corner, the numbers’ corner, games’ corner... No. You can see how much space we have.

On some occasions corners and workshops are considered resources rather than elements to organise space that entails the use of some methodological criteria in particular.

We try to work on workshops, thus multigrade groups are created.

As for the use of corners, in the interviews it appears mainly the one used for Computer Science or ICTs. The use of computers in some areas and for specific school work in some grades is present in the excerpts we quote below:

…the ICTs corner, it is where we work with computers. Now they have also their laptops. So I say: «Come on, everybody go to the ICTs corner».

And then the ICTs corner. I usually try they are grouped together. There is also another space we have with the computers, if they are working in another activity in another corner, so that all rotate.

The use of community spaces or town spaces, mostly when there are limitations in the facilities, is habitual in rural education centres—they take advantage of their surroundings. Especially when it comes to subject areas such as Physical Education, where specific facilities are needed, they can be carried out in other facilities or spaces present in rural towns.

As for Physical Education, we have as small schoolyard inside the school. The students even go outside, because the street where the school is located is an alley and there’s no exit. I mean... There’s no traffic. So that street, that is actually the public road, but we use it also for Physical Education, when a specialist teacher comes over, of just for playing, whatever...
CONCLUSIONS

The conclusions presented hereafter are based on the contributions, analyses and interpretations of the responses given by the teachers in the aforementioned interviews. Therefore, it must be taken into account that it is not possible to generalise these outcomes since this research project has been carried out using qualitative methodology; but by addressing teaching strategies and school space areas, they obviously help to understand how teachers of multigrade classrooms perceive, experience and interpret schoolwork.

On the one hand, teachers seem to acknowledge the importance of an active methodology as well as the use of different teaching strategies taking into account differences in age. This way of working is recognised as having special value to contribute with richness to the diversity offered by the class, and alludes to questions such as project approach, centres of interests or research on the environment, in the belief of the potentialities they entail. There are some interview excerpts in which different interpretations are presented, for example, interpretations about the aforementioned concepts: for instance, the fact of recognising that what usually is searched for as an alternative to the textbook is set within the framework of active methodologies. There are present also some interpretations which are different from the traditional idea and from the one internationally acknowledged: concepts such as project approach, alluding textbooks as projects or projects from the centre on an institutional level.

On the other hand, in the teachers’ interventions it can be noted how the space area where the education centre is located is acknowledged as a resource itself to work with students, especially when addressing methodologies based in doing inquiries and carrying out research—which is plausible when the surrounding environment provides education potentialities by means of its richness.

In the classroom teachers refer to organisation per learning corners, per multigrade groups, and several types of classroom organisation—sometimes per grade. The different proceeding for grouping students (individual, pairs, levels…) reveals a way of arranging the class in which teaching aspects are prioritised, and thus content is on many occasions the backbone of the teaching activity. The activities performed simultaneously in the multigrade classroom reveal variety and a purpose in the students’ grouping. The use of spaces circumscribed to grades when it comes to differentiating curricular
aspects linked to age or grade of references seems to be frequent. Since these education centres are located in rural areas, groupings depend mostly on the students registered at school. The criteria generally used are age and the course they belong to. Once this is defined, each of the classrooms will use different forms of organisation, while it is common to place students with higher abilities or from higher courses with students who could have some difficulty, in a way that they may help each other.

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