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TOWARDS APPLYING A MANAGEMENT SOFTWARE SOLUTION ON MULTI-LEVEL CLASSES: A CASE STUDY OF TWO ORAL ACTIVITY LESSONS IN FRENCH SUBJECT

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Abstract

This work was motivated by the idea of approaching teaching practice in multilevel classes based on a problem, namely the need to improve the management of time in these types of classes. The time management strategy, developed in this work, consists of applying two modes of alternating teaching, the classical mode "work and make work" and the "actual - virtual" presence of the teacher mode using the software Netsupport School. The study focuses on the impact of the application of this software solution in two heterogeneous lessons of the French language, specifically of oral activity, for a subgroup of a double-level class (2nd Primary Year + 3rd Primary Year). The obtained results are conclusive since this approach has made it possible to lower the dead time from 13 min to 9 min, to reduce the teacher's great effort from 30 min to 26 min and to considerably increase the total duration of the task of the learners from 26 min to 46 min.

Keywords: multi-level classes, heterogeneous lessons, alternating teaching, oral activity

1. Introduction

A multilevel class (MLC) is a class in which students from two or more levels are grouped together in the same room with the same teacher. There are equivalent terms to designate the same reality: combined, twinned, heterogeneous, multiprogram or multi-level classes. In a MLC, students belong to a well-identified academic level and teaching is focused on expectations and content that are different based on the level. Whether in developing countries or in more favored countries, the reason for resorting to the MLC revolves around economic factors: the lack of human, material and financial resources, as well as the concern to maintain certain teacher-student ratios despite varying enrollments. These types of classes remain very current as evidenced by the following statistics. For Europe, 13 of the 36 countries reach proportions varying between 23% (Switzerland) and 53% (Netherlands) of MLC (Mulryan-Kyne, 2005). In Australia, the proportion of MLC is significant in both urban and rural areas and is even as high as 40% in the north of the country (Little, 2006). In the United States, however, the proportions are said to be lower since they are less than 3% (Mason and Stimson, 1996), which still represents nearly 2,000,000 students.

In Morocco, MLCs have always existed in the education system, whether archaic or modern. According to the latest statistics from the Ministry of National Education MEN, the number of MLCs is 28,515 classes out of 119,290 primary classes, that is to say, that the rate

of MLCs existing in educational establishments is around 24% (MEN, 2017). These classes became a phenomenon that intensely increased at the beginning of the independence era for various reasons; and over time, this phenomenon began to decrease until it was eliminated in urban areas. However, the possibility of surpassing oneself in rural areas is very difficult for reasonable reasons, which are mainly related to immigration and the dispersion of the population in rural areas, etc.

Despite the sustainability of MLCs globally, policymakers care just a little. These types of classes are considered anomalies, resulting from temporary conditions. The programs are therefore designed for regular classes and the MLC teacher is left to his/her own abilities and tools. Moreover, in some places where seniority takes precedence over the pupil's concern, the task of teaching in MLC is often given to a novice or less experienced teachers in school (Costa and Timmons, 2002).

Indifference over this issue also prevails in teacher training, both pre-service and in-service. Nationally and globally, few initial training programs prepare teachers to work in such classes (Gayfer, 1991; Thomas and Shaw, 1992; Veenman, 1995; Costa and Timmons, 2002; Little, 2004). With regard to continuous professional training, initiatives are rarely supported.

This work aims to intervene at the level of teaching practice in the MLCs. It tries to study the impact of the application of a strategy based on the use of the “Netsupport School” software (www.netsupportschool.com) in a subgroup of a double-level class namely 2nd year primary school (2nd YP) and 3rd year primary school (3rd YP).

2. Literature review

The majority of research to date has been in recent decades, focusing on the effectiveness of MLCs. Some studies deal with the perceptions and attitudes of teachers in these classes and school administrators (Gayfer, 1991; Mason and Burns, 1995; Mason and Doepner, 1998). Also, few studies have focused on the perceptions and attitudes of MLC students (Farmer and Bélanger, 2007). Moreover, it is only in recent years that we have been interested in the daily experience of these classes (Mulryan-Kyne, 2005; Little, 2006; Russell, Rowe and Hill, 1998). In fact, since the 1960s, more than fifty action-type research have focused on the effectiveness of this type of class in terms of school learning. These studies, the majority of which involves comparisons of the performance of these students with that of students in regular classes, have been the subject of synthesis or meta-analyses (Pratt, 1986; Miller, 1990, 1991; Veenman, 1995, 1996; Mason and Burns, 1997).). The most critical is Veenman's meta-analysis, which measured the magnitude of the size effect of 38 MLC studies and 11 multi-age studies from 12 countries. Results show that in terms of academic performance, MLC students perform as well as class students regularly. With regard to effective measures (attitude towards school, sociability and self-concept), the results are almost similar. According to Veenman, MLC students would succeed even better than those in regular classes if they practiced better strategies; however, this is not the case since the dominant mode of operation is alternative education. Alternative education involves teaching at one level group while the other group is doing work at headquarters, and vice versa: "Using ineffective grouping arrangements and relying on single-grade instruction make the multigrade class no different from the single- grade class, and thus minimize the potential positive effects of multigrade grouping ”(Veenman (1995, p. 371). For their part, Mason and Burns (1996, 1997) maintain that teaching in these classes is of lower quality than the teaching given in regular class because of the magnitude of the teaching task which often exhausts and demoralizes the teacher, affecting his/her performance and, therefore, the learning of the students. According to these authors, if the multi-level classes have a

performance equivalent to that of the simple classes, it is thanks to the competence of the teachers who have been previously well selected and also to the autonomy of the pupils. This result was well confirmed in the study by Mulryan-Kyne (2005), which focused mainly on teaching practice in the MLC. It concludes, after a study in the Republic of Ireland, that teachers use a range of approaches to teach in their class. She insisted on the need to prepare teachers well during their initial training. According to her, the teacher is the most important variable in the quality of the learning that will take place in class. They must be supported and recognized within their school and the community surrounding it. In a similar context, Hargreaves, Montero, Chau, Sibli, and Than (2001) argue that training is necessary to ensure the assessment of students. A MLC is a privileged environment where students can take control of their own learning. The student must be responsible because the teacher cannot always be with him/her or with a group of the grade level. Desbiens (2006) described the situation of the MLCs. For him, positive results were brought about concerning the success of students in these classes; however, there were significant differences between the various school boards studied.

3. Problem Statement and Research Question

Most of the research done on the subject of multi-level classes has been going on for several years, and unfortunately, there is little research compared to that done on single-level classes. In addition, in the literature, the study of teaching multi-level classes is very rare.

In Morocco, research on this subject, and more particularly that which relates to teaching practice in these types of classes, is non-existent. In addition, despite a high prevalence, the training of future teachers does not include specific training on how to teach in the MLC. It is therefore assumed that teachers build their knowledge from their personal experiences and those of their colleagues. Generally, the dominant mode of operation is alternative education accompanied by individual work. It is the same mode dominant in several countries (Gayfer, 1991; Mason and Burns, 1995, 1996, 1997; Mason and Stimson, 1996; Veenman, 1995, 1996).

In alternative education, it must be taken into account that the pupil at one level receives direct instruction only a fraction of the time and the other fraction being devoted to another subgroup. As a result, due to the magnitude of the teaching task which often exhausts the teacher, the latter is often faced with the problem of wasting learning time. In addition, there is little documentation available to inform teachers about the successes and failures of any teaching practices in these classes. For these various reasons, it is interesting to look into the subject to find relevant intervention strategies as to the teaching practice to be adopted in the MLCs in order to meet the needs of the various actors. Also, during the support of teacher trainees in professional situations, so many difficulties in terms of implementation were raised, especially when it comes to heterogeneous lessons which sometimes require the presence of the teacher at all moments and with all levels.

The aim of this work is, then, to answer the following question: ***Can an educational software solution for managing these types of classes be a fruitful practice and can it help make things easier for the teacher to cope with the obstacle of losing learning time?***

4. Objectives

In order to answer the research question and to deal with the problem posed, this paper intervened at the level of teaching practice in the MLCs by proposing educational software solution for managing these types of classes. It used the “NetSupport School” platform (www.netsupportschool.com) which offers the teacher the possibility of transferring lesson

sequences (video capsules), coaching, monitoring and interacting visually and audibly with students in a predefined group or across groups.

The main objective of this action research is to study the impact of this approach on the teaching-learning process in these classes.

5. Methodology

The adopted approach, which aimed to intervene at the level of teaching practice in the context of MLC, is part of the process of quantitative research in education in the type described as deductive research. This type of action research comprises systematic studies that combine action and reflection with the aim of improving certain practices or encouraging certain innovations. It combines real-life intervention and systematic evaluation of the results of this intervention. The process involves three steps. In the first stage, the teachers who will present the chosen experiment lessons were trained and the research team watched the recording of the video clips of these lessons. Two heterogeneous lessons of the same subject, the French language, precisely the oral activity, of 2nd YP and 3rd YP, were chosen. The lessons were planned in accordance with the competency-based approach. The second phase was devoted to the implementation of lessons learned. The two group-levels, from the double-level class of the experimentation school of the Taghrarate school unit of the rural commune Iznaguen - provincial directorate of the MEN of Ouarzazate, were divided into two homogeneous subgroup-levels of six students each; one Control subgroup-level (C1 + C2) undergoing traditional lessons and the other Experimental subgroup-level (E1 + E2) undergoing the same lessons using the management software solution. Of course, the same pedagogical scenario developed in this work was implemented with the two experimental sub-groups E1 and E2 and the same content was presented to the two control sub-groups C1 and C2, respectively. Two console computers were connected to a third one, administrator. The homogeneity of the two subgroups is ensured by taking into account the scores from the first control and the scores from the previous year, with the support of the Raven test results. Finally, to highlight the impact of this approach on learning, the filmed sessions of the two subgroup-levels were analyzed and compared in terms of the actual duration of each phase of the lessons, the dead time, and the overall intervention time of the teacher. The analysis of these filmed sessions was carefully done by developing the didactic plot and producing successive synopsis to see, at a «single glance» several levels of analysis.

6. Results and discussion

6.1. Pedagogical scenario

The two oral activity lessons chosen from 2nd YP and 3rd YP are: "My big family" and "Let's go to school", respectively. In the planning and implementation of these two lessons, approximately 30 minutes each, the different didactic phases (Table 1) were respected.

Table 1. *Phases followed by the first session of each of the two lessons in the class (2nd YP+ 3rd YP)*

Lessons	Phase 1	Phase 2	Phase 3
Lesson from 2nd YP	Before listening	While listening (Listen to the dialogue)	While listening (testing of hypotheses)
Lesson from 3rd YP	Study of the poster and issuance of hypotheses	Presentation of the dialogue	Comprehension check

Before presenting the results, it will be relevant to initially present our educational scenario (Table 2) for the two experimental subgroups levels E1 and E2 in order to better understand our sophisticated management technique.

As shown in Table 2, the dominant mode of operation, in this case alternative education accompanied by group work we have been carried out. Nevertheless, in our approach, the alternation also concerns the real or virtual presence of the teacher.

Table 2. *The educational scenario developed for the two subgroups levels E1 and E2 (Task numbers indicate the actual presence of the teacher in numerical order).*

Phases	Teacher's activities		Students' activities	
	E1 Level subgroup (2nd YP)	E2 level subgroup (3rd YP)	E1 Level subgroup (2nd YP)	E2 level subgroup (3rd YP)
Phase 1	**1-** The teacher makes illustration -He indicates the page of the booklet. - He answers possible questions.	The teacher launches video capsule 1 and makes sure to block access to the computer at the end of the capsule (via the "Netsupport School" software)	**1-** Students answer questions from the first phase (before listening)	Students watch the capsule and answer the questions in capsule 1
Phase 2	The teacher presents students with capsule 2 which contains the dialogue.	**2-**The teacher discusses the answers with the students and presents the dialogue.	Students watch and listen to capsule 2.	**2-** Students discuss the responses and listen to the dialogue.
Phase 3	**3-** The teacher repeats and explains the dialogue several times.	- The teacher launches capsule 3 which contains the dialogue and makes sure to block access to the computer at the end of the capsule (via the "Netsupport School" software) - He asks questions to check the understanding of the dialogue.	**3-** Students repeat the dialogue.	Students watch video clip and answer comprehension check questions

6.2. Implementation

Before starting the session, the teacher must ensure that the video clips are present in his administrator workstation and that he/she visualizes in the software «Netsupport School» the two screens of the two consoles initially blocked. At the beginning of the session, with a click, the teacher launches the video capsule 1 containing phase 1 presented by himself and the task requested at the end of this capsule in the upper level E2 subgroup. While the students in this E2-level subgroup view the capsule in the virtual presence of the teacher, the students in the other level-subgroup, in the real presence of the teacher, are asked to answer the questions of phase 1 (before listening). With a single click, the teacher blocks the screen at the end of the capsule, thus allowing subgroup E2 to carry out the requested task. During the dialogue presentation phase (phase 2), the teacher will actually be present; this time with subgroup E2 and virtually with subgroup E1. In this alternative way of the real and the virtual presence of the teacher, the whole session takes place.

Figures 1 and 2 represent the actual durations of each phase of the two lessons for the two level groups (control and experimental) 2nd YP and 3rd YP, respectively, as well as the total effective durations.

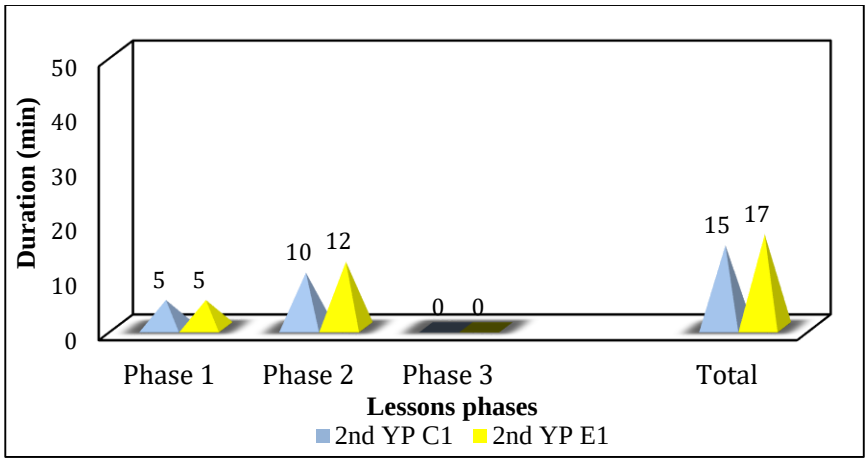

Figure 1. Effective durations of each phase of the two lessons and total effective durations for the group-level 2nd PY (control and experimental).

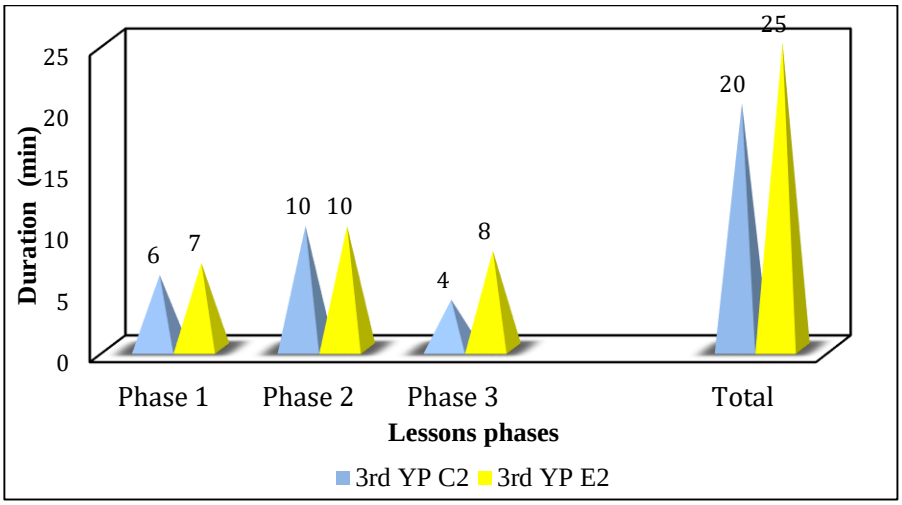

Figure 2. Effective durations of each phase of the two lessons and total effective durations for the group-level 3nd PY (control and experimental).

The analysis of these two figures shows that the effective durations of the two lessons for the control class are 15 minutes and 20 minutes for the C1 and C2 subgroups, respectively. The time lost estimated at 15 minutes for C1 and 10 minutes for C2 can be explained by the sharing of the teacher's presence time between the two levels despite the latter's use of the "work and make work" alternation mode. This wasted time, especially in the first phase of the lessons where learners in the C2 subgroup were forced to wait for the teacher to present the first phase, had repercussions on the completion of the two lessons. In fact, the two control level subgroups C1 and C2 were unable to complete the tasks of phase 3. The use of the software solution for the experimental class made it possible to significantly increase the effective duration of presentation of lessons, more than 2 minutes for E1 and 5 minutes for E2. This net decrease in lost time can be explained by the fact that learners work more time either in the teacher's real presence or in his/her virtual presence, which can promote good learning due to the active involvement of the learners. We note that, throughout the sessions, the teacher ensured that the same content was presented to the two subgroups of the same levels C1 and E1, on the one hand, and C2 and E2, on the other.

Anxious to see more the nature of much of the lost time, Figure 3 shows, for the two subgroups - control and experimental levels, the timing of the task of the learners at each phase of the lessons as well as the dead time for each sub-group. The task can be viewing the capsule, listening, interaction with the teacher, written work, etc. In this work, the dead time for a given subgroup indicates the period when the subgroup has no task and the teacher is in the presence of the other group.

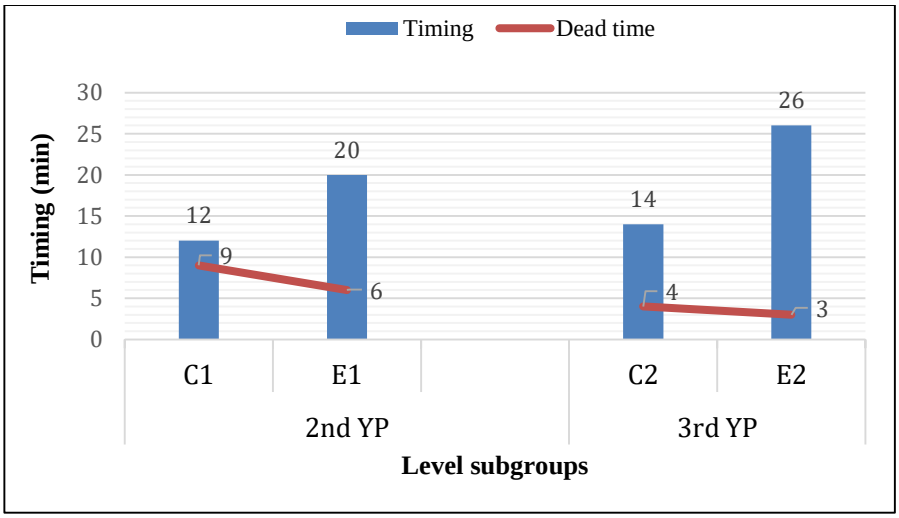

Figure 3. Learners task timing at each phase of the lessons as well as the dead time for each sub-group.

In view of the results of this figure, one can deduce that a good time management is ensured by the use of the software "Netsupport School", and this by comparison of the total duration of the task of the learners in control-group levels to those of the experimental level sub-groups, 12 min against 20 min for the 2nd YP level and 14 min against 26 min for the 3rd YP level. This result can be justified by the fact that the scope of the task for learners in the experimental group increases due to the virtual presence of the teacher. This could also promote good learning owing to the strong involvement of learners.

In addition, the evaluation of the idle times in the two level subgroups confirms, once again, the effectiveness of the software solution and the alternation between real presence and virtual presence. In fact, the dead time in the control sub-group, evaluated at about 13 min, is

high compared to the 9 min dead time in the experimental sub-group. This high time might negatively influence learning.

Another interesting parameter in the teaching-learning process at the MLC is that of the effort of the teacher. In effect, due to the alternation mode used, the teacher works with during the entire the two groups in a continuous way. One way to quantitatively monitor this parameter is to assess the actual duration of the teacher's intervention. Figure 4 shows the duration of this intervention with each level subgroup. The analysis of this figure clearly shows a considerable saving of effort by the teacher when he uses the software solution developed in this work. His real intervention during the entire session was with the control subgroup, while he saved 4 minutes of effort with the experimental subgroup, which could promote good learning since the learners became more involved.

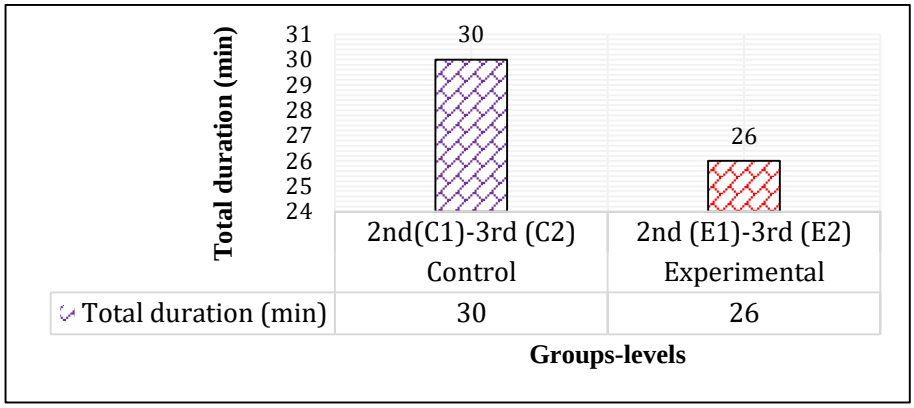

Figure 4. Duration of the teacher's actual intervention in the two groups-levels

Additionally, the learning of students from the control and experimental subgroups-levels of each MLC were assessed in the same way. The results showed that the learning level in the experimental subgroups of learners was slightly better than that of the control subgroups.

7. Conclusion

This work has tackled teaching practices in MLC with the aim of confronting the problem of loss of learning time due to the alternating mode of teaching used.

The time management strategy in a MLC, developed in this work, consists of setting up two alternate modes of teaching, the classic “work and make work” mode and the “actual – virtual” presence of the teacher mode using the Netsupport School software. The application of this software solution in two heterogeneous French language lessons for a subgroup (2nd YP + 3rd YP) yielded interesting results. This solution, in fact, reduces the time-out and the great effort of the teacher, and helps to involve the learners more in the construction of concepts, compared to the control subgroups.

Furthermore, learning practices of the control and experimental sub-group level learners were similarly assessed. The results showed that learners in the experimental sub-groups had a slightly better level of learning than the control sub-groups.

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