



DIDIDE: a Digital Didactic Designing Tool for Language Learning with ICT

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Abstract

The strategy "Europe 2020" has defined technological development as a major objective for the growth of European countries. Among the proposed initiatives, the Commission of the European Communities presented the "Digital Agenda". The aim of this initiative is to use ICT to enhance the teaching-learning process such as the language learning.

In response to the Digital Agenda, with the addition of the indication of the Italian Guidelines for the curriculum of the school and the teachers need to find an effective way to introduce ICT in language learning, was developed DiDiDe (Digital Didactic Design). DiDiDe is a digital device that supports teachers in designing language learning, integrating ICT into the different phases of the learning units, within a cooperative learning contest. The use of DiDiDe allows teachers to design challenging and innovative language learning environments, which consider ICT as tools that allow students to pursue individualized and significant language learning achievements. The individual dimension is embedded into the work of small groups and couples, focusing on process rather than product.

DiDiDe has been experienced in some primary, middle and secondary school of the Autonomous Province of Trento (Italy). The experimental group has planned its lessons through DiDiDe, while the control group has led its lessons in a manner customarily used by teacher. The effects of DiDiDe were investigated on both sides: students and teachers.

The results of the statistical analysis of the data gathered through quantitative and qualitative measurement, revealed that students not only have improved, for example, their learning performance, motivation, meta-cognition and attention.

1. Introduction

The strategy "Europe 2020" has defined technological development as a major objective for the advancement of European countries. This objective aims to be achieved through seven initiatives that foster innovation, economic growth and progress. Among the initiatives, the European Commission presented the *Digital Agenda*, which aims to exploit the potential of Information and Communication Technologies (ICT) through priority actions, such as improving the efficiency of education systems [1].

In Italy, the National Guidelines for the curriculum states that "the use of digital tools and resources to solve problems, provides opportunities to acquire new concepts and skills to enrich the meaning of concepts already learned and to verify the operation of learning previously made [2]. Teachers, therefore, has the important task to provide students with learning opportunities using ICT.

Foreign language (FL) teachers have always been ahead in integrating technology in language learning, seeing the benefits of technology. However, to integrate ICT in teaching-learning language, it is necessary that the teachers themselves possess skills that allow, on one hand to be able to use ICT and on the other hand to incorporate them into their teaching strategies. In this regard, the worldwide group of teacher shows the need to identify effective teaching practices. This need led to the creation of the design tool *DiDiDe* (Digital Didactic Design). *DiDiDe* is a digital device that supports teachers in designing teaching, helping them to integrate naturally ICT into the different phases of the process of teaching learning language, through cooperative learning.

2. DIDIDE

DiDiDe has been designed according to theories of learning, instructional design, language learning and data from the questionnaire "Use of ICT in schools in the region Trentino Alto Adige," in which FL teachers of the region Trentino Alto Adige have described their best practices for the use of ICT to language learning.

The instructional design tool is a software accessible online via password. The homepage shows the constituent parts of the instrument. The constituent parts of *DiDiDe* are the six stages of a teaching unit. Starting from a *Brainstorming*, that allows to assess students' prior knowledge about the topic, it arrives to the stage of *Input*, where the topic is presented, to end with the phase of *Metacognitive*



Revision, in which students are guided to reflect on the learning process that has led them to acquire the topic of the teaching unit.

For each phases of the lesson are provided a variety of: activities, cooperative methodologies, settings and ICT.

Using *DiDiDe* a FL teacher is supported in the design of language teaching units in which technologies are integrated in a natural way, with the use of cooperative methodologies in order to place the social learning as a basis of communicative learning.

3. Testing *DIDIDE*

An experimental research was undertaken to investigate the effectiveness of *DiDiDe* in designing language learning environments. The research was conducted in some schools of the Autonomous Province of Trento. The sample group consisted in 395 students: 193 experimental and 202 control and 12 teachers: 5 experimental and 7 control. In total 22 classes participated at the research: 11 experimental and 11 control, in total participated

The experimental group has planned its lessons through *DiDiDe*, while the control group has led its lessons in a manner customarily used by teacher.

The effects of *DiDiDe* were investigated on both sides: students and teachers. Regarding students, the variables investigated were: learning performance, motivation, attention, metacognition, commitment, relationships between students and teachers, concentration and autonomy in studying. As for teachers the variables examined were: teaching strategies and practices, perception of ICT in language learning and self-efficacy.

At the end of the experiment, was made possible to further improve *DiDiDe* thanks to the expert advice of the experimental teachers. As consequence, now *DiDiDe* is suitable for the instructional design of all subjects.

4. Results

The results showed that pupils have increased the motivation to study, participation in class, their autonomy in studying, concentration, metacognitive awareness, the relationship with their classmates and the teacher and the commitment. In addition, there has been some significant improvements in the performance of learning, where the experimental students have achieved more positive results than the students of the control group. These results were confirmed by the teachers themselves, who have noticed a gradual improvement of their students during the period of use of *DiDiDe*.

Regarding teachers, the statistic analysis hasn't been completed yet. However, the teachers showed an increase in the level of positive perception of the use of ICT in the language learning process.

The results provided have to be considered highly significant in view of the short period of time in which *DiDiDe* was employed in the classes. The experimentation lasted five months, beginning in October 2012 and ending in February 2013.

While using *DiDiDe* in the classroom were also observed students with disabilities and learning difficulties, which showed a significant improvement of their participation to the classroom activities and their relationships with peers.

5. Conclusion

The use of *DiDiDe* allows FL teachers to design challenging and innovative language learning environments, which consider ICT as tools that allow students to pursue individualized and significant language learning achievements. The individual dimension is embedded into the work of small groups and couples, focusing on process rather than product.

The positive atmosphere of cooperation and complicity between the members of the class groups, intentionally supported by the use of technology, has emerged as the success key to design lessons, which pay attention to all the dimensions of the personality of the learner (cognitive, meta-cognitive, practical and operational, affective-motivational-relational capital). Learning takes place in a real and authentic context, in which the student interacts with peers, the teacher and the technologies, because knowledge is a "social enterprise" [3], the result of interpersonal communication, comparison and exchange within communities of learning, sharing and negotiation of meanings.

References

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