TECHNOLOGY ENHANCED SECOND LANGUAGE LEARNING IN PRIMARY SCHOOL

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Abstract

Can language learning (LL) and digital technologies pair up for the development of an engaging and effective learning experience? LL is a key topic in the public education discourse in Switzerland, a country with 4 national languages and where English is also emphasized as a key job-finding skill. The multilingual character of the nation is indeed the resource that the AlpConnectar project taps on, using digital technologies to connect primary school classes from different linguistic areas with each other, so that each class can learn a second language with native-speakers peers in another Canton. The project, currently in its third implementation year, exploits simple cloud and videoconferencing systems with data protection, bringing tablets and interactive boards in the classroom. The paper outlines the project design and the experiences gathered in a three-year experimentation. The data show that teachers and students appreciate teaching and learning a second language in this way. Teachers assert that students are more motivated to learn and less inhibited to speak a foreign language. Furthermore, the data show an improvement of the language competences of the students and increased intercultural sensitivity. Results vary depending on the classes and their linguistic region.

Keywords: Language learning, digital literacy, multilinguism, linguistic exchange, peer teaching.

1 INTRODUCTION

1.1 Languages and language exchanges in Switzerland

Switzerland is a country with 4 national languages (German, French, Italian and Romansch; Figure 1). The Swiss education law mandates that students should learn both English and another national language by the fifth year of primary school, with exceptions in some cantons. This so-called “3/5 model” (or 5/7 model if the preschool stage is taken into account) introduces the first foreign language in grade 3, and the second one in grade 5. Since cantons are free to decide which national language to introduce, the languages actually taught vary from canton to canton. Figure 2 shows which second language (L2) is introduced in grade 3 in the different cantons.
Such a heterogeneous linguistic composition makes it possible to learn a L2 through language exchanges within the national borders. Learning the other national languages and becoming familiar with regional cultures is also set as a key objective for national cohesion, and in 1976 the Swiss Confederation mandated the CH Foundation to promote and support language exchanges for all school grades. In 2016 the Cantons asked for more a direct participation in language exchanges management, and a new foundation, Movetia, took over the same mandate.

Second language learning in primary education in Switzerland is usually based on specific handbooks (e.g. “Alex et Zoé” for French; “Der grüne Max” for German or “Grandi amici” for Italian), focused on building grammar rules and vocabulary. Language is then often taught without direct contact with the culture in which L2 is used. In recent years, thanks also to the new national standards (HarmoS) [2] and the language teaching strategy of the Swiss Conference of Cantonal Ministers of Education [3], a process of reorientation of L2 teaching has started [4]. Such reorientation is based on an integrated multilingual approach, where language immersion and language exchanges play an important role. This approach promotes learning of a foreign language in authentic communication situations. Children should be offered the opportunity to actually use as frequently as possible the foreign language.

In this framework, language exchanges seek to overcome the limitations of the regular language class by enabling students to build their language skills in authentic situations, in touch with the live culture and language they learn. Exchanges also enable the development of the so-called discourse competence, namely “(...) the ability to employ skills and abilities, knowledge and know-how, perspectives and attitudes to be able to act in a multilingual, interdisciplinary, transcultural and multimodal communication situation” [5].

Despite their importance for the country and their relevance within the new approach to language learning, language exchanges are not yet a common practice in Swiss schools, even if the actual number of students participating increases yearly [6]. Indeed, language exchanges usually last only for a few days and have relatively high costs.

1.2 The AlpConnectar Project

The AlpConnectar project was developed in order to explore how digital technologies and the internet can facilitate the implementation of language learning methodology that focuses on authenticity in contents, context, and tasks [7].

AlpConnectar is a pilot project of the three Universities of Teacher Education from the cantons Grisons, Ticino and Valais in collaboration with Switzerland’s leading telecom provider Swisscom. The aim of the project is to use digital technologies to connect elementary school classes in different
language regions of Switzerland to offer authentic communication opportunities in the L2. AlpConnectar pursues the following objectives:

1. to encourage second language communication skills: reading, listening, writing and speaking
2. to reduce inhibitions in second language direct communication
3. to increase second language learning motivation
4. to increase awareness of cultural diversity and affinities among the different regions of Switzerland
5. to enhance digital competences

From its outset in 2013 until today, AlpConnectar has allowed 9 primary school classes to engage in language exchanges over the internet, on regular basis and with different modes throughout the school year, in an experimental setting.

Concretely, the project has two models (Figure 3). Inter-cantonal connections link three language regions (German-, Italian- and French-speaking) so that each class can learn a second language with native-speakers peers in another canton, and at the same time teach their mother tongue to the third class. For example, students in Canton Ticino (mother tongue = Italian; L2 = French) could count on the support of a class from the French-speaking Valais for the learning of L2 and at the same time support a class from canton Grisons in learning Italian. The intra-cantonal model on the other hand connects two classes of two linguistic regions within the same canton. In the canton Grisons we connected the German-speaking region with the Italian-speaking region, while in the Valais the German-speaking and the French-speaking regions.

The devices selected to implement the connection are tablets, usually with a proportion of one device every 4 students. All the tablets have internet access and a set of apps. Teachers were given proper control over both the connection (that they could switch on and off), and the apps (that they could lock and unlock). The key software included a videoconferencing tool (Skype for Business), and a cloud service (Storebox); both are managed by Swisscom, which guarantees that all data are stored in Switzerland, thus eliminating any problems related to international personal and sensitive data management.

The AlpConnectar system, although simple, allows several modes of operation: large-scale videoconferencing moments offer a venue to present, discuss, or even sing along; small group videoconferencing sessions can be used to present favourite recipes or discuss; the cloud system makes it possible to share multimedia documents (texts, images, videos). The combination of these communication tools with other teaching materials – for example, a book published in the three
national languages – has also allowed the elaboration of other activities, such as online quizzes and challenges. In addition, pupils always asked for a face-to-face encounter of a few days, which was organized and completed a year-long language exchange experience.

The advantages of such a linguistic exchange are diverse:

- **Orality:** thanks to videoconferencing, orality has become a part of distance exchange (as opposed to letter or email exchanges) allowing also children from primary school to take advantage of it [8].

- **Timespan:** the exchange can be extended of the whole school year, and not limited to the few days of on-site visits.

- **Flexibility:** exchange sessions can be organized in various formats and with a flexible schedule.

Additionally, some researchers show that this type of activity can also be used to increase the awareness of cultural diversity and affinities [9,10] and to enhance the digital skills of the students (use of tablets, audio and video recording, picture taking and sharing, etc.) as well as to show a goal-oriented use of digital media, as opposed to entertainment use [11].

## 2 METHODOLOGY

AlpConnectar included a research action with different moments and tools, developed to track the project progress and to assess its outcomes. We conducted three main data collection activities:

1. **A pre-post focus group with the teachers:** at the beginning of the project to gather their expectations and at the end to gather their impressions;

2. **A questionnaire for teachers, focusing on their expectations and their disposition towards the project.** Teachers also indicated language skills in the second language of their pupils (last grade in L2, skills in speaking, listening, reading and writing), interest in languages as a whole, participation in L2 lessons, and some other transversal skills.

3. **A questionnaire for students, asking data about themselves (personal data) and their family (origin and socioeconomic status), how much they liked school disciplines and in particular second language (including perceived usefulness, competence level, etc.), intercultural awareness (knowledge of other language regions, readiness to meet “the others”, etc.), technologies (level of competence) and the project in general;**

The questionnaires were first administered at the beginning of the school year 2015-2016 (t1) and a second time at the end of the school year (t2) to all participating classes.

The targeted group consisted of 7 teachers who took part in the project (3 women and 4 men). 5 teachers have more than 10 years of professional experience, 1 between 5 and 10 years and 1 less than 5 years. All of them are primary school generalist teachers, i.e., they do not have any subject-matter specialization.

The students of the 7 classes are distributed as shown in Table 1, which shows that the students come from different classes (grades 4 to grade 6) and that their birth year has a range between 2003 and 2006. The different age of the students can have an impact on their language competences and should be taken into account. Also the distribution of female and male students differs according to the classes: Castiel, for example, has only 30% of female students while Flanthey has 65%.

<table>
<thead>
<tr>
<th>Town</th>
<th>Linguistic region</th>
<th>Class</th>
<th>Birth year of the students</th>
<th>Number of students (N)</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>Castiel</td>
<td>German</td>
<td>5-6</td>
<td>2003-2004</td>
<td>12</td>
<td>4 (30%)</td>
</tr>
<tr>
<td>Felsberg</td>
<td>German</td>
<td>6</td>
<td>2003</td>
<td>17</td>
<td>7 (41%)</td>
</tr>
<tr>
<td>Poschiavo</td>
<td>Italian</td>
<td>6</td>
<td>2003</td>
<td>15</td>
<td>6 (40%)</td>
</tr>
<tr>
<td>Naters</td>
<td>German</td>
<td>5</td>
<td>2004</td>
<td>19</td>
<td>10 (53%)</td>
</tr>
<tr>
<td>Flanthey</td>
<td>French</td>
<td>5-6</td>
<td>2004</td>
<td>17</td>
<td>11 (65%)</td>
</tr>
<tr>
<td>Monthey</td>
<td>French</td>
<td>5</td>
<td>2004-2005</td>
<td>17</td>
<td>8 (47%)</td>
</tr>
<tr>
<td>Sonvico</td>
<td>Italian</td>
<td>4</td>
<td>2006</td>
<td>16</td>
<td>9 (56%)</td>
</tr>
</tbody>
</table>
3 RESULTS

The next sections present the results of the qualitative data obtained with the focus group with the teachers (section 3.1) and the results obtained from the analysis of the questionnaires delivered during the school year 2015-2016 (section 3.2).

3.1 Qualitative data: what teachers say

The focus group followed the structure of a SWOT analysis, asking teachers to discuss the internal and external strengths and weaknesses of the project.

Teachers indicated that the opportunity to communicate in authentic situations enriched their L2 classes. They also reported a positive development of ICT and team-working skills. Concerning language proficiency, they observed a multi-faceted improvement and, above all, a strong increase in motivation. Critical points are mainly related to the use of technologies (too slow internet connection, poor sound quality of video conferencing, etc.). The mentioned problems have been solved in the following project year.

Teachers also discussed the relationship between the AlpConnectar activities and the "usual" textbook-based lessons. In fact, the book has been somewhat set aside in the middle of the year, but this was not perceived as a problem: this was offset by the fact that the students acquired other skills and in-depth skills in other areas of language learning. The support of headmasters was mentioned as important in order to avoid curriculum-related stress. Work on the textbook was complementary to working with AlpConnectar: for example, the book allowed the acquisition of vocabulary useful for the exchange activities.

Finally, teachers emphasized the need for some time management flexibility in order to realize the exchanges, but it was not problematic in the classes involved.

3.2 Quantitative data: pupils’ perception

This section presents the descriptive results obtained with the pupils’ questionnaire. They are divided into four aspects: linguistic, motivational, intercultural, and technological. The actual results, as measured by our research instruments, clearly indicate much more heterogeneous and less impactful outcomes as expected. Indeed, online digital language exchanges are no silver-bullet; nonetheless, what we discovered sheds some light on what elements influence motivation and the development of linguistic and intercultural skills in authentic learning settings.

3.2.1 Linguistic aspects

The development of language skills is of course a central aspect of AlpConnectar. In this perspective, pupils were asked to answer ten items, indicating whether or not they improved in a specific skill (e.g., “I can understand simple questions that concern me directly, e.g. someone asks me for the name or the address”). Based on these 10 items that affect both oral and written comprehension and production, an index has been generated; its values are shown in Figure 4. Remarkably, only 6.3% of Sonvico and 8.3% of Castiel have impression that they have not improved, while most pupils perceive an improvement in their language skills. The situation is similar in the intra-cantonal model, with one remarkable exception: we find a negative result in Poschiavo where more than half of the pupils responded that they did not improve (Figure 5).
3.2.2 Motivational aspects

The motivation to learn is a key element that can determine success or failure at school. We measured pupils' motivation to learn the second language before starting the project (t1) and after (t2) to see if there were any changes. Descriptive results, divided by class, show us that there is a significant variation depending on the classes. In the inter-cantonal model in Sonvico and Monthey, students are more likely to learn the second language (French, respectively German) than Castiel (Italian). It can also be seen that Monthey's tendency to enjoy a second language increased during the school year while it declined in Castiel; there were no major changes for Sonvico (Figure 6). Also in the inter-cantonal model we can find differences according to the classes. In this case the most motivated are the pupils in Poschiavo, followed by Felsberg and Flanthey. The students in Naters seem to be less motivated to learn the second language. In all classes, except in Poschiavo, motivation decreased during the school year (Figure 7).
3.2.3 Intercultural aspects

Another objective of the project is to raise awareness of intercultural issues and to introduce pupils to each other's regional culture.

Again, we see how the results to the question "Is it enough to speak only one language?" vary across the different classes. Monthey pupils – which include a strong presence of children of migrant families – disagree with this statement whereas there is more consensus in Sonvico and above all in Castiel (Figure 8). In the intra-cantonal model, Felsberg students disagree the most with the statement, followed by Poschiavo and later by the two Valais classes (Figure 9). Considering that the classes are set in largely different settings (from rural schools to industrial town schools), this might suggest that cultural elements influence the actual development of intercultural awareness and skills.
3.2.4 Technological aspects

This last section explores project’s contribution to the enhancement of pupil’s digital literacy. We asked the students to indicate if they think they had made any improvements in different digital tasks. The results show that there has been an overall improvement in the perception of their own digital skills. This concerns all classes in the inter-cantonal model (Figure 10), while in the intra-cantonal model some students affirm that they have not made any improvements in the digital competences (Figure 11). This is the case mostly in Poschiavo and Naters. This suggests that local variables (e.g., the in-class teacher’s procedures, or pupil’s attitude in general) influence the development of digital self-efficacy more than the actual availability and use of digital devices.
4 CONCLUSIONS

This paper presented the AlpConnectar project, an endeavour to integrate digital technologies in second language learning in primary schools, exploiting the potential of a multilingual country like Switzerland.

The results show that the project was well received by teachers, who emphasized its effectiveness in motivating students to learn a second language and in enriching their classes with a context of real communication. Teachers also indicated that AlpConnectar allows to improve the students’ technological skills as well as more transversal skills such as group work. Critical points concerned mainly technology-related issues that were largely solved during the second year of testing.

The analysis of pupils’ questionnaire, on the other hand, provided a more diverse and heterogeneous picture – in some respects even at odds with the statements gathered during the teachers’ focus group.

The motivation to learn a second language seems to be stronger in the French-speaking and Italian-speaking regions of Switzerland, and less in the German-speaking region. Actually, motivation here
decreased during the project. A similar picture also emerged in the analysis of intercultural aspects. Again, the pupils from the French-speaking and Italian-speaking regions changed their attitude toward the other linguistic regions in a positive way. They are more consistent in saying that speaking only one’s own mother-tongue is not enough. The results recorded in Monthey are particularly interesting, if we consider that that class is actually composed by children of many different nationalities. These first results led us to reflect on the status of second language learning in the four linguistic regions of Switzerland. Children from minority groups or from places where multiculturality is a daily experience seem to be keener on learning a second language and more open to cultural exchanges.

As for language skills, the results indicate that in general they have improved, even if there are differences between the classes, including some classes that indicated to perceive no improvement. The same holds for digital skills: while most pupils declared an improvement, some did not. This suggests that many class-level variables are actually implicated here: participating in the same experimentation and using the same digital devices is not enough to guarantee specific outcomes.

While our results are based on a limited number of classes and do not support a generalization, we can still consider AlpConnectar as a fruitful way to engage in language exchanges, which allows (a) to increase the motivation to learn a second language, (b) to improve language and digital skills, and (c) to approach culturally different regions and peers.

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