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Tablets and video-conferencing in L2 Italian courses - two case studies from Turin and Fornovo Taro

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* The author is exclusively responsible for the content of the report. The opinions expressed herein do not constitute the views of those organising or co-financing the project.

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Contents

Introduction

This document builds on the work begun by Ervet in 2013 with the "Parole in Gioco 2" regional project and then carried forward into 2014 with the "Parole in Gioco 3" project, financed by the European Integration Fund (EIF). The aim is to study, analyse and compare the innovative use of digital technology in the teaching of Italian as a foreign language (L2) to adult immigrants in Emilia Romagna and other Italian regions.

The research paper entitled "*Initial analysis of ICT use in the teaching of Italian to adult immigrants in Emilia Romagna*" (in Italian only) was the first step. The paper was drawn up in Spring 2013 and presented and discussed on 18 October 2013 at the "Digital technology use in teaching Italian to adult immigrants in Emilia Romagna - state of the art, evaluation and perspectives" workshop in Bologna.[1] The paper assessed the state of play in Emilia Romagna from a qualitative and quantitative standpoint. It also identified practices of interest in other regions, notably the experimental use of tablets by students with little or no schooling, a method developed by CTP[2] Parini in Turin which tilled the ground for the Tabula project, and CTP Fornovo Taro's trial use of Skype and other video conferencing tools.

Teachers, third sector associations and others present at the aforementioned workshop all expressed the desire to know more about these schemes which have continued and evolved still further since then. Thus, the decision was taken to analyse the two case studies presented in this report and to hold a meeting for educators and interested parties on 9 June 2014 (about CTP Fornovo's experience) and 24-25 June 2014 (Tabula project) in Bologna and Modena respectively.

These meetings facilitated closer analysis of the relevant schemes and served as a springboard for new initiatives which may come into being in Emilia Romagna in the near future, i.e. a new tablet-based project in Modena CTPs. Furthermore, the meetings were an ideal platform for the establishment of teachers' networks, both at a local level and with the colleagues from Piedmont. The hope is that such networks will support the exchange of good practices and outcome sharing which will ultimately benefit the 'end users', i.e. L2 Italian language course students.

The first section of the report presents the Fornovo Taro experience whilst the second section outlines the Turin-based Tabula project. The third and final section focusses on the similarities and differences between the two projects and features advice and recommendations on how to set up such schemes in other areas.

[1] http://www.ervet.it/ervet/wp-content/uploads/2013/10/REPORT_ICT-L2_finale_09092013.pdf

[2] Centri Territoriali Permanenti (CTP), since late 2014 transformed into Centri Per l'Istruzione degli Adulti (CPIA) are the adult education schools which depend on the national Ministry for education, university and research (MIUR).

1. Video conferencing in Italian language classes for adult immigrants in the Taro and Ceno valleys

1.1 Introduction

This chapter outlines the trial video conferencing scheme developed by CTP Fornovo Taro. The scheme was devised to enable foreigners living in isolated areas of the province of Parma, i.e. the Apennine mountains, to participate in Italian language classes. In the 2012-2013 academic year, CTP used Skype to link up two classrooms in different villages where the same course was being taught, with a teacher in one room and a tutor in the other. For the following academic year, Google+'s Hangout service was used to enable a remote user to participate in a course held at the CTP facility in a school in Borgo Val di Taro. In Spring 2014, CTP tested the Moodle Big Blue Button virtual classroom function on SELF, the Emilia-Romagna region's eLearning platform, with a view to rolling out a test course exclusively for remote students in the 2014-2015 academic year.

The content of this section is based on information gleaned from many sources: the workshop held in Bologna on 18 October 2013 outlining initial Skype tests; a brief overview of activities undertaken and future prospects drawn up by the CTP for the Emilia Romagna Regional School Office; interviews with the schools' headmasters, the CTP coordinator, teachers (see below) and students during a visit to Fornovo in April 2014; publications and ideas presented at the L2 Italian teachers training session held in Bologna on 9 June 2014 at the HQ of the Emilia Romagna Region.

The author wishes to thank the following individuals for their support and feedback on the report: Marco Pioli, Director of IC Fornovo; Alessandro Dall'Aglio, CTP coordinator; Stefania Armagni and Emanuela Cacchioli, teachers at CTP Fornovo; Daria Mora, teacher and civil servant, Province of Parma.

1.2 Background, objectives and organisation of the scheme

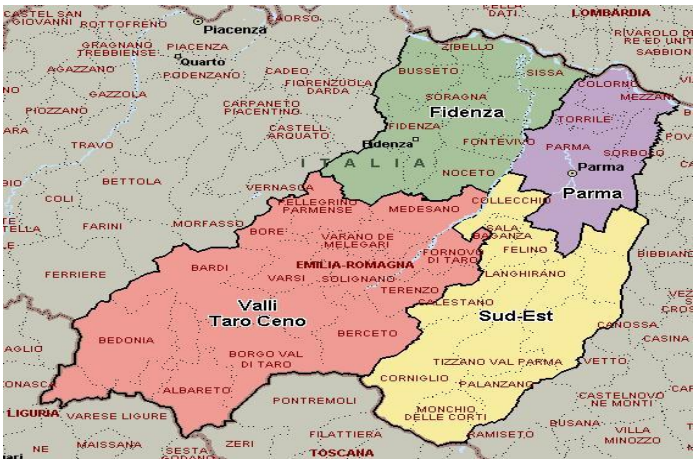
CTP Fornovo Taro

CTP Fornovo is one of four centres in the Province of Parma and covers the western Apennine area of the province, notably the Taro and Ceno valleys (see overleaf)[3]. The CTP is based at the Istituto Comprensivo (IC) di Fornovo Taro (a primary and lower-secondary school) and makes use of its classrooms in the afternoon, when children have gone back home. The CTP also has facilities in

[3] The largest CTP is located in Parma. CTP San Secondo Parmense covers the northern part of the province (towards the Po river) and is the main coordinator of PIG3 project activities for the whole province. CTP Montechiarugolo covers the eastern Apennine area. In the Province of Parma, a total of around €160,000 was spent on PIG3 in the 2013-2014 academic year with €135,000 spent on courses at the four local CTPs and the remaining amount used for third sector courses and teacher training.

other small towns and villages in the area: Albareto, Bardi, Bedonia, Berceto, Borgotaro, Calestano, Neviano Arduini, Pellegrino Parmense, Solignano, Valmozzola, Varano De' Melegari and Varsi.

The CTP is run by the Headmaster of the IC and offers an 18-hour teaching post for Italian, a 12-hour post for English, a 6-hour post for Mathematics and employs a secretary and a teaching assistant. Other teachers are contracted should the need arise and resources be available.



The centre offers secondary-level education and other training courses (see table below) for Italians and foreigners over the age of 16. 435 students signed up for courses in the 2012-2013 academic year with 192 students taking Italian classes and 34 opting for secondary-level education classes. In 2013-2014 (April 2014 data), 404 students registered with 193 taking literacy or secondary-level education classes. Table 1 shows the courses run in 2012-2013 and 2013-2014.

Table 1 - Courses run by CTP Fornovo in 2012-2013 and 2013-2014

Courses led by external teachers, i.e. non-CTP	
2 English courses, Borgotaro (2012-13 and 2013-14) 2 French courses, Borgotaro (2012-13 and 2013-14) 1 Spanish course, Borgotaro (2012-13 and 2013-14) 1 ICT course, Borgotaro (2012-13 and 2013-14) 1 School workshop, Pellegrino Parmense (2012-13 and 2013-14) 1 tailoring course (2012-13 and 2013-14) 1 cooking course (2012-13 and 2013-14) 1 yoga course (2012-13 and 2013-14) 1 pruning course (2012-13) 1 painting course (2012-13)	1 EIF literacy course, Solignano/Berceto (2012-13) 1 EIF literacy course, Bardi/Varano de' Melegari (2012-13) 1 EIF literacy course, Riccò (2012-13 and 2013-14) 1 EIF literacy course 'I learn Italian', Borgotaro (2012-13) 1 EIF literacy course, Bedonia (2013-13) 1 EIF literacy course, Borgotaro (2013-13)
Courses led by CTP teachers	
Lower-secondary school, Fornovo (2012-13 and 2013-14) 3 English courses, Fornovo (2012-13 and 2013-14) 1 basic ICT course (2012-13 and 2013-14)	2 mixed-level (A1 and A2) literacy courses, Fornovo (2012-13 and 2013-14) Literacy course for women, Fornovo (2012-13 and 13-14) Literacy course for women, Varano de' Melegari (2012-13)

Source: CTP Fornovo

It should be borne in mind that at CTPs in mountainous areas, L2 Italian classes are often categorised at A1 and A2 levels[4] as a mere formality. Most classes in fact cover several different levels with students of varying abilities grouped together in order to reach the minimum number of participants necessary for the course to go ahead.

Table 2 below shows the characteristics of the 192 students who took part in the 2012-13 Italian literacy classes.

The lion's share of literacy and secondary education classes took place at the main Fornovo site (131 students, i.e. 68% of registered individuals) whilst smaller groups were taught in Bedonia (28 students, 16.6%), Borgotaro (19 students, 10%) and Riccò (14 students, 7.3%). Whilst in large urban areas L2 Italian courses can be run on a regular basis, courses in smaller urban or outlying areas are run only when the class size meets the minimum requirement and resources are available to hire teachers. It was against this backdrop that the video conferencing trial scheme was crafted.

Table 2 - Characteristics of CTP Fornovo Italian course participants (2012-13)

Age (years)	Women (120)	Men (72)		Most frequent nationalities[5]	Women (120)	Men (72)
16-19	3	8		Morocco	57	13
20-29	42	21		India	14	10
30-45	60	35		Moldova	8	
45-59	12	7		Albania	7	3
>60	3	1		Pakistan	6	19
				Ghana		11

Source: CTP Fornovo

Foreigner numbers and the justification for the trial scheme

Of the 30,000 inhabitants of the Taro and Ceno valleys, around 3,000 are non-Italian. 35% of the area's foreigners live in Fornovo and the others are spread across the 14 other municipalities. In small towns and villages, immigrants make up a larger proportion of the population and the need to be literate and possess knowledge of the Italian language is a very real one for parents wishing to monitor their children's progress at school and, in general, due to the higher rate of interaction with local residents. However, the low number of potential students makes it impossible to organise traditional courses in each municipality. In addition, transport infrastructure in mountainous areas is generally subpar and foreign residents often find it very difficult to travel to participate in courses held at the main CTP site in Fornovo or in larger urban centres.

To address this problem, harnessing the good ICT endowment and internet connectivity of several schools in mountainous areas[6], CTP Fornovo put forward a proposal for an EIF project featuring the

[4] We refer here to the language proficiency levels defined by the Common European Reference Framework (see http://www.coe.int/t/dg4/linguistic/cadre1_en.asp).

[5] Other nationalities represented: Algeria, Argentina, Cote d'Ivoire, Cuba, Ecuador, Egypt, Ethiopia, Gambia, Kenya, Nepal, Nigeria, Peru, Romania, Senegal, Somalia, Tunisia, Ukraine.

[6] Good digital connectivity is the result of investments made by the Province of Parma in local schools over the past 15 years.

trial use of Skype and interactive whiteboards to link up classrooms during lessons. This would bring together enough participants to justify the running of courses in outlying areas. The 'multiclass' model, currently used by teachers in mainstream schools in mountainous areas, was proposed for teaching Italian as a foreign language to adults.

The scheme was proposed for two outlying areas, Bardi and Varano de' Melegari (30 km apart) and Berceto and Solignano (18km apart), which both faced the problems described above and met the technical criteria.

Table 3 - Foreign population and total resident numbers in municipalities covered by the scheme

	Residents (as of 01/01/2013)	**foreigners**	**% foreigners**
Bardi	2,306	186	8.1
Varano de' Melegari	2,698	215	8.0
Berceto	2,172	198	9.1
Solignano	1,778	162	9.1

Source: CTP Fornovo

Courses were run in Bardi in 2005-06 (12 students) and 2007-08 (15 students), but no course had been run since. The town has a lower-secondary school with an ICT lab, linked to ITSOS Fornovo, which was used for the new course. Varano de' Melegari is closer to Fornovo and thus CTP had been able to run language courses for small groups, over short periods of time. The main hall of the local school (a secondary facility of the Bardi-based Istituto Comprensivo Valceno) has been fitted out with electronic whiteboards and an internet connection. Berceto and Solignano both have school complexes with ICT equipment and an internet connection, although the connection in Solignano was below par, whilst a course was held in Ghiare di Berceto in 2006-07 with 21 students.

Once the decision to roll out the trial scheme had been taken, an 80-hour A2-level course was offered in the Bardi - Varano de' Melegari area and a 70-hour A1-level course was offered in the Berceto - Solignano area. The courses were advertised in schools, town halls and amongst associations which had previously contacted the CTP concerning requests for Italian lessons for foreigners. These associations had experience in contacting foreigners living locally, understanding their needs, i.e. learning needs, best time slots for lessons etc., and encouraging them to enrol for courses.

Schools and local administrations were either contacted by phone or in person and interviews were held with social policy staff. In Bardi, enrolment was managed by the municipal education and health services department whilst in Varano de'Melegari students were directed to the IC Val Ceno where they could ask teachers or secretaries for more information. In Berceto and Solignano, teachers, residents of the towns in question, were tasked with advertising the courses. It emerged that an the most effective method of advertising the courses was handing out flyers to foreign primary and lower-secondary school students to take home for their parents.

The preparatory phase lasted around one month and featured the involvement of Alessandro dall'Aglio, CTP coordinator, with significant support provided by Marco Pioli, Headmaster of IC Fornovo Taro.

1.3 Skype trial scheme

Video conferencing in two classrooms: approach and technical aspects

The methodology adopted for the trial is outlined below. The course was held in two classrooms which were connected via Skype. A teacher taught in classroom 1 in view of a webcam plugged into a laptop computer which was connected to the interactive whiteboard. In classroom 2, a tutor was present to manage the Skype video link and help students to follow the lesson by interacting with the teacher, who was visible on the interactive whiteboard. To avoid having some students being taught exclusively by video link whilst others were taught 'face-to-face', the next lesson was taught by the teacher in classroom 2 with a tutor present in classroom 1. Owing to the distance between the two classrooms, a teacher able to teach in both classrooms on alternate weeks could not be found. Therefore, a total of four teachers were involved. However, it was possible to find a tutor willing to work in Bardi and Varano (the person in question living halfway between the two towns) whilst in Berceto-Solignano two individuals shared the tutor role with one of them also playing a teaching role.

From a cost perspective, the teaching hours for the course were the equivalent of a course with one teacher (even though two teachers shared the role) and one tutor. Therefore, this course was cheaper than the traditional method of hiring two teachers would have been.

For this teaching method to work, each classroom needed to be fitted with:

- a high speed internet connection. The school in Bardi had a HDSL connection of up to 40 Mbps and the school in Varano had a 20 Mbps Telecom ADSL connection. Internet connections in Berceto and Solignano are managed by the Municipality, and not the schools, via a satellite link provided by Lepida[7], a Region-backed enterprise.
- an interactive whiteboard and a webcam. However, in Solignano there was no interactive whiteboard and a video projector connected to a Skype-ready PC was used instead.
- External speakers were not necessary as the interactive whiteboard's built-in speakers were sufficient. Microphone use was abandoned at an early stage as it was deemed unnecessary and as they tend to make lessons seem too theatrical.

Recruitment and preparation for teachers and tutors

The implementation of the approach outlined above required the involvement of four teachers to alternate teaching duties. In order to harness the skills of teachers already working at the schools, the headmasters of interested schools and some teachers already on CTP's radar were contacted [8]. Teachers were recruited via a ranking tender with points assigned for qualifications and teaching experience. Two teachers already working at the respective schools were awarded the Berceto and

[7] http://www.lepida.it/news/il-nuovo-tooway-porta-internet-veloce-in-emilia-romagna

[8] With the exception of one candidate who had already sent her CV to the school to apply for the Italian for foreigners teaching role, all of the candidates submitted their CVs after having been contacted by CTP owing to the call for interest falling to attract enough applicants. However, there was no repeat performance in 2013-14 with 18 teachers applying for the contract.

Bardi contracts, an external teacher was chosen for Varano and a trainee was tasked with teaching duties in Solignano[9].

Of the four teachers chosen, only one had experience in teaching Italian as a foreign language to adults. One had years of experience as an Italian teacher at one of the schools but had no experience in teaching L2 Italian to adult immigrants. Another was a graduand in literature with some teaching experience but none in teaching adults. The fourth teacher holds a Masters degree in linguistics and has a regional certification as a cultural mediator. Prior to the course, she had no teaching experience.

Skill and familiarity with ICT varied somewhat amongst the chosen teachers, a consequence of the EIF project recruitment system (calls for tender on an annual basis) which tends to emphasise qualifications and other related aspects more than digital skills. Nevertheless, all of the teachers showed willingness to take part in the trial which constituted not only a technical challenge but also involved working in close quarters with another teacher and a tutor.

The three tutors (one each in Berceto and Solignano and one for Bardi and Verano) were recruited in the schools. One was a classroom assistant, another was a technology teacher with a passion for ICT and the third tutor, working at Solignano, served as both a tutor and a teacher (the graduand who had also served as a replacement at the local nursery school). The circumstances and location of the trial sites made it very difficult to draw on the services of specialist professionals and thus it was impossible to set very stringent criteria for the recruitment of tutors. In hindsight, certified ICT skills would appear to be a pre-requisite for such a post.

The teachers who took part in the trial scheme had no prior experience in working as a team but were obliged to take part in a training course organised as part of the EIF project. In addition, lesson planning saw them interact on a regular basis. Much of the lesson planning activities were carried out after the courses had started owing to the different skill levels of the students (some were using the A1 level textbook whereas others had the A2 version). This meant that teachers had to work together and make adjustments almost in real time. The teachers were not given any special training in using Skype as the EIF training course focussed mainly on L2 Italian teaching. However, during the first five lessons, the CTP coordinator was present to assist the teachers, especially with technical issues. The tutors were given no specific training.

Course participants

Feedback from potential students on the course offers was very positive, especially in Bardi, where the offer was brand new, with 10 individuals from India featuring amongst the 21 who enrolled. The main draw for most participants was the fact that they could receive a certificate of attendance which would exempt them from having to sit (and pay for) the A2 level Italian language test in order to obtain a residence card. This was the case for almost all of the course participants in Bardi. Carers from eastern Europe, who at work often pick up dialect, were also interested in the courses with a view to improving their command of Italian and therefore their professional outlook.

[9] The trainee applied as an L2 Italian teacher and was chosen because none of the ranked teachers had indicated that they were available to teach in Solignano and it was deemed that it would be easier for her to build rapport with the local immigrant community as she was residing in Solignano.

Student numbers surpassed initial expectations and in Bardi, where on two previous occasions courses had been run for 12 and 15 students, there were sufficient numbers to run a course. However, the low enrolment numbers in Bardi for the following year were one of the reasons why no courses were run there in 2013-14.

Table 4 - Characteristics of Skype trial course participants

Bardi (21)	**Varano de' Melegari (11)**	**Solignano (8)**	**Berceto (6)**
India 10	Morocco 5	Morocco 5	Ghana 3
UK 3	Albania 2	Argentina 2	Somalia 2
Albania 1	India 3	Moldova 1	Nigeria 1
Moldova 3	Pakistan 1		
Romania 1			
Ukraine 1			
Peru 1			
Cuba 1			
Sex / Age		**Sex / Age**	
13 women / 8 men	9 women / 2 men	5 women / 3 men	6 men
3 27-29 years	4 21-26 years	3 26-29 years	2 24-27 years
12 30-40 years	6 30-33 years	2 34-38 years	4 30-37 years
4 41-49 years	1 45 years	3 43-57 years	
2 64-66 years			
Level of educational attainment			
Illiterate 7[10]	Primary school 2	Secondary school 26	Higher education 6 Degree 3

Source: CTP Fornovo

46 students enrolled for the 2012-13 courses with 32 taking the A2 course at Bardi-Varano and 14 enrolling for the A1 course in Solignano-Berceto. 23 students were awarded with EIF certificates of attendance for having been present at at least 70% of the lessons. 11 certificates were awarded to students at Bardi[11], 4 in Varano, 5 in Solignano and 3 in Berceto.

Information on the nationality, age, gender and schooling level of the students is shown in Table 4. Although the majority of students were women (27 of 46 students) in their thirties (24 of 46), analysis of the data reveals that classes were very diverse in terms of nationality, cultural and linguistic background and level of schooling. As previously mentioned, this led to the adoption of the 'multiclass' approach.

Rolling out the Skype scheme

The A2 course in Bardi-Varano de' Melegari ran from February to June 2013 with two three-hour lessons per week (Monday 14:00-17:00 and Tuesday 14:30-17:30) for a total of 80 hours. The A1

[10] Two students did not state their level of schooling and are thus included in the group with no formal schooling.

[11] The figures for Bardi include 4 students from EU countries who were not awarded EIF certificates as citizens of EU Member States were not included on the register.

course in Berceto-Solignano ran from January to May 2013 with two 2-hour lessons per week (Friday 14:00-16:00 and Saturday 10:00-12:00) for a total of 70 hours.

The 'multiclass' model was fully applied to both of these courses. On-site visits revealed that, in practice, lessons struck a fine, praiseworthy and surprising balance between the few moments during which all students were asked to follow the teacher's explanation and to complete a follow-up activity, i.e. answer a question orally or in writing) and the more frequent periods where the teacher would assign different tasks to different groups and/or individuals and then interact with each one in turn to answer questions, make corrections or provide clarification. In the absence of classroom assistants, the assistance that more advanced students or 'faster learners' can provide to their classmates, especially if they have the same mother tongue, is of great importance. One assistant-tutor was present during the two courses but always in the classroom where the teacher was not physically present.

Skype was used from the very first lesson and witnessed different developments. In Bardi-Varano de' Melegari there were no technical problems bar the few occasions when the connection was lost and it was necessary to call the other classroom to re-establish the link-up. In Solignano-Berceto, there were more serious problems. The ICT equipment and internet connection were excellent in Berceto but the signal in Solignano was very weak, a problem which has since been solved by extending broadband coverage. When the connection failed, the tutors decided to continue the lesson even though this was clearly not the objective of the scheme.

At the beginning of every lesson, the teacher would connect to Skype in one classroom whilst the tutor would sign in in the other and then proceed to call the teacher. Upon initial connection, and on any other occasion deemed appropriate, the tutor would inform the teacher of which students were present and of any students arriving or leaving the classroom[12]. During lessons the webcam was left in a fixed position, with the teacher in the foreground and the students in the background, in order to mitigate the added stress of having to manage a webcam. At times, the teacher or the tutor would move the webcam so as to focus in on something or someone for the benefit of the students in the other classroom. In Bardi, the tutor would move the webcam so as to show the student who was speaking whereas in Verano there were fewer students and so they would sit around the main desk, meaning that there was no reason to move the webcam. In order to recreate the classroom feel and avoid a three-hour-long close-up of the teacher's face, efforts were made to show students on the webcam. At specific times, the webcam would be moved to focus on the teacher or the teacher would move in front of the webcam so as to be seen by the students in the other classroom or communicate with the tutor.

Teacher challenges

Unsurprisingly, the remote connection of two classrooms had a bearing on teaching methods.

One teacher decided to make greater use of the whiteboard, which could be seen even by 'remote' students, rather than referring to the content and exercises in the students textbooks, as she

[12] In adult classes, students frequently come and go, arrive late or leave early due to family or work commitments or, quite simply, due to a lack of familiarity with taking a course.

couldn't directly see nor control what the students were doing in the lesson. [13] However, this strategy depends upon the student's level of schooling and their familiarity with learning environments. For example, on this score the students in Bardi were 'ahead' of those in Varano and on several occasions the Varano teacher was able to set exercises for students in a 'traditional' manner whilst she spent more 'hands-on' time with the Varano students by playing games with the whiteboard as the focal point. Some cultural aspects linked to students' educational backgrounds were also noted, with the teacher commenting that "eastern European women prefer textbooks".

The Skype connection problems (another issue of importance to the eastern European students) meant that more emphasis was placed on audio content for which on-screen pictures or text are not necessary.

Furthermore, teachers reported that they felt more tired after lessons which were long in length (3 hours) and made more tiring by the need to constantly look at the screen to address repeated requests for corrections and answers from the students. It was thought that video conferencing and the presence of a tutor would act as a 'filter' for such requests, but in actual fact there were more such requests coming from 'weaker' students due to the lack of a physically present teacher to reassure them. In addition, video conferencing obliges teachers to avoid any down time so as to make the lesson as engaging as a traditional lesson.

Another factor which had a bearing on the teachers' task was the presence of other staff in the teaching process, i.e. another teacher, with whom the teaching duties were shared, and the tutor present in the other classroom.

It was necessary for the two teachers leading each course to work hand-in-hand on lesson planning, teaching methods, choosing materials (the same had to be used in both classrooms) and other issues. Co-operation involved many phone conversations and was strengthened by the activities organised at the EIF training course.

The class registers, one for each site and therefore two per course, played a significant role in teacher cooperation. The two course registers were mirrored: in one classroom the teacher took the register whilst the tutor did likewise in the other classroom and noted down the topics that had been covered in the lesson which were, of course, the same in the two classrooms. At the next lesson, the other teacher could consult the register and would see a description of the work done in the previous lesson and could therefore avoid repeating the same activities and ensure teaching continuity.

Teachers felt a growing sense of responsibility for guiding and supporting the tutors and rendering their task easier, especially those with less experience, and had to show willingness to accept their reactions, advice and even criticisms. For many teachers, opening up their work space to other staff is seen as a difficult and problematic step, if not as unacceptable.

The key role of the classroom tutor

The presence of the classroom tutors was seen as being of great significance by both teachers and students. One teacher said that "had there been just a video link and no tutor then no-one would have showed up at the course". Even though they did not have the official status (nor the cost) of

[13] EIF students used the FacileFacile textbooks, published by Nina Edizioni, which were given to them free of charge by CTP Fornovo in line with their linguistic abilities (A0, A1 etc.).

teachers, the tutors provided much teaching support and ensured human interaction with the students, the benefit of which is hampered somewhat in communication via video conferencing. The presence of the tutor in the teacher-less classroom was what made the lesson seem 'real' for many students as it reduced the 'emotional distance' between teacher and student which was increased by the use of video conferencing.

The main tasks performed by the tutor were:

- technical equipment management. As previously stated, tutors were required to turn on the computer and interactive whiteboard, call the other classroom on Skype, focus and move the webcam appropriately etc.
- to provide educational support to the students, e.g. ensure that the teacher's instructions were followed, provide further explanation if students had not understood, encourage students when they answered correctly and correct any errors made etc. The execution of these tasks is clearly dependent on the tutor's skills.
- to manage social dynamics, ensuring that all students participate (asking them to speak, asking for their attention etc.), managing and facilitating communication in the classroom and remotely and encouraging interaction between students (formation of sub-groups etc.).
- to provide organisational support by presenting classroom materials and collecting students' signatures in the class register.

1.4 Hangout trial scheme in Borgotaro

In light of the extremely positive outcome of the Skype trial scheme, CTP Fornovo decided to continue to use video conferencing for courses in mountainous areas in the 2013-14 academic year.

In Berceto-Solignano, CTP and the principal decided not to offer a course in 2013-14 due to fears of low enrolment numbers and to poor technical conditions in Solignano. However, in March 2014 a new and improved internet connection was set up which covers the school and thus a course may be organised in 2014-15.

In Bardi-Varano, on the other hand, there seemed to be present the right conditions to continue with the course using Skype. However, the Bardi course starting in January 2014 was stopped after 3 lessons due to an insufficient number of new students[14] whilst the Varano de' Melegari course suffered the same fate in February 2014 with only 6 or 7 of the 11 enrolled students showing up to lessons.

In the meantime, the possibility of using the Google+ Hangout service (see information box) to enable Tatiana to participate in Italian lessons at home was being discussed. Tatiana is a Russian

[14] This unexpected turn of events was probably down to the fact that the most motivated individuals had already taken the course the previous year. In Bardi, there were far fewer Indian students. It seems as though the students who were awarded A2 certificates deemed that they had completed their Italian language studies. Broadly speaking, the award of the certificate of participation was the primary motivation for attending the course whilst the desire to improve one's knowledge of Italian was only a secondary concern.

national who had recently arrived in Italy, enrolled for the Bardi course and then, upon its cancellation, was assigned to the Bedonia - Borgotaro (afternoon lessons) and Riccò courses (morning lessons). Tatiana lives in a very isolated area 15 km away from the village of Bardi and thus the idea of participating remotely was of great interest to her.

The Hangout service

Hangout is a service provided by Google's social network, Google+, which, in the same vein as Skype, has a video conferencing facility and enables all conversation participants to share the same screen and thus view content shown on a participant's computer screen, interactive whiteboard or other connected device.

In addition, Hangout offers free video conferencing calls for up to 10 users whilst Skype offers this service only to paying customers for calls involving three or more users with only audio being shared, i.e. users can hear but not see each other.

The Hangout idea was presented to the CTP coordinator by the Bardi school IT technician. The conditions for trying out this idea seemed optimal with Tatiana already having a Gmail account, an Italian husband who already used Hangout and could therefore assist her, a high level of education, good understanding of English and a home computer (with a good internet connection) that she was familiar with. Initially, Tatiana connected to the Google+ account of Emanuela Cacchioli, the teacher at Riccò, and used the tablet supplied by the CTP owing to the lack of an interactive whiteboard at Riccò. Tatiana was then asked to change to the course taught by the same teacher in Bedonia but was allowed to continue to participate remotely via the CTP tablet.

From a technical standpoint, the set-up worked more efficiently in Bedonia as the internet connection was good and the tablet did not require any technical adjustments as the speakers, webcam and microphone are all built-in. Also, from a learning perspective, the Bedonia course was run on a "two-speed" basis with one group on a par with Tatiana's level and another group of five semi-illiterate students. The Riccò class had students of multiple levels and needs which were too difficult to manage. In spite of this change, the lessons were still too slow with too much down time as the teacher had to keep moving the tablet's webcam close enough to the board to enable Tatiana to read what she had written. It was this drawback that led to the idea of developing a new scheme, harnessing the potential of the interactive whiteboard in the Borgotaro classroom and Hangout's 'share screen' function.

The Borgotaro course was held at the Via Cacchioli site of the Istituto di Istruzione Superiore Zappa-Fermi in Borgo Val di Taro. The course began in December 2013 with a scheduled teaching time of 100 hours divided up into two 2-hour lessons per week. It was then decided to have 2.5 hour lessons and subsequently 3-hour lessons in order to complete the course by the end of May 2014. To ensure that the minimum number of students was attained, the course was open to students of different levels (A1 and A2) and the result was a class which was truly 'multi-level'. A total of 19 students enrolled, with 13 regularly attending. They can be broken down by characteristics and classroom activities into three sub-groups: 1) 4 women, most of Moroccan origin and living in Italy for years, who could speak and understand Italian reasonably well but were semi-illiterate and an Albanian woman with decent language skills; 2) 8 men, including some brothers and cousins, of different countries of origin (mainly Pakistan and Morocco), 4 of whom had already sat the A2 test in 2013

whilst others had a very basic level of Italian; 3) Tatiana, very independent with good results after just a few months.

After around 3 months, the initial course teacher had to leave due to an increase in other pre-arranged work commitments and was replaced by Emanuela Cacchioli who saw the course out. The new teacher was very motivated to continue the video conferencing trial and already knew most of the students as she had taught previous courses at that location.

Against this backdrop, using video conferencing to allow a student to participate remotely has implications for both the teacher and the remote student. For teachers, Hangout's 'share screen' feature is easier to use than Skype as, once activated (or deactivated) with a click, they don't have to concern themselves with what the remote student can see as the latter sees (and hears) what is shown on the interactive whiteboard and any audio, video and hypertext content shown to the class. However, sharing content which is not presented using the interactive whiteboard is more complicated.

As with Skype, when using Hangout the teacher can see the student, if the latter's webcam is turned on, and the student can see what is happening in the classroom depending on where the teacher's laptop is facing. If good quality equipment is used, the audio and video quality enables the remote student to participate in the lesson, i.e. hear and understand what is happening in the classroom as if they were physically present and even interact verbally with other students, e.g. by reading aloud or by asking or answering questions. However, there is still a visible sense of distance when the screen share function is used as the remote student can only see what is shown on the interactive whiteboard and loses visual contact with the other students or other content shared by the teacher with students which cannot be shown digitally on-screen.

In Borgotaro, some students in the classroom expressed concerns about possible 'invisible observers' watching them from home thanks to the video conferencing technology ("who are they and what are their intentions?"). It was thus agreed that only the male students would be shown on the webcam. Such modesty shown by some of the female students can be ascribed, understandably so, to their cultural backgrounds. The learning set also matters. In the previous courses where Skype linked two classrooms, a teacher and a tutor were present on both sides of the connection and provided an 'institutional guarantee' for the students. With the Hangout scheme the home setting is 'unknown'. On the other hand, moving away from a traditional classroom context opened up new teaching possibilities based on 'real' communication. Whilst the background noise and voices of Tatiana's husband and daughter were initially seen as a disturbance, they then began to intrigue the other students and formed the basis of authentic conversations between the students sitting in the classroom who asked her how her daughter was, what the family was doing etc.

The fact that the remote student had a good level of autonomous learning skills, a pre-condition for allowing her to participate remotely, allowed the teacher to cope with a 'virtual' participant and enabled her to support other students in the classroom whilst Tatiana worked on her own[15]. The true advantage of the scheme is that it enables students living far away to participate and, at least

[15] Tatiana has a very introverted personality and would often only respond to direct questions. These character traits had already been picked up on during the lessons in Bardi and emerged still further when she participated remotely. Therefore, there was an increased number of 'break-off' exchanges between the teacher and Tatiana, a quite normal occurrence in a multi-level class.

in part, benefit from what is happening in the classroom. Another idea that CTP Fornovo is planning to trial is that of a 'virtual classroom' (see 1.6 Future Developments). However, the fact remains that the teacher has another relationship to manage, in addition to those with the students in the classroom, and must remember that there is a remote student who must be made to feel part of the lesson otherwise students, both remote and in the classroom, will lose interest. Therefore, lessons must be planned meticulously.

To support distant teaching, the textbook, the exercise book and any other learning material prepared by the teacher (to be sent in advance to the remote student), can play an important role. These materials allow the teacher to create a stronger link between the classroom and the remote student, although there may be technical limitations in terms of viewing such texts as well as correcting or annotating written exercises. Even though the answers to a given exercise can be shared on-screen, the exercise needs to be physically marked by the student as it is very difficult for the teacher to supervise this particular task.

1.5 Cross-cutting appraisal of the two trial schemes

Student feedback and outcomes

This section focusses on the two most important assessment criteria, namely language learning and student participation/motivation.

Were it not for video conferencing, the two courses with dual classroom use would not have gone ahead and the Russian student who took part remotely in the Borgotaro course would almost certainly have not been present at lessons held a long way from her home. The trial schemes thus played a determining role in enabling some 50 students to take Italian language courses for foreigners.

A more in-depth analysis of video conferencing use can be conducted by comparing the experiences of students when the teacher was physically present and when the tutor was physically present. The efficiency of video conferencing was certainly influenced by the connection quality which led to quite substantial variations in audio and video quality. Feedback from the students shows that their perception of and reaction to these problems was heavily dependent on their motivation to study and their level of prior schooling. Those who felt a strong need to participate and complete the course deemed the technical issues to be of secondary importance and were more appreciative of the fact that the technology contributed to the course being able to take place. Students who needed encouragement to study Italian, both in general and during lessons, had a negative opinion on the video conferencing lesson quality and pointed out the technical limitations of such a method vis-a-vis traditional lessons. The students' level of prior schooling, and thus their 'learning abilities', seems to have been pivotal in determining whether students could work autonomously or at least deal with times when video conferencing issues made interaction difficult.

Many students said that the lesson duration (3 hours) was a significant problem (many students would leave before the end of the lesson) which was only exacerbated by the use of video conferencing.

Whilst the teachers praised the work done by the distant tutors, they commented that they can teach physically present students more effectively and efficiently.

In the Hangout trial, the individual student-teacher relationship was acknowledged as very good (compared to the Skype classes) but there was still a lack of visual contact owing to connection and webcam picture quality limitations and due to the loss of webcam picture, but not audio, when screen content was shared.

Scheme sustainability

The two trial schemes have slightly different cost and economic sustainability profiles which will have a bearing on whether the schemes will be repeated in the future.

The course held in two remotely connected classrooms saves on hiring a second teacher but the cost of a tutor does need to be factored in. Opening up a course to individuals who can connect remotely is an even more economically viable solution as there is no need to hire a tutor. Furthermore, the school incurs no cost at all if students participate remotely as the student bears their own computer and internet connection costs and teachers can allow such students to participate without requiring any special technical support. In order to have remotely connected classrooms there needs to be cooperation between the two schools which both need to be open during lesson times. For students remotely connecting from home or, for example, from a library, there are no such requirements.

Therefore, it is very difficult to compare the two schemes. Linking up a second classroom allows more 'external' students to participate whereas having several individual remote students using different connections to take part in a lesson would be difficult to manage using current teaching methods and equipment. It is with this in mind that CTP has launched a new experiment (in 2014-15 school year) with a virtual classroom. Saving on the cost of a tutor equates to a more limited potential aggregation of distant students. It should be borne in mind that the two schemes were honing in on two different target groups. Classroom work, even in the presence of a tutor with a remote teacher, is of paramount importance for students with little or no prior schooling, whilst partly or fully remote learning demands a level of autonomous learning and learning abilities that are typically associated with prior schooling.

The choice and training of teachers for such courses are extremely important and a certain familiarity with and predilection for ICT should be considered, especially in light of the uncertain availability of ICT support staff. Therefore, where ranking tenders are used to assign teachers, more emphasis needs to be placed on digital skills[16]. An increase in ICT training for teachers could also be achieved by taking advantage of the 30 hours of mandatory training that EIF rules (in Emilia Romagna) require to L2 teachers.

Another way to engage more with qualified teachers who show interest in the schemes would be to conclude agreements with universities to promote research, traineeships etc. relating to innovation in teaching. For example, Marco Mezzadri, Professor of Italian Pedagogy at the Department of Italian Studies at the University of Parma, has promoted several different initiatives concerning the teaching of L2 Italian, although only a few such initiatives have targeted adult immigrants.

[16] There is no lack of interest here. A total of 60 teachers submitted applications during the latest CTP Fornovo call with 18 applying to teach L2 Italian.

In addition to the minimum requirements for technical equipment and connectivity, without which such schemes would be impossible to implement, the importance of ongoing technical support and maintenance of digital equipment should also be stressed. The more teaching activities are dependent upon the proper functioning of ICT, the more indispensable it is that the proper functioning of such equipment be constantly maintained, otherwise teachers, students and others involved will lose interest. However, the finances made available to schools, when such finances exist, merely cover the purchase of equipment, not running costs. Alongside economic issues, there are also organisational aspects at play owing to the complete fragmentation of technical assistance provision (each school has individual contracts) which renders the management thereof extremely difficult and costly. School leaders are trying to craft a single supply system but, at the time of writing, no system has yet been set up.

1.6 Future developments

In 2014-15, CTP Fornovo received financing for three L2 Italian courses in the Parole in Gioco 4 project. In addition, it has requested specific resources for two new initiatives:

- a 'virtual classroom' trial on SELF, the regional e-learning platform (via Moodle's BigBlueButton)[17],
- the creation of a new ICT platform for the sharing of teaching materials amongst teachers that can be remotely accessed by students who are unable to be physically present at lessons.

Both initiatives were developed for students living in remote areas, with transport difficulties or reduced mobility etc. for whom it would be difficult to be in physical attendance. To meet the needs of students with time pressures, e.g. those who work during the day, the CTP is considering running an evening course with a virtual classroom at a time when most CTPs are closed (CTP Fornovo closes at 20:00). Courses run in mountainous areas have even more time constraints as they are often held in public school buildings which either close on weekday afternoons or remain open only until 16:00 or 17:00. Therefore, the current course timetables are not based on the students' needs but on the availability of the school buildings. An alternative would be to use facilities made available by the municipality but there are no guarantees that such premises are available and contain the necessary equipment.

Remote participation may also be a viable option for students who have to temporarily return to their country of origin or travel elsewhere due to family reasons or work commitments and who do not want to waste all of the time and effort that they have put in to being physically present at lessons. In fact, CTP has already received such requests.

The virtual classroom will not merely benefit students but will also allow for the elimination of certain costs linked to traditional classroom teaching, i.e. tutors, caretakers, photocopying, and will thus enhance the learning offer especially for foreign students with an adequate level of schooling who can use ICT autonomously.

[17] CTP Fornovo launched the trial in May 2014 as presented in Bologna on 9 June.

2 Tabula project: tablet use in L2 Italian courses in Turin for adult and young immigrants with little or no schooling

2.1 Introduction

This chapter outlines the Tabula project, also financed by the EIF, which took place in five CTPs and three voluntary associations in Turin, during the 2013-14 academic year. Tabula ran laboratories for tablet use, in this case the Apple iPad, in L2 Italian courses aimed at foreigners with little or no schooling. 133 students, most of whom were adult females, attended the laboratory sessions, with over 50% of students hailing from North Africa (Morocco and Egypt). At present, no other project in Italy involving tablet use to improve the literacy of L2 adult students can match the size and structure of the Tabula project.

The content of this chapter has been drawn from several sources: the preliminary presentation of the Tabula project by the project coordinator at the workshop held in Bologna on 18 October 2013; interviews with teachers and facilitators and the author's observations at meetings held in Turin on 2 and 3 April 2014 at CTP Saba, CTP Parini and the premises of the partner associations; the wealth of documents produced during CTP Saba's project activities, including teacher Paola Tarino's logbook; the final report on the Tabula project submitted to the Ministry of the Interior; presentations and discussions held during the two-day training course held on 24 June 2014 at Ervet's Bologna premises and on 25 June at CTP Modena.

The author wishes to thank the following people for their involvement in the aforementioned activities and contribution to the writing of this chapter: teachers Rocco de Paolis (CTP Parini), Paola Tarino and Maria Rosa Ferrarese (CTP Saba); teachers/tablet facilitators Isabel Gonzalez Diez, Stefania Iannucci and Roberto Giorgi; Massimo Arvat, Sergio Fergnachino, Corrado Iannelli and Angelo Artuffo of Videocommunity; Lucia Perona and Massimo Negarville of Formazione 80.

2.2 Background, objectives and organisation of the scheme

Initial iPad exploration with students with little or no schooling

The Tabula project was set up in Turin, a large city where adult foreigners who are either illiterate in their mother tongue or have a low level of schooling in their countries of origin form an ever growing proportion of the immigrant population. Their attendance of Italian language classes (L2 Italian) –mostly designed for already literate students- is the cause of specific problems which are not easy to solve. A 20% drop out rate among L2 course participants highlights the challenges at play. One of the drivers behind the Tabula project was the need to explore and set up new, effective

and motivating L2 Italian courses aimed at foreigners with little or no schooling, of whom there are probably a significant number throughout Italy.[18]

Another driver behind the project was the observation that the use of ICT devices is growing in all areas of daily life and this tends to further enhance the marginalisation and exclusion of the socio-economic and culturally under-privileged. Foreigners with little or no schooling feel even more excluded as they have almost no ICT knowledge or skills, bar familiarity with some mobile phone functions and, sometimes, Skype. This means that they cannot manage simple, every-day, automated functions such as using a machine to pay to park at a hospital and therefore have to ask their children or other family members for help.

With this in mind, during a literacy course held at CTP Parini in Turin in early 2012, teacher and CTP coordinator Rocco de Paolis began to use his iPad (a well-known tablet device manufactured by Apple) in the classroom on an experimental basis. Some students were most intrigued by this and made overt requests to use such devices in the classroom.

Over the course of several months, tablet use in the classroom followed an explorative and 'minimalist' approach with a slow pace allowing ideas to further take shape. In addition to classroom activities, de Paolis spent a lot of time on the Internet researching similar trial schemes that had been set up in different parts of the world and pinpointing apps which could potentially be used. Young colleagues observed and sometimes participated in the classroom activities and their contribution helped to underline the important role played by facilitators. Furthermore, dialogue with Michela Borio and Patrizia Rickler[19], CTP Parini colleagues and experts in teaching L2 Italian to foreigners with a low level of schooling gave rise to ideas on how to structure teaching programmes that would fully exploit tablets' potential (see section 2.4).

Given the very positive feedback from students, who showed great willingness to use the tablets, and the gradual identification of the devices' potential, even for students with a low level of schooling, the CTP teamed up with the Turin-based Formazione 80 association and other partners in November 2012 to craft and present a trial scheme targeting students with little or no schooling. The project was given the name Tabula and sought finance under action 1 of the 2012 EIF annual programme. The project (n. 103011) was approved, granted €130 000 in July 2013 and became operational in the 2013-14 academic year.

Project objectives, organisation and participants

The Tabula project sought to use iPads in the teaching of illiterate or semi-illiterate adult foreigners with two main objectives:

[18] A post dated June 2014 on tuttoscuola.com refers to an estimate of 200 000 illiterate adults currently living in Italy. The OECD's PIAAC (Programme for the International Assessment of Adult Competencies) revealed that 5.6% of the Italian population are classed as 'illiterate' (below level 1 language skills). According to the latest ISTAT figures, there are currently 3.5 million foreigners of working age (16-65 years) residing in Italy. 5.6% of 3.5 million is around 200 000.

[19] Authors of 'Piano piano. Percorso di avvicinamento alla lingua italiana per adulti stranieri', published by Guerini Associati.

1. assist the development of reading/writing skills by enabling students to be more pro-active and motivated to study, thus enhancing their involvement in the learning process and, hopefully, improving their literacy level;

2. develop students' digital literacy in a fun and friendly environment.

De Paolis stressed the symbolic importance and motivational value of a scheme expressly targeting those who are often thought of as 'the lowest of the low', i.e. illiterate immigrants, by making available to them a device which they would not have easy access to otherwise. The intention was to prove to them and the world that being illiterate does not mean being incapable but merely that there are different learning mechanisms at play. The two Tabula project objectives converged in a linguistic and digital literacy course in which tablets were both a means and an end and increased familiarity with the iPad went hand in hand with language learning.

In order to attain the aforementioned objectives, five CTPs and three private sector associations were involved in the project. Four of the seven CTPs operating in Turin were involved in Tabula: CTP Parini (district 7), CTP Saba (district 5), CTP3 Turin (formerly Drovetti) and CTP Gabelli (district 6). The other CTP partner was CTP Pirandello based in Moncalieri (near Turin). The three private sector organisations involved were all based in Turin:

- Terremondo cooperativa sociale a.r.l, who supplied the educators, and volunteer network ASAI (Associazione di Animazione Interculturale; http://www.asai.it/) jointly organise Italian courses for foreigners with an emphasis on young people and women. They managed two of the Tabula trial schemes which ran in parallel to those held at the CTPs;

- Formazione 80 (www.formazione80.it/), an association active in research and adult education projects, wrote and submitted the project proposal and provided tablet experts to serve as facilitators;

- Videocommunity (http://www.videocommunity.net/) is a social promotion association with expertise in social and cultural communication, storytelling and education, enabling users to produce their own media content. Videocommunity supplied multimedia facilitators and produced the Tabula project video documentation.

These players were chosen in order to verify the viability of the project which was to be rolled out in different areas where courses for immigrants had been run for many years and there is a high number of adult immigrants with little or no schooling attending elementary level courses (pre A1 and A1).[20] In addition, teachers, educators, experts and researchers with long-standing experience were sought out. They had to be able to handle complex relational and teaching circumstances, be open to innovation and interested in working together on the best way to manage learning processes and how to improve the quality and results thereof.

The project consisted of 20 experimental 'laboratory sessions', each lasting 2.5 hours (a total of 50 hours), within the framework of the traditional literacy courses run by the 5 CTPs and ASAI-Terremondo. During the laboratory sessions, students were guided and assisted by their teachers

[20] See footnote 4.

and the facilitators in gaining familiarity with and using the tablet as part of their L2 Italian course. Given that most of the courses offered run for a whole year (180-200 hours total), the Tabula project was not intended to be a course on tablet use but sought to introduce the device gradually and partially, even in the laboratory sessions. This decision was taken due to the project's organisational and economic limitations and the understandably cautious attitude befitting of a trial scheme.

Trial activities were scheduled to take place twice in each location (in two modules) so as to garner practical experience for future improvements and to check and compare results in different conditions with different students. A total of 12 sets of laboratory sessions took place: 6 sets between October 2013 and January 2014 and a further 6 between February and May 2014. Table 5 provides an overview of the laboratory sessions and the number of participants.

Table 5 - Tabula laboratory sessions and participant numbers

Tabula laboratory sessions							
	CTP Parini	**CTP Gabelli**	**CTP Saba**	**CTP3**	**CTP Moncalieri**	**ASAI**	**Total**
Students enrolled	20	22	26	24	17	29	138
Students attending	20	20	25	23	17	28	133

Source: Tabula project

In the CTPs, the first Tabula module (autumn) featured preA1 and A1 level students in the initial phase of the 2013-14 Italian courses. In the second module, the students (a different group) were at a more advanced stage of their year-long course. For both modules, the CTP courses included two 2.5-hour lessons per week with tablets (on consecutive days or alternate days depending on the location and the modules) over a 10-week period. Given that the literacy courses usually consist of 10 hours of teaching per week (spread across 4 days), the Tabula laboratory sessions accounted for only half of the total teaching time over the trial period.

As for the ASAI-Terremondo course, the autumn trial was conducted at ASAI's facility in San Salvario (a multi-ethnic neighbourhood in the city centre) and involved a group of young immigrants, mainly 16-17 years old. The Tabula laboratory sessions were run as a specific literacy exercise to supplement the course they were attending at CTP Parini. The spring trial was conducted at the ASAI facility in Porta Palazzo (another multi-ethnic neighbourhood near the city centre) with a group of parents whose children attended an after-school club run by ASAI at the same location.

The project sought to involve immigrants who are illiterate in their mother tongue or have a low level of schooling and who had explicitly stated that they were willing to participate in a trial scheme featuring ICT devices.

Except for the first ASAI module's group that was made up overwhelmingly of young people, the participant profiles for all of the other courses were mixed. The lion's share of the laboratory session participants were women (68%), predominantly mothers between the ages of 30 and 50. The most popular age group amongst the male participants (32% of total participants) was 16-19 years (22 of

42), and only 9 were fathers. 18 different nationalities were represented with 51% of participants (mainly women) from Morocco, 13% (mainly men) from Egypt and 9% from Nigeria. Over a third of course participants (49 students) had been in Italy for under a year and 62% of students had been in Italy for less than three years. Some 68% of participants had never been to school or had five or fewer years of schooling. This was the case for 80% of female students but less than half of the male participants. 83% of participants were housewives or unemployed whilst the few who stated that they were employed (15 women and 7 men) were domestic helpers, labourers or shopkeepers. Some of the participants had already attended primary level Italian language classes (A0) whilst others had good oral skills after having resided in Italy for many years. However, most of the participants spoke little or no Italian.

Teachers, facilitators and teaching coordination

There were three main groups involved in the organisation and development of trial activities for the CTP and ASAI courses:

1. L2 Italian teachers (literacy teachers)[21]
2. L2 Italian teachers with specific expertise in tablet use (tablet facilitators)
3. teachers/facilitators with multimedia expertise (multimedia facilitators)

These three groups worked together to craft and then implement the teaching programme, focussing on:

- Italian language teaching materials drawn up by the literacy teachers, all of whom had a wealth of experience in working with the Tabula target audience;
- language learning applications (apps) available on tablet devices which were identified by tablet facilitators. This particular group had a good level of experience in teaching adults with a low level of schooling and a high level of digital skills which had been further enriched by their involvement in preliminary tablet trials at CTP Parini;
- apps for creating and sharing content (videos, photos, comics), managed by the multimedia facilitators, who may not have had L2 Italian teaching experience but did have a wealth of technical know-how and experience in making socially-relevant videos with young immigrants.

The literacy teachers were present for all 50 hours of the laboratory sessions whilst the tablet facilitators were in attendance for 40 hours and the multimedia facilitators for 20 hours. At least two of these figures were present at all sessions. At 16 of the 20 sessions, the literacy teacher was supported by the facilitator and all three members of the teaching staff were present for four of the sessions.

A total of 19 individuals were involved in running the laboratory sessions: 12 literacy teachers, 4 tablet facilitators and 5 multimedia facilitators.

Even though some teachers had no specific experience in teaching with ICT, they showed a willingness to participate in the trial scheme and the prospect of having facilitators to provide classroom support meant that prior ICT training was deemed unnecessary. The iPad's basic

[21] CTP teachers received extra pay for 20 hours' participation in Tabula coordination activities.

functions were explored during the initial teaching coordination phase and each app used in the trial was tested beforehand, with support provided by the facilitators. It was important that teachers understood the specificities of the software, were familiar with the interface and its use vis-a-vis the learning objectives and could evaluate its use, even in terms of working time.

As alluded to previously, a teaching coordination team was set up at the outset of the Tabula project and involved all of the laboratory teaching personnel (with contact persons appointed for each group). The team was also open to other interested parties such as teachers of different classes and from different schools.

The coordination team's activities were fundamental to the running of the project. Given the highly experimental and novel nature of the trial and the number of individuals involved, the setting up of an efficient system to provide support and facilitate the exchange of information and ideas was of high importance. This was achieved by the coordination team, which focussed on organisation, and by the implementation of a very structured method during the trial period.

The coordination team's objectives were: plan the teaching programme and units using a shared methodology grid; check progress and consider problems which may arise in laboratory sessions; select applications and analyse the potential and limitations of tablet use in adult education; compare and analyse the outcomes of the different laboratory sessions; strengthen the skill set of teachers and facilitators. Following the drawing up and sharing of the work method and teaching programme and the dedicated training activities, the coordination team met on a roughly monthly basis to discuss monitoring and support. Four training sessions took place (10 hours in total[22]) with a view to strengthening the skills of the participants and creating a common knowledge and skill base for literacy teachers and facilitators.

1. One session was led by Michela Borio and focussed on teaching characteristics, needs and methodologies vis-a-vis students with a low level of schooling, how to craft units using the grid developed specifically for tablet use and how to draw together the different laboratory activities.
2. Massimo Arras, a teacher at a Turin primary school, led another session which looked at his experience in working with an iPad over the last few years. He is an expert in the educational use of videos and the creation of iPad support tools.
3. Experts from the Turin Apple Store were invited to lead a session on iBooks, a free application distributed by Apple for reading and managing e-books on iOS devices. The session placed specific emphasis on the potential for writing digital books.
4. The final session was led by Rocco de Paolis, Michela Borio and Patrizia Rickeler and focussed on the methodological structure and the project implications.

Teaching method and approach to tablet use

On the basis of the pedagogical approach and the material created by Michela Borio and Patrizia Rickler (most of which appears in 'Piano Piano' and is well-known in Turin CTPs offering courses for students with a low level of schooling), the Tabula teaching coordination team drew up a teaching

[22] Feedback from Tabula participants suggests that more time should have been allocated to this type of training.

plan proposal based on the tablet being perceived as an instrument to supplement the 'normal' literacy programme and grafted into the activities in the teaching programme. [23]

The programme featured eight teaching units[24]which were broken down into lessons. Two grids were drawn up for each unit with one featuring eight detailed columns (used for preparing each laboratory session) and the other containing only the four columns referring to the most important teaching coordination aspects. The 'short' version contains: 1) the unit title; 2) the learning objectives in terms of communication skills; 3) literacy skills to be acquired; 4) applications used to attain the learning objectives.

Table 6 (below) shows the grid for the 'personal identity' teaching unit as taught at CTP Parini.

The grids explicitly show the guiding principle behind the Tabula project, i.e. teaching, not technology, is the prime focus of classroom activities. Therefore, classroom activities, choice of tools and how and when to use them in the classroom should all be assessed through the prism of this principle. Clear and detailed learning objectives serve as an initial guide, before outcomes and critical aspects emerge from the running of the trial scheme. Indicating in detail the instructions for students as well as the objectives, the grids were created to serve as a guide for teachers and other teaching staff on running laboratory sessions for the first time and constituted a tool of great importance, providing great reassurance.

One outcome of the application of the principle is that tablets (or other ICT devices) are viewed as supplementary tools which are to be used alongside other teaching tools such as the blackboard, paper, pencils etc.

The grids played a very important role in developing a reference framework and common terminology for the parties involved in the project, clarifying the programme and objectives for each teaching phase and the project as a whole. Consequently, they complimented the organisational activities (coordination team, documents etc.) in facilitating efficient communication between all participants in the running of the laboratory sessions.

Table 6 - 'Personal identity' Tabula teaching unit grid - CTP Parini

Teaching unit: Personal identity	Communication aspects	Instrumental skills	Applications used
	Introduce yourself What's your name? My name is..... My name is..... Pleased to meet you!	Vowels, especially distinguishing between the sounds E and I, O and U	Explore the iPad's basic functions: turn on/off, use and become familiar with the device **Blackboard**: tactile blackboard featuring a range of colours and the option to delete or save work. The blackboard shown on screen replicates a traditional

[23] Hutchison, A., Beschorner, B. and Schmidt-Crawford, D. ("*Exploring the use of the iPad for literacy learning*" in The Reading Teacher Vol.66 Issue 1 pp. 15–23, 2012) refer to tablet use in adult literacy and call this approach "curricular integration", i.e. ICT use is closely linked to precise teaching objectives. This approach runs counter to "technological integration", i.e. technology use is less closely supervised than literacy exercises.

[24] The teaching units dealt with personal identity, nationality and background, physical characteristics, health and illness, the five senses, clothes, home and work. In the CTP courses, these units were spread across two modules with the first four units usually taught in module 1 and the last two in module 2. The module 2 students had already completed the previous teaching units without using the tablets.

	Greetings for different interlocutors at different times of the day Hi/Good morning/afternoon Good evening (formal/informal) How are you? Good, thank you	Presentation of double consonants (phonetic affinity) M/N, T/D, P/B Read syllables in grid	blackboard, creating a second focal point for students, who can use their finger or a stylus to use the app. **Alphabet Tablet**: the app functions as a magnetic board featuring all the letters of the alphabet, allowing the user to select letters and compose syllables. This application is ideal for instrumental activities.
	Place of residence Where do you live? I live in via/corso/piazza.....		**Google Earth**: support to be provided by facilitators the first time this application is used. This app allows students to give authentic answers to questions under 'introduce yourself' and was the first app to be used with an internet connection and for spatial orientation purposes.
	Background Where are you from? I am Moroccan Which country are you from? Morocco	Recognise and read words (two and three syllables) and basic sentences containing the relevant consonants.	**Projector**: use the zoom function for images and text on worksheets. Teaching units are to be presented via video projection. Very effective for concentration, maintaining students' attention and initial reading activities. The projector should be placed in a central position so that students can work individually on communication aspects and instrumental skills. Video projection is the starting point for the sharing of images and individual students' work.
	Date of birth and arrival in Italy When were you born? When did you arrive in Italy? Year/month/day Days of the week Months of the year	Take down dictation (two and three syllable words spoken slowly) and basic sentences containing the consonants shown above.	
	Age How old are you? I am.....years old		
	Phone number Numbers from 0 to 10		

Source: Tabula project

It should be noted that the app instructions and their uses described in the grids were modified over the course of the trial scheme, one purpose of which was to hone in on these particular aspects. The project's roll out over the two modules enabled the teaching of different classes at different times in their school programme. Therefore, it was possible to use a single app in different teaching units and activities or to try new apps if problems emerged with those used previously. This helped to pinpoint the best solutions for certain tasks, factoring in the personal skills and limitations of individual students.

Once the role of tablet use in teaching had been clarified, the tablets were handed out to students. Tablet use followed a consistent approach which was further defined on the basis of experience. The key components can be summarised thus:

- initial, predominantly free use with a view to acquiring the basic instrumental skills necessary to use the device (turning on, typing, moving icons, returning to the desktop etc.);

- gradual progression and parallel development of linguistic and digital skills, beginning with easy, intuitive applications for drawing and recognising and writing letters and moving on to applications to perform more complex tasks as part of a task series, e.g. take a photo, save or display it, add a comment, obtain an image from the internet, choose the presentation method (background, border) and then export and share;
- depending on skill level, increase opportunities for using the device's system functions such as camera, internet connection, search engines, Youtube, sharing platforms, iBooks;
- an effort to promote a mixture of group work[25] (in pairs or small groups) and opportunities for individual expression in all laboratory sessions, harnessing the different tablet functions.

Technological equipment

The following equipment was made available to each Tabula project partner:

- 7/10 wifi-ready tablets
- a printer
- a projector (where an interactive whiteboard or Apple TV are unavailable)
- a tablet-projector link cable (30-pin to VGA Adapter)
- An internet connection with wifi access (provided by the site)

A total of 55 iPad 2 devices were purchased and allocated as follows: 7 to each CTP, 10 to ASAI-Terremondo, 10 to Formazione 80 (devices entrusted to the tablet facilitators and one multimedia facilitator). The fact that the devices were made available to the partners enabled them to continue to use them outside of the Tabula project context, e.g. for other activities at times when the facilitators were not present and in the months following the completion of the modules.

There was no specific reason behind choosing the iPad other than the fact that the teacher who started the trial scheme at CTP Parini used his own iPad device. The iPad remained the device of choice following positive experiences with the tablet and the iOS applications available during the initial test phase. In addition, Apple products, including the iPad, are widely used in learning environments due to Apple's long-standing market presence in many countries.

Other devices, i.e. the projector, the interactive whiteboard and Apple TV, were also used for three key functions: showing in-class explanations on device and application use; facilitating collective reading through interactive projection of worksheets and other teaching materials, e.g. increasing font size, syllable selection etc.; sharing content produced by an individual student.

When assessing application choice, it must be borne in mind that hardly any applications have been developed specifically for use in adult literacy and that this remains the case at the time of writing. However, there are many drawing, writing, reading and counting apps aimed at children. Most of these were assessed and the only ones to be used were those either without child-specific functions, i.e. of relevance to adults, or those where the childish aspects (puppets, butterflies and other child-specific aspects present in the interface or feedback) could be rendered more 'neutral'. The other apps used in the Tabula project were more generic in nature, e.g. Google Maps, MyCalculator,

[25] Generally speaking, such activities are useful when introducing new tools or activities and when sharing feedback.

Penzu, Il Mercatino, and were almost always used for specific functions relating to clearly defined teaching objectives.

The apps which were deemed to be the most appropriate[26] at the end of the project are:

Abc trace	Google maps	Pic collage
Alphabet tablet	Google	Sand artist
Blackboard	Little Story Creator	Strip design
Camera	Pages	You tube

Apps which could be downloaded for free from the Apple Store were given precedence and only one app, used for making comics, was purchased at a low cost (€0.99 for 5 users). Almost all of the apps used in the Tabula project are also available on Android devices with the name and supplier being identical or very similar.

2.3 Teaching with tablets

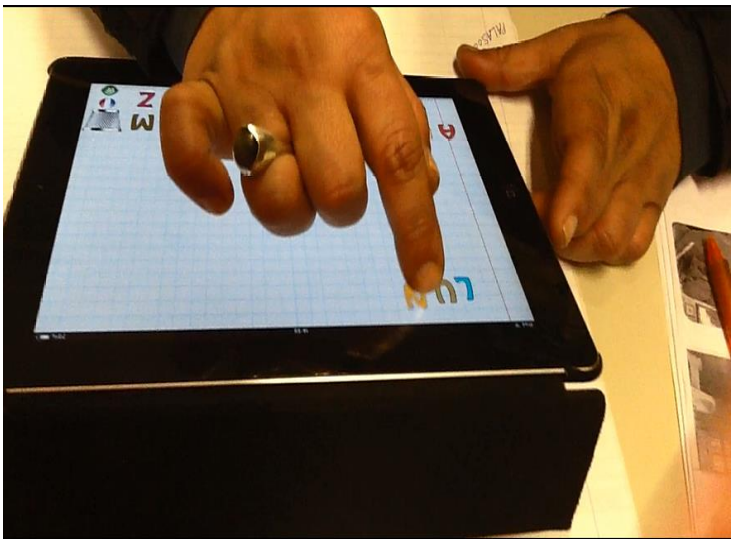
Having outlined the Tabula project background and resources, this chapter provides an overview, complete with a few examples, of the running of the laboratory sessions. Firstly, more detailed information is provided on how the approach to tablet use was implemented to attain the two-fold objective of developing linguistic and digital skills. The next two sections feature a description of the activities carried out using tablets and broach tablet-related problems, student feedback and the views of teachers and facilitators. Whilst the first section refers to all of the laboratory sessions, sections two and three hone in on CTP Saba which provided a wealth of documentation on all of its activities. The fourth section analyses Tabula laboratory sessions run by ASAI-Terremondo, where comic-strip creation was tested, with the first student group comprised of under-18s and the second group made up of parents. The stories outlined here were taken from classroom observations or were shared during interviews with the author of this report. The final section of the chapter focusses on the main problems that emerged during the Tabula laboratory sessions.

Introduction of and progress in tablet use

In all laboratory sessions, the iPads were presented to the students as a special "blackboard" or exercise book which served to assist them in various exercises in addition to the more traditional study tools, i.e. textbook, worksheets etc. In some laboratory sessions, the initial introduction to the device involved placing the tablets on the tables and, after explaining how to turn them on, the students were asked to explore the devices at their leisure. In other sessions, the initial focus was on sharing the device by asking everyone to touch it, write something on it and then take a photo before moving on to independent device exploration. In most cases, explanations on what the device is, how it can be turned on and off and how to use the icons involved the use of the projector.

[26] At the end of the project, the Tabula partners produced a document on apps and their basic functions. A copy can be obtained by contacting Isabel Gonzalez Diez (isabel.lavagnodiez@gmail.com), Stefania Iannucci (stefaniaiannucci@yahoo.it) or Rocco de Paolis (rdepaolis@hotmail.com).

In later sessions, the projector was used to give short lessons on tablet functions, e.g. the alpha-numeric keyboard.



To ensure a gradual progression in the development of digital and language skills, the first applications used, e.g. SandArtist, Blackboard, Alphabet Tablet (see photo), were used for elementary level reading and writing exercises. Some apps, especially the digital blackboard, were used repeatedly throughout the course. These apps enabled the students to practice and consolidate their instrumental skills, e.g. by creating images or graphical representations. Teachers stated that when given the option to draw in class, adult students generally tend to refuse because it is perceived either as a childish exercise or something that they are incapable of. Therefore, the Tabula literacy teachers and facilitators were quite surprised by the spontaneous interest students showed in this activity upon receiving their tablets.

Progress in iPad use enabled increasingly complex applications to be used, e.g. Pic Collage, for exercises which involved taking a photo, writing a comment, editing a photo (background, borders) etc. The camera function was used from a very early stage and took centre stage in all laboratory sessions. Photos and videos enabled authentic communication exercises to be set up in which students were actively involved and became actors in and producers of educational content. The internet was the source of much information: photographs and images of objects, people and places which aided understanding of the teaching units; photos and images used for a specific purpose, such as 'my home town', 'my country', 'the city where I live' etc. Google Maps was used from the outset as it enabled surprising results to be obtained even when relatively simple tasks were performed by students with a low level of literacy, e.g. copying the name of one's home town or home address from a passport and inserting it into the search field. In addition, this familiarised users with the keyboard and developed 'spatial intelligence'. Especially amongst young people, the internet was used to share created content via email and Youtube. Students' work was stored in image, flashcard and video files which could be used in other classes. This contributed to the development of shared knowledge.

In accordance with the 'curricular integration' approach (see note 23), tablets were not used as isolated devices or in completely separate activities. Tablets were always used in exercises led by the teacher which involved other individuals as much as possible and, as previously mentioned, made use of the traditional classroom study tools (blackboard, exercise book etc.). A recurring approach was used in lessons with a word (or letter or syllable) being read out and then written on the blackboard by the teacher before the students read it out, wrote it in their exercise book, on the worksheet and only then on the tablet. This reassuring approach is both familiar and well-established in school environments. Thus, tablets are used to reinforce exercises which have already been completed on the blackboard, in exercise books and on worksheets and introduce a degree of immediacy, authenticity and fun which was either lacking or very difficult to attain using traditional methods.

In hindsight, each tool performed different functions which complemented each other. The blackboard remains the primary common space, visible to all, which the teacher uses to write and provide explanations and attach sheets and other materials from which everyone can copy letters, syllables and words. Physical objects that teachers and students bring in from time to time for use in different exercises can be placed on the teacher's and students' desks. Tablets can be used for writing exercises and many other student-focussed classroom exercises. They can be used as personal tools but can also be shared in group or pair exercises or even connected to the projector (thus rendering the content 'public'). Exercise books and worksheets are predominantly private and used for exercises completed alone which are only seen by the teacher who checks and corrects them. Exercise books are the main bridge between classroom and the home as, unlike the tablets which had to remain at school (at least in the trial schemes conducted up to now), they can be taken home.

It was against this rich, diverse backdrop that the Tabula project took place, with its balanced use of different tools, and time frames and conditions for their usage in different lessons (and throughout the course), laying the foundations for the success of both the project and the use of tablets. This balance was struck and maintained by the method adopted and the skills of the parties involved. The following section focusses entirely on tablet-related issues, given that this was the distinctive aspect of the project, even though the other classroom tools and dynamics were certainly important factors.

Tablet use in module 1 at CTP Saba

The autumn laboratory sessions at CTP Saba were attended by a morning class of 14 students (almost all of them housewives) and 5 auditors.[27] They were between 26 and 60 years old, most of them from Morocco. The class was taught by two alternating teachers, both of whom were involved in the laboratory sessions. Tabula laboratory sessions began a few weeks after the literacy course had begun.

When students were first introduced to the iPad, they were given free reign to explore it. Possibly due to it being perceived as a familiar item, 'a large phone you can use to make phone calls, take pictures, write and use the internet', the students felt at ease when touching and using the device for the first time. Often, individuals who have never used a computer before experience a psychomotor block when faced with a mouse or a keyboard, but the tablet, and the fact that its use requires a mere touch, does not appear to have constituted a barrier for new users. One teacher commented thus:

> *"Having explained the most basic commands (screen colour of the blackboard, eraser, bin etc.) and shown how to use your finger to write, the students immediately began to write the words ERASER, PENCIL, BIN of their own accord. They had learned these words in previous lessons and they were also displayed in the classroom. From that moment on, the urge to write became both compelling and natural with some students writing their own name or nationality, others attempting to write the names of their husband or children and others formulating sentences to state their gender..."*

The time spent allowing students to freely explore the tablets was described by the teachers as "tactile, mobile and visual immersion in writing's potential to create simple, visually pleasing content using their fingers". Presentation emerged from the outset as a very significant driver in device use.

A teacher at CTP Saba summarised thus the first teaching unit, 'personal identity', taught in the autumn module:

> Proposed exercises: use digital blackboards (SandArtist, Lavagna Lite, Blackboard) to write, change font colour, delete, underline and draw.
>
> Exercises completed: digital blackboards used to answer the following questions: "Who are you?" What's your name? "Are you a man or a woman?"; face drawing; name writing; use of different colours of virtual chalk in drawing.
>
> Assessment: in the exploratory phase, teachers focused on ascertaining how students dealt with the device. Students were very motivated to write with their fingers, show their work to others and take pictures of each other whist working.

[27] According to European regulations, FEI-funded courses can only cater for specific types of students, e.g. not for asylum seekers or refugees, for whom other kinds of funding and courses are available. In practice, however, students group often end up being mixed, and in these cases some student are unofficially registered as auditors.

In line with the tablet use progression outlined earlier, the other five teaching units in module 1 saw the use of apps for various different exercises, as detailed below in the table taken from the CTP Saba reports:

Teaching unit	Exercises and applications used
Nationality and background	Very colourful alphabet table (Alphabet Tablet) for writing, moving and deleting characters; Calculator for writing figures; initial writing with keyboard exercises using Penzu; use camera to take self-portraits; create your own ID card using the self-portrait photo.
Physical characteristics	Use camera for photos and videos; show photos in sequence with Story Creator; use digital blackboard to draw and label body parts.
Health and illness	Use camera, show photos in sequence with Story Creator, add audio recordings; create a collage to document photo sequences with added captions using Pic Collage.
The five senses	Use Pic Collage to mime and describe the five senses Tactile and olfactory sensory exercise involving a game called "What am I touching? What can I smell?"
Clothes	Use Pic Collage to label items of clothing and describe how one is dressed using a full-length self-portrait photo; record shop roll play scenes. A useful activity, especially for verbal skill development, as students had to search for and learn specific words in order to make a purchase, provide information on the size of items of clothing, ask the price and then pay for goods.

Source: Tabula project

As previously stated, photos and videos caught the students' imagination from a very early stage and constituted multi-functional support resources throughout the Tabula laboratory sessions. In the later stages, tablets appear to have facilitated roll play exercises due to the playful feel of such exercises and their contribution to abstraction processes[28]. These activities are especially useful for oral learning but are often difficult to use in teaching students with a low level of schooling due to their limited abstraction abilities, e.g. putting themselves in someone else's shoes.

Willingness to be photographed or appear in a video was not taken for granted, in light of the cultural diversity of the students. At the outset, the role of photos and videos in the laboratory sessions was explained to the students who were asked to sign a release form[29]. The initial reluctance shown by some students soon faded away due to increased sense of protagonism (empowerment) as a consequence of familiarity with the device and thanks to the literacy teacher and facilitators, who sought to emphasise these aspects and provide reassurance.

[28] If being able to change one's viewpoint can be considered as part of one's abstraction abilities, then it can be stated that the separation ('objectification') of observer and observed reality that occurs when taking a photo or recording a video on a tablet (or other device) contributes to developing such skills.

[29] In some laboratory sessions, this was done with assistance provided by cultural mediators in order to ensure that the explanation had been correctly understood. For some of the minors attending the ASAI laboratory sessions, it was necessary to obtain the signature of the Municipal Councillor, their legal guardian.

Generally speaking, all of the students were able to quickly and independently learn the main tablet functions by helping each other and thanks to the personalised assistance they received from the classroom facilitators. Some students were in great need of such support every time a new app was introduced or a software update was necessary. The initial high level of concentration and interest shown by the students in tablet learning remained constant throughout the trial scheme and is one of the clearest signs of the project's success.

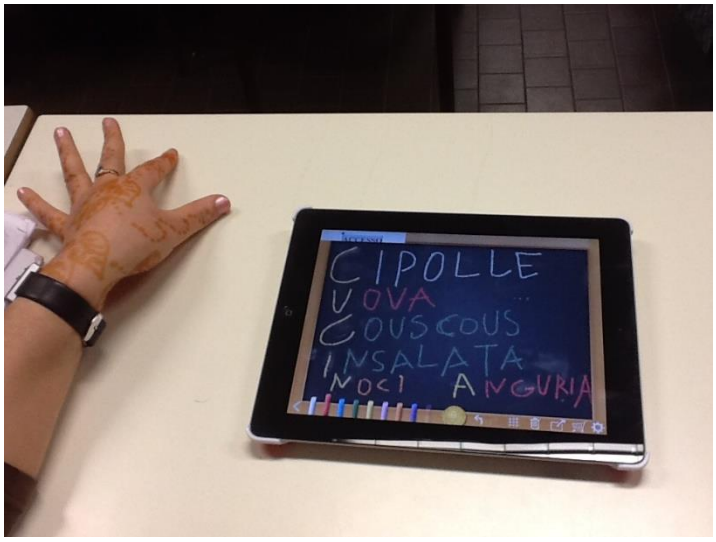
Initial use of the digital keyboard, i.e. switching between alphanumeric and numerical keyboards, obtaining capital letters, correct use of the space bar and the return key, caused the most difficulties. The same problems arose, but with different students, in module 2. This time, however, the difficulty in obtaining a capital letter on the keyboard was used as a chance to introduce a new case and start reading upper case letters.

In module 1, the tablets were also used for supplementary activities. The teachers at CTP Saba created a word list featuring simple, two-syllable words linked to images for use in reading exercises. They also used an iPad connected to the projector to display and zoom in on letters and syllables. A group of students produced a storyboard entitled "Arrivare a scuola" ('Getting to school') by taking photos and putting them in a sequence and adding brief dialogues and descriptions to show their journey from home to school. This exercise empowered the students to take centre stage (taking pictures of themselves, their surroundings and different objects), structure a daily experience, revisit photos of an event and hear themselves speak.

Developments in module 2 at CTP Saba

Tabula module 2 began at CTP Saba half-way through the academic year with a different class, this time taking place in the evening. The particularly lively learning atmosphere which emerged in these laboratory sessions led to the teachers describing it as "sociable and sometimes effervescent".

Tablet use was seen as less of a novelty than it had been in module 1 given that some students (friends, parents or colleagues of module 1 participants) were aware of the experiences of their module 1 counterparts. Word had quickly spread and this generated interest and very high expectations. Given that these students had already been attending lessons for several months, they had attained a higher level of learning independence and reading and writing skills and had more developed relationships with each other and the teaching staff. In module 1, teachers and facilitators were able to pinpoint the most appropriate apps and were therefore more confident in using them and providing support for iPad use. These circumstances and the presence in the group of a minor and a few jovial, out-going young women who were willing to play with mime, gestures and words facilitated more complex and in-depth teaching activities. Every-day events were recreated in a classroom context to construct dialogues, conversations on specific topics, scenes which could be photographed and filmed and then watched back, allowing students to hear and see themselves and feel like active participants in learning.



The opportunities presented by the iPad were fully capitalised on. iPads were used to write in the sand or on a board with coloured chalks which don't dirty the hands (stylus use was abandoned at an early stage).[30] The iPad was also used as a camera with a large screen facilitating focus and as a multimedia notepad for collecting text and photos with which to make creative, personalised collages.

For example, the following activities were part of the 'home' teaching unit at CTP Saba: digital blackboard with the names of an apartment's different rooms; creation of acrostics; brainstorming of pros and cons of living in a house; sticking post-it notes bearing the names of pieces of home furniture on photos; reading and understanding signs, including in common spaces; make a public service-announcement-style advert promoting separated waste collection, using the school's containers and bins.

The teaching units chosen for the trial (home and work) and the activities planned by the teachers and facilitators proved to be excellent in promoting different strategies and a gradual approach to tablet use amongst students. Each app was thoroughly explored in order to find authentic material which was appropriate in form and content for the attainment of the learning objectives. Teachers' feedback on the use of specific apps is shown below.

> *"Sand Artist met with approval as it allows all written words to be reviewed letter by letter, thus bringing the words to life. It is simultaneously tactile and visual, static and dynamic. The tactile Blackboard app was ideal for composing and saving acrostics relating to the home and its rooms. The word CASA ('home') was written vertically in white and other words written vertically in different colours formed a simple, complete, aesthetically pleasing creation. Pic Collage was used during the whole trial period and proved to be an excellent resource for the creation of simple collages, featuring images with text and dialogue, word brainstorms and photos with captions all on one screen."*

The opportunity to customise one's work proved very popular and was often made use of. The students' collages differed in terms of style, choice of images, their layout and the screen size. Whilst iPads were used predominantly on an individual basis, there was one occasion where the devices were used in pairs for a two-way dialogue exercise which necessitated screen sharing.

Great interest was shown in the possibility to interact with authentic photos taken by the students themselves, further increasing their motivation, enthusiasm and willingness to participate and interact with each other. Reordering a sequence of photos helped students to reconstruct the different elements of an activity and document the words and phrases they had learned.

[30] Initially, some students opted to use the stylus for fear of dirtying or ruining the screen by touching it too much. Once they realised that such fears were unfounded, they began to use their fingers.

The use of internet-based multimedia resources was another way of "bringing the outside world into the classroom" as one student aptly put it. Street View was used to enable students to view, and then show their amazed classmates, a photograph of their home. This allowed the students to provide more information on their homes, explaining what they keep on the balcony, which was their front door and which shops were nearby. This was a brand new way of sharing information on one's private life, seeing as it is impossible to physically visit each student's home.

ASAI laboratory sessions attended by young migrants and parents

Escalating political and military tensions in North Africa and the Middle East have led to a notable increase in the number of minors from these areas coming to Italy, with many of them travelling as far as Turin. Most of these minors have attended school for a few years, but in very precarious conditions: repeated interruption or suspension of school activities, much internal migration before emigrating, constant turnover of teachers, demotivated teachers, security problems etc. As a consequence, they are often barely literate. Tabula invited ASAI-Terremondo, which had specific experience with such groups, to organise laboratory sessions for 14 students aged 16 and 17 who had just arrived in Italy from Egypt or other African countries.

The laboratory sessions were held between October and December 2014 with four 2.5-hour sessions per week taking place at ASAI San Salvario. Two sessions per week were run by two literacy teachers from CTP Parini. Coordination between CTP teachers and ASAI-Terremondo staff was possible even though the two groups ran slightly different activities: CTP literacy teachers saw tablet use as instrumental, especially early on, in producing audio-visual material to make vocabulary exercises more lively and fun. ASAI staff focussed more on empowering the students by honing in on language learning and previously created content, i.e. the comic book stories.

From the very first laboratory sessions, students showed great interest and a good level of skill in using the digital devices and this posed some challenges for teachers and facilitators. For example, all of the students wanted to continually use Facebook with many of them having an account with their own pictures as well as those of relatives and friends[31]. It didn't take long to observe the positive effects of allowing students to share their own content on Facebook: it motivated them to focus on the quality of their work and make corrections and even appeared to satisfy, in part, their desire to communicate and express themselves, a desire felt more strongly by younger users. The decision was made not to restrict Facebook use, but to channel it to the greatest extent possible towards these objectives by encouraging students to post their classwork, copy photos and other content from Facebook and use it for various classroom exercises, especially storytelling.

This laid down the foundations for an exercise that had been scheduled from the outset: use an iPad to create a comic book story. It was thought that comics, an art form appreciated by young people the world over, would enhance communication, expressiveness and creativity and thus facilitate

[31] The problem of limiting time spent on Facebook and inappropriate internet browsing, an issue for young and 'difficult' students, was managed by laying down rules, setting 'good' internet exercises which were highly motivating and challenging (and thus left few opportunities to do other things), promoting the use of students' personal devices (smartphones) to publish and share their work (in any case, this was something that they tended to do of their own accord). In the brief laboratory sessions organised for CTP Parini students after the Tabula course had finished (see text), free internet browsing time was limited to the final 20 minutes of each session. No specific problems were encountered.

language and digital learning. In reality, none of the young people involved had any familiarity at all with comics, although the students showed willingness to participate and the desired effects were achieved.

As a preparatory activity to the comic strip and 'talk about yourself' exercises, several exercises on how to edit a photo were set, involving taking a photo, adding extras both 'physical' (beard, wig, glasses) and decorative (symbols, other photos, various graphics), editing colours etc. Teaching staff played a key role in helping some students (notably those of Arab origin) to overcome their reluctance to participate and enabled them to form an initial personal introduction on the basis of the choices they had made.

The numerous comic strip creation apps that Rocco de Paolis had assessed appeared to be too complex for students with a low level of schooling due to the literacy and technical skills required to use them. However, Massimo Arvat (Videocommunity facilitator) crafted a gradual approach based on photos taken with a tablet, other materials and use of Strip Design and Comic Book apps which proved appropriate for students with elementary linguistic and digital skills (as was proven in the second set of ASAI laboratory sessions). Once these initial difficulties had been surmounted, iPad use "blossomed in the students' hands", to quote the teachers. The opportunity to share a personal introduction encouraged richer, deeper communication which led to the emergence of further language and digital learning requirements. The laboratory sessions were very well attended (an unusual occurrence) with students staying behind for hours after sessions to finish work they had started. The stories created by the students referred to their everyday school lives in Turin as well as personal experiences linked to their arrival in Italy, a very dramatic event for some. Two such stories were those presented by two young Egyptians: one included photos of his cousin who had been killed in the protests in Tahrir Square, Cairo, presenting this as the main reason why he did not want to go back there, whilst another told the story of his journey as an illegal migrant crossing the sea on a cargo ship.

After the ASAI laboratory sessions ended in January 2014, the students completed courses at CTP Parini or enrolled for other training courses and, upon great request from the students and in order to ensure continuity with regard to tablet use, Rocco de Paolis organised a brief series of laboratory sessions involving further tablet exercises. Following their fruitful partnership in the Tabula project, the two organisations teamed up again in late Spring to contribute to the organisation of a neighbourhood party promoted by ASAI.

In order to ascertain whether the comic strip activities would be effective and of interest to older students, ASAI decided to repeat the activities in module 2 of the Tabula L2 Italian course with a group of 15 parents (predominantly mothers) of children attending after-school clubs (one of the many activities organised by the association). This time around, the comic book activity topic was food, one of the final topics on the education programme, and students were asked to produce a recipe. For this activity, homework and research needed to be done at a specific outside location, i.e. a place where pizzas are made. During these exercises, the tablet served as an exercise book, notepad, camera, recipe book and a comic book album. Photographs taken by the students were firstly printed out to allow handwritten comments to be added. The photos and text were then assembled and digitised using the Strip Design app before being printed and the finished comics presented to the students. As was the case for other activities, in addition to literacy progress there

was also a significant increase in parents' participation in their children's activities at ASAI, requests to volunteer to clean the school, organise events etc.

Problems and critical issues relating to the laboratory sessions

As previously stated, the tablet exploration stage was easy for some students, mainly the younger ones, whilst it was not so straight forward for the adult students. The biggest difficulty was writing with the tablet's virtual keyboard, which proved complex and tiresome at times. Other difficulties emerged when new apps or functions were introduced, with a certain 'breaking-in' time necessary. However, these problems were overcome.

Even though the teachers had the education programme grids, it was not always easy for them to identify the correct exercise to set the students and choose the applications which were appropriate for both attaining the language learning objectives and improving the students' command of the device. As shall be explained later on in the document, the trial scheme was an ongoing experiment requiring an open-minded approach to learning on the part of the teachers too.

Another hurdle was the fact that existing apps had not been developed for use by illiterate adults or adult learners with low levels of schooling. Therefore, it was very difficult to find and test appropriate apps. In the test phase, this was an advantage as the teachers had time to test out the apps and ascertain their potential. In spite of this, there were still several issues to contend with.

For example, with the Alphabet Tablet app it is very easy to drag and move letters to form words or delete them if a mistake is made. However, numbers are not shown as figures and, seeing as the original version is in English, there are no accented vowels (the Italian version is only available for a fee). The majority of apps are in English or other foreign languages, therefore they contain spell checkers which mark words as incorrectly spelt if written in Italian or display messages and letters in the other language.

Given that the lion's share of the apps used are aimed at children, the interface and feedback are very playful and child-friendly, e.g. a puppet applauds when the correct answer is chosen, and are not appropriate for use by adults, who react negatively to such features.

In addition, the drawback of using free apps is that adverts may appear whilst the app is being used and not all apps are available for free, although the purchase price of the paid apps that were tested was always very low.

Looking beyond the technical limitations, there were some activities which required the presence of either a facilitator or a tutor in addition to the teacher, to ensure that students received individual support. Generally speaking, this was necessary whenever new apps or system functions were introduced and the first time that students were asked to use the internet to find resources or use more complex apps, e.g. Street View. It can be difficult to ensure that teaching assistants are available, even partially.

Internet browsing, even when great care is taken, can produce unexpected results[32], be they pleasant or unpleasant, which need to be managed by the teacher and facilitators.

[32] During an exercise in module 2 at CTP Saba, two students inserted the word 'lisca' (fishbone) into a search engine and were exposed to several images of women in a state of undress, because Lisca is also the brand name of a lingerie producer. The two female students, both adults and mothers, were not overly upset by this.

Lastly, due to device availability constraints, tablets could only be used during lessons and not taken home to be used to complete exercises or activities in students' own time. Consequently, Tabula organizers stated their intention to develop and offer to students a tablet loan service.

2.4 Outcomes for students and implications for teachers and teaching approaches

The Tabula laboratory sessions were subject to the standard checks for such teaching activities. The reduced teaching time (in comparison with the annual teaching programme and the potentially lengthy total learning duration)[33], the experimental nature of the laboratory sessions and the methodological complexity of assessing the effects of tablet use on learning mean that extreme caution is advised when linking the outcomes of the aforementioned activities to tablet use. In order to measure the results of the Tabula project, several different aspects of significance for the project objectives were identified by the teaching staff and observations were recorded. The observations were then provisionally placed into categories by Michela Borio and Patrizia Rickler, as shown in table 7 below.

The table includes a section on the implications for teaching quality although this section is not shown here as, at the time of writing, the findings require further on-site testing and improvement.

On the basis of this classification, the teaching unit grid (see Table 6) was improved with the addition of columns to allow teachers to separate analytical observations and device use descriptions which had previously been placed in the single column on apps used in the lessons.

Table 7 - Positive implications for students of tablet use in the classroom

GENERAL COGNITIVE ABILITIES	ALPHABETICAL SKILLS
• Increased ability to handle abstraction processes • Improved logical thought structuring • Initial metalinguistic reflection • Ability to learn: monitoring and self-correction • Enhanced concentration abilities • Enhanced problem-solving abilities • Others	• Enhanced ability to trace: fine motor abilities, perception of shapes, spatial orientation • Reinforced understanding of the link between written and spoken language • Improved understanding of the concept of abstract "writing": tactile, visual, mobile • Increased ability to learn literacy skills • Opportunity to use authentic content for functional reading (signs etc.) • Others

[33] It should be remembered that language learning amongst illiterate students requires much more time. In Germany, L2 language courses have a duration of 800-1,000 hours.

LANGUAGE/COMMUNICATION SKILLS	SELF-EMPOWERMENT
• Motivation to communicate • Improved vocabulary • Increased ability to communicate/use basic language functions • Motivation to read and write • Reference to authentic material • Opportunity to shoot videos: improved awareness of phonetics, opportunity for self-correction	• Increased self-esteem • Emphasis placed on knowledge and experience • Increased independence • Motivation to be creative and personalise one's work • Enjoyment of being at school and having fun whilst learning • Acquisition of transferable ICT skills (useful for using ATMs, self-service machines, mobile phones etc.) • Discovery of other skills; drawing, drama etc. • Development of the ability to socialise and cooperate • Strengthening of one's own cultural identity • Opportunity to come into contact with other cultures/intercultural awareness • Others

Source: Progetto Tabula, "Il tablet in classe – Ricadute positive", M. Borio & P. Rickler

The following section contains analysis of the outcomes for students, in step with the content of the above table, but, owing to the purpose and nature of this report, with a slightly different focus[34]. The section of the table referring to the implications for teaching quality is analysed in section 3.5.

Self-esteem and motivation

The Tabula project organisers agree on identifying the symbolic value of introducing tablet devices and refer to the feel of the laboratory sessions as 'modern', 'motivating students and making them more receptive', a break from the usual perception of school as being old-fashioned, boring etc. Access to and use of new devices and state-of-the-art technology, much sought after by their children but rarely available at home and even less at school, was of fundamental importance by boosting the image/status of mothers in the eyes of their children. These aspects contributed from the outset to increasing the self-esteem and motivation of the adult students before they had even started to learn how to use the device.

[34] The 'self-empowerment' column roughly corresponds to the content of section 3.1, 'self-esteem and motivation'. The 'General cognitive abilities', 'Alphabetical skills' and 'Language/communication skills' columns are expounded upon in section 3.4. This report also contains analysis of the effects on participation (3.2) and on digital literacy (3.3).

The opportunity to personalise the learning dynamics by including emotive-affective aspects clearly emerged as a key factor in the success of the project. Seeing, recognising and listening to oneself in a photo or video featuring one's name or words that have just been learned reinforces learning in a manner which is difficult to achieve when 'my name is....' is merely a phrase written on a piece of paper with no associated pictures.

The personalisation of icons and presentation emerged as strong and unexpected key factors in tablet activities. Each tactile blackboard used to write or draw and each collage of photos and captions created during the exercises were expressions of the individual creativity of the students and not mere copies of what their neighbour or others had produced. The willingness and opportunity to produce unique, high-quality work were perpetual drivers in the laboratory sessions and the ability to photograph one's work and then share it with others (in class and even outside of it, e.g. on Facebook) made these aspects even more significant and was further motivation to pay attention to presentation.

Participation in tablet activities also led to emphasis being placed on previous experiences, thus reinforcing the students' own cultural identities and enabling them to interact with their classmates and become more familiar with other cultures.

Lastly, the 'fun element' of tablet use should be stressed, especially in group activities in the classroom and in exploratory activities elsewhere. This has a bearing on the motivation to participate and learn.

Participation

The high number of students attending the Tabula laboratory sessions, and other lessons where tablets were used, is perhaps the most resounding outcome. The project achieved, if not surpassed, its objectives in terms of the number and diversity of students attending the courses.

A total of 138 students (not including the auditors) attended the courses, an increase on the initial prediction of 120. Another objective which was attained was the participation of illiterate or semi-illiterate immigrants in the laboratory sessions. 68% of the participants had either never been to school or had done so for only a few years. All of these participants joined students with no or only very basic Italian language skills in the elementary level courses (preA1 and A1).

As stated in the final project report, the low drop-out rate (only 5 of the 138 enrolled students dropped out) is the key indicator of the successful running of the project. This is a surprisingly low figure considering that the average drop-out rate in this context is around 20%. Laboratory session attendance rates remained high throughout with some students at the ASAI laboratory sessions voluntarily staying behind after the scheduled end time of the lesson. At the module 1 laboratory sessions which ran until January, the organisers were surprised to see that all of the students were present at the January sessions, as the Christmas holidays usually break up the course and it is difficult to regain momentum afterwards. Also, increased levels of concentration and interest were observed during the laboratory sessions compared to other lessons, as proved by the constant requests for interaction, i.e. for clarification, confirmation, correction, technical assistance etc., with literacy teachers and facilitators (and with whoever else happened to be present, as the author of this document can testify to).

Viewing participation as willingness to step outside of one's comfort zone in learning activities, teachers stated that the use of cameras encourages students to express themselves and fully engage in the activity through body language, facial expressions, mime, grimaces, gestures and the spoken word. This all has a bearing on the mind, practices, habits, privacy and habitual behaviour, placing the students themselves at the centre of activities with planned, shared teaching goals. The ability to see and listen to oneself, and if necessary re-record or edit, is reassuring and reduces the fear of making a bad impression. This motivated the students to talk about themselves in order to understand themselves better and aid others in understanding them.

Active participation can also be measured through the prism of social interaction. Almost all of the exercises set for use with tablets (or other ICT) encouraged the students to interact, communicate and work together. Furthermore, having the whole class view the work of each individual student was beneficial to the learning and relational dynamics of the whole group.

Digital literacy

According to teachers with experience (often laborious and with negative feedback) in using PCs in teaching students with little or no schooling, the tablet is without doubt a very intuitive, easy-to-use device with a touch screen. It can be used immediately (many commands are very simple to execute) and is much more easily accepted by students. As a consequence, digital learning occurs quite rapidly even amongst students with little or no schooling. After 50 hours of laboratory sessions almost all of the students were able to independently use the main system functions and the apps they had used in class.

As stated previously, some participants, especially older students, had difficulties from time to time in using the tablets, but the problems were surmounted using a trial and error approach and thanks to the students' motivation to succeed, the commitment shown by the literacy teachers to setting the right objective at the right time for the right student, the support provided by the facilitators

and the students helping each other. This led to the students viewing the iPad as a useful, fun to use language learning tool which they could learn how to use and then fully operate.

The use of tactile screens for opening and closing apps, writing and drawing, zooming in and out on photographs or text soon emerged as an important factor and was ideal for students with ocular-motor or reading and writing difficulties. A tactile tablet device brings text and images to life in a way that cannot be replicated on paper, as the size, font and colour of text can be altered. Furthermore, writing on the tactile blackboards proved natural and less complicated than using an artificial implement such as a pencil. Teachers observed how this exercise is similar to others tasks which the students carry out frequently, e.g. making bread dough and rolling it out.

In terms of digital skills development, it should be noted that some students proceeded to purchase their own tablet device[35], proof of their great interest in continuing to use the device. A female student who attended the course at CTP Moncalieri discovered that her smartphone had the same video and photo functions and started to use it to save the work she did in class. Spontaneous tablet exploration, even though it was observed several times, and the use of ICT devices by students outside of the laboratory sessions was not deemed to have had a significant impact on the Tabula project.

Italian language learning

The positive effects of using easy-to-use devices and an appropriate teaching approach on motivation, self-esteem and willingness to participate increased students' desire to read and write and talk about themselves. This created authentic, heart-felt communication which increased the level of involvement in classroom activities and can justifiably be said to have improved language learning. In the words of Rocco De Paolis:

> *"Do they learn better? I think that they do, even if they don't necessarily learn faster. The stumbling block for students with no schooling isn't time but persevering in the belief that they can succeed. Too often, illiterate students become discouraged. They feel guilty for not succeeding and they give up. The Tabula laboratory sessions presented them with the chance to understand that learning is something that they can do too."*

A more in-depth analysis of the benefits observed in different areas is shown below.[36]

Writing benefits

Before even reaching the writing stage, tablets have the potential to be used in tracing activities, making them fun and meaningful for students and improving their fine motor skills, perception of shapes and spatial orientation.

Tablet devices enable a tactile, visual and mobile approach to the written word. When using the devices, students appear to feel able to write easily and quickly. Compared to using exercise books, pencils and erasers, students appear to write more naturally and freely, enjoy writing more and are able to copy down words from the blackboard faster when using tablets. In addition, writing using

[35] This was the first purchase made by a young Egyptian student attending the ASAI laboratory sessions with the €100 he had saved up.

[36] The following observations drew greatly on the 'Tablet use - benefits and difficulties', presented by teacher Paola Tarino in Bologna and Modena on 24 and 25 June 2014.

tablets appears to tire and stress them less and they show greater willingness to engage in dictation or self-dictation. For example, the ability to modify different aspects such as the font colour or size reduces the feeling of boredom linked to necessary exercises involving copying, writing and rewriting the same word as many times as possible.

As mentioned earlier in this report, tablets both encourage and satisfy the desire to produce aesthetically-pleasing personalised work and show it to others, also in view of the fact that these new ICT devices are perceived as being similar to televisions. The desire to produce well presented work and the ease with which the virtual eraser and bin could be used are probable explanations for the greater willingness shown by the students to correct their own work, an aspect that was noted thus by the teachers: "they are happy to correct their own work and proceed immediately to delete and rewrite something if they realise they have made a mistake". In some instances, when using search engines or inserting a URL for example, if a word is misspelt then the desired information is not displayed. Students understand this and can then make the necessary corrections to immediately access the desired content.

Reading benefits

Digital texts, especially those with multimedia components, offer a new type of reading experience which is interactive, personalised and more engaging. For the most part, text paired with images or other recognisable visual content facilitates understanding and the use a projector to aggrandise letters, syllables and words offers a more dynamic approach to Italian language learning.

Oral communication benefits

Teachers reported that the use of tablets and the ensuing communication and participation dynamics (see above, e.g. dialogues and role plays focussing on everyday scenarios) contributed to the enhancement of vocabulary and communication skills and greater use of basic linguistic functions.

The ability to watch back and listen to recorded content not only reassured students but also helped to improve their phonetical awareness.

Tablets and projectors make it easy to take photos and record videos, view them and then mentally process them. The use of authentic content opened up many opportunities for dialogue and knowledge-sharing, and not just on language issues. Generally speaking, tablets appear to lend themselves particularly well to encouraging and optimising social interaction, verbal exchanges and group work more than independent learning.

Tablets also proved to be useful in increasing the students' awareness of their own learning path. In the second half of the year, CTP Parini used the Little Story Creator app to create a personalised virtual exercise book for each student[37]. An infinite number of pages could be added, work could be imported from other applications and a new page could be used for each day's classwork. The students could then browse their exercise books, viewing all the work they had done, in a clear,

[37] The virtual exercise books are multifunctional: insert photos and videos, take photos/ record videos using the camera, write using keyboard or finger, record sound. Sound recording is a very useful tool for reading and writing exercises as sound recordings help students to link written and spoken words.

orderly fashion. Virtual exercise books help increase students' awareness of their learning developments and the progress they have made.

Lastly, tablets aid the development of skills beyond just reading and writing as they enable access to a wide variety of different content (photos, videos etc.) and are a very useful learning tool, even if they are clearly no substitute for teacher-student interaction. One of the teachers, Paola Tarino, read an article by Juan Carlos De Martin, Professor of Automatics and Informatics at Politecnico di Torino, entitled 'Digital schooling can't do without teachers" which appeared in the 3 May 2014 edition 'Tuttolibri', a weekly insert in the La Stampa newspaper (Turin edition). De Martin states that:

> *"up to now, new technology has shown itself to be incapable of fully substituting the teacher-student relationship. This relationship should motivate individual students and is the basis upon which, amongst other things, a teacher can look at a student's forlorn face and realise that they are having problems outside of school or deduce from their puzzled face that further explanation is necessary. This is what happens when a limited number of human beings share a physical learning space."*

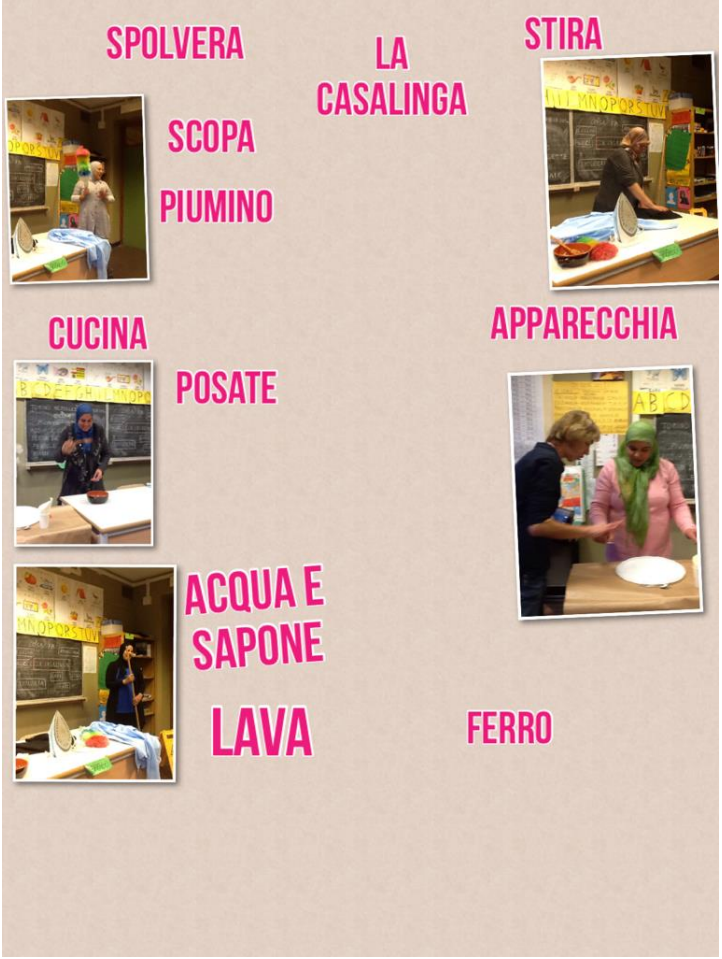
Implications for teachers and teaching quality

Given that, at the time of writing, the Tabula project has only just finished, the parties involved, notably the teachers, are still processing their experiences. Therefore, the implications of the project will probably emerge more clearly when courses restart. However, some of the consequences of the introduction of tablets in literacy classes can already be identified.

Tablets offer many opportunities for innovation and the enrichment of teaching methods due to two characteristics which distinguish them from traditional computers: they are mobile devices which are easy to use, although this does depend on the app used. In addition, they are multimedia devices which enable immediate access to online resources.

Teachers observed that tablet use enables more ground to be covered faster and the devices can be used for rather unique activities. Many classroom exercises can be done, and often are, by hand although the amount of time necessary for this often means that such exercises are deemed impracticable and are therefore not set. The comic books created during an ASAI laboratory session are a case in point. Had traditional methods been used, the exercise would have taken one week whereas tablets allowed the whole exercise to be completed in around half an hour.

In order to fully benefit from the opportunities afforded by tablets, teachers are encouraged to develop their own digital skills, both in terms of device use and literacy teaching applications. It is fair to say that the Tabula project saw teachers experiment and learn alongside their students. Literacy teachers never strayed from the tablet use programme and were aided by the facilitators in experimenting and assessing tablet functions and various apps and exercises beforehand. One to two hours were often sufficient to become familiar with simple apps. However, there was no shortage of surprises during lessons, which enabled teachers to further improve their technical abilities and understanding of device use in teaching. Such 'learning by doing' was clearly picked up on and mentioned by teachers during the meeting held between the two sets of the laboratory sessions. This learning method shall be an open, continual process, as outlined later in this document.



Personalising text and other expressive aspects of language learning (see section 3.1) was made easier by tablets and encouraged students to tell their own stories and experiences, which only had a positive impact on students' motivation. This enabled teachers and facilitators to have a better understanding of the students, their lives and relationships, what they deemed important, what they liked or didn't like and their fears and concerns. Such information is potentially a very valuable lever in providing tailor-made teaching which is relevant to the real lives of students, strengthening their motivation and touching other aspects which experience shows to be significant in improving learning.

Tablet activities in the laboratory sessions also saw the production of original, authentic content which, thanks to detailed preparation and organisation (see below), enabled, and shall continue to enable, teachers to draw from a wider range of exercises and materials which can be reused or adapted.

2.5 Final conclusions and next steps

The need for and challenges presented by continued trials

The Tabula project showed that the use of tablets and apps opens up many interesting opportunities for the teaching of L2 Italian to students with little or no schooling, on the condition that a well structured method is followed to link device use to teaching objectives. The drawing up of a clearly

defined, gradual programme for the development of linguistic and digital skills serves as an important guide for teachers and facilitators and is fundamental for students with a low level of schooling due to the reassurance it provides. A reference programme is also important when teaching young students, who generally learn faster (especially with regard to technical aspects) and are quick to deviate from the instructions given and explore other functions, a desire which should be managed but not repressed.

However, the availability of a good method for the introduction of tablet devices does not mean that an approach developed in one set of circumstances can be applied as a 'one size fits all' approach elsewhere. The Tabula project shows that tablet use certainly does involve on-site learning for the teaching staff involved but also implies an openness to continued testing in terms of technology, given the constant evolution of tablet devices and apps and organisational and teaching aspects. The fact that this approach is built around the students means that, inevitably, each group and its dynamics shall be different. Indeed, depending on the area in question, organisational models and the relationship between teachers and organisations, i.e. schools, associations etc., may differ.

In terms of teaching, it is far from obvious knowing when, how and how much to use tablets, and specific apps and functions, rather than, or along with traditional classroom tools (blackboard, exercise book etc.) or even to make space for entirely manual exercises within a single lesson or course. Furthermore, it is not easy to establish beforehand which tablet activities (e.g. use a search engine to access a site which is useful for a given exercise) to set students to encourage their learning and which to leave to the teaching assistants. Such decisions are important in terms of the development of digital skills. If too complex objectives are set too soon, there is a risk that the students will be overstretched in digital vis-a-vis language learning and this would probably lead to the teacher and facilitator having to spend a lot of time helping the students with the most difficulties, thus creating more down-time for the other students. On the flip side, an imbalance tending towards language learning would slow down the students' appropriation of the device and would limit its teaching potential. There appear to be no easy, cover-all solutions to these issues. The methods and tools developed in the Tabula project certainly help in addressing these issues, comparing solutions and sharing experiences. However, it should be borne in mind that these methods and tools are experimental in nature.

In addition to the method and the sharing of experiences, the involvement of support staff was of prime importance for adult literacy teachers in addressing these issues. Whilst the available resources did not allow for continuous support to be provided, the presence of a facilitator was of fundamental importance, at least in the most critical moments which usually occurred when students were introduced to new apps or system functions. However, facilitators should not be treated as experts to whom the teacher can delegate class management tasks.

The significant contribution of external individuals and an 'open' teaching method

Opening up teaching activities to 'the outside world', especially in flexible, innovative ways, is not just recommended but also desirable. The involvement of tablet facilitators and teachers working outside of the institutional framework, but with long-standing experience in teaching L2 Italian and familiarity with using new technology, contributed to the success of the Tabula project. From this standpoint, the Emilia Romagna region appears to be ahead of the game with a number of regional

and provincial agreements[38] pertaining to the involvement of qualified external individuals (associations, voluntary teachers etc.). This is now an essential part of the teaching landscape.

With this in mind, it should be relatively straight forward to follow the Tabula project example and formally open up teaching programme across Emilia-Romagna to external contributions and relationships. Like other teaching innovation success stories (especially those involving digital device use), the involvement of individuals from outside the school environment proved important in the success of the Tabula project. These individuals specialise in various areas (media expert, content producer etc.) and use their advanced ICT skills in creative and artistic environments, e.g. design. They use these skills in parallel with their mediation skills to bridge the gaps between different contexts and, in this particular context, to interact with teachers and students.

In the Tabula project, the Videocomunity video makers played this role. They managed audiovisual narration and documentation of the laboratory sessions and made a key contribution to the comic strip activity in the first set of ASAI laboratory sessions (see section 2.4) and to making videos of student interviews recorded in and outside of school. The initial technical problems were resolved by the Videocommunity experts who found a more appropriate solution which the teachers say they probably wouldn't have been able to implement. However, the experts acknowledged that the information provided by the literacy teachers, especially pertaining to the clear teaching objectives, was key to finding a solution.

Young volunteers also played an important role, especially the university student trainees, most of whom worked at CTP Parini and thus had contact with ASAI. CTP Parini is known as an innovative, open environment for adult education in which many students are encouraged to step up and spontaneously engage in activities. A special agreement, effective for several years, between the Regional Schools' Office and the University of Turin lays down the conditions for traineeships. Trainees are often highly motivated and thus willing to work longer hours than those initially agreed upon. They provide key support to students but also serve as 'teaching assistants', supporting the teacher during the most intense and tiresome moments. However, for such a relationship to work effectively, the teachers need to have sufficient expertise and self-confidence to let themselves be observed by individuals, such as the trainees, who are often more qualified than they are (e.g. with a Master's degree or similar).

From a teaching standpoint, 'opening up to the outside world' also involves making optimal use of photos or videos of activities which take place outside school, an activity which was repeated several times during the laboratory sessions. One example of this was the CTP Saba exercise on students' journeys from home to school, which included the recordings of interviews conducted during Labour Day (1 May) celebrations in Turin and others recorded in the classroom at CTP Saba (video shot by

[38] For example,

a) *Protocollo per il sostegno e la diffusione della lingua italiana e dell'educazione civica tra i cittadini stranieri adulti*, signed on 13 June 2011 by the Region, the Regional Schools' Office of the Prefecture of Bologna (on behalf of the Prefectures of Emilia-Romagna), ANCI and UPI.

b) *Patto regionale tra Regione Emilia-Romagna e Forum Terzo Settore Emilia-Romagna per il sostegno e la diffusione della conoscenza della lingua italiana ed educazione civica rivolta ai cittadini stranieri adulti*, approved by Regional Council Resolution no.904/2012.

There are also various local agreements signed at provincial or inter-municipality level.

Sergio Fergnachino). Another example was the ASAI module 2 sessions on food where students were tasked with producing a photo report which was then used in the lessons on 'food' and 'work'.

A third example was the visit to the Turin Apple Store where students and teachers were introduced to iBooks. Outside of the Tabula project framework, the group of youngsters attending the ASAI laboratory sessions also paid the store a visit. CTP Parini organised three meetings in April 2014 focussing on three different apps: Garage Band (music making), iMovie (film making) e Pages (writing). During the visits, the students were guided by Apple's education experts who introduced the creative potential of system applications. The students, who had never set foot in such a shop (and would have been treated with suspicion if they had), enjoyed the Apple Store visit and appreciated the attention paid to them by the shop assistants. This was another activity which increased the Tabula project students sense of pride and satisfaction.

The importance of documenting project activities

Another plus point of the Tabula project, and important in responding to the challenges of experimental teaching methods, was the great care that was taken to document the activities carried out and the feedback of those involved. A video was produced by Videocommunity to publicise and raise awareness of the Tabula project and, as previously stated, a range of different tools and procedures were used in addition to the grids presented earlier in this report, in order to document the laboratory sessions.

Such tools include:

- a Dropbox account with a folder for each set of laboratory sessions which the teacher and tablet facilitator could use to store their own work and that of the students (with sub-folders for each session), a collection of images, worksheets, photos, short video clips of classroom activities and off-site trips, a copy of the programme and other materials. The folders could be accessed by all project participants and thus constituted cross-cutting support for laboratory sessions (e.g. reusing worksheets and images);
- the production of a final report for each Tabula module (12 in total), penned by teachers and facilitators and structured along the lines of the teaching programme. The reports contained: an overview of the activities set and apps used for each teaching unit, work completed and teacher observations; an overall assessment of the trial scheme, focussing on the added value of tablet use; information on how the trial scheme was documented;
- some teachers kept 'log books', shared via Dropbox, in which classroom activities and relevant observations were regularly noted, complete with photos taken by the tablet facilitator.

With the aim of contributing to the possible future development of Tabula, the Videocommunity team shot a video entitled "Tabula, Un Tablet per imparare" (Tabula: a tablet to learn) aimed primarily at teachers and other groups involved in adult education who intend to introduce new technologies in their teaching activities. The video, which can be seen on YouTube[39], lasts 18

[39] https://www.youtube.com/watch?v=_FEFx-vdp0A

minutes and sees the students tell the story of the project, from choosing tablets as teaching support tools to their use in lessons. Interviews provide further information on the methodology and refer to the applications used and their suitability and effectiveness. The final section of the video offers some general conclusions on the project's outcomes.

Sustainability, ideas for next steps and cooperation with the Emilia-Romagna Region

Given the very successful outcomes of the Tabula project, the project will most likely be part of the Piedmont Region's Petrarca 4 plan, the EIF fund for L2 Italian teaching and equivalent of 'Parole in Gioco' in Emilia-Romagna. It is therefore probable that mechanisms to continue and build on the trial schemes conducted in CTPs in Turin and Moncalieri will be activated, especially in light of the fact that the tablets and other tools used in the Tabula project will certainly be used again in upcoming literacy classes for foreigners.

With this in mind, the Tabula coordinators identified the following as possible next steps:

- set up structured training courses for literacy teachers, including brief tutorials based on the existing audiovisual material;
- seek partnerships to develop Italian-language apps which are specifically designed for adult literacy;
- support teachers to enable them to develop their own simple apps with the specific interests and needs of their students in mind[40];
- in light of the willingness to draw that tablet use appears to encourage amongst students, the potential of this activity for language learning could be systematically explored.

The professional resources (teaching staff numbers and skills) and funding, the organisational structure and the tools made available for the Tabula project should certainly be considered as 'exceptional' and are not easy to reproduce in L2 Italian courses for adults with a low level of schooling held elsewhere in Italy.

However, Tabula does represent an important milestone and springboard for development in terms of the teaching method and approach to tablet use in teaching adults with a low level of schooling. Many support tools were used, including programme grids and teaching unit reports, worksheets and various other materials. A final report (complete with a project video) was penned and specific information and knowledge relating to the apps used and other ICT aspects was provided. There is also a network of teachers and facilitators with an interest in taking the trial scheme forward and willing to share their own experiences and assist others who wish to be involved.

These opportunities were discussed at the teachers training sessions in June 2014. The CTP Modena network has already taken steps to roll out a trial tablet scheme for the 2014-15 academic year. The intention is to draw inspiration from the Tabula approach and enable all individuals involved to interact with each other.

[40] One example is tracing exercises for adult foreigners. Berber tattoos, carpet patterns or other iconographic or design features could be used to create exercises with which students may identify more easily and in a more significant way. This would further encourage dialogue and other related activities.

3 Case study comparison and recommendations

This chapter seeks to compare the two case studies on video conferencing trials in Fornovo and on tablet use in Turin, and outline the main recommendations that have emerged from the two schemes.

Clearly, there is no point in making sweeping generalisations and heavy-handed recommendations on the basis of such a small number of trial schemes, even though they were well structured and a lot can be learned from them. It is useful to shed light on such 'lessons learned' in the knowledge that if more such trials are conducted and adequately documented and analysed, it will be easier to draw up effective guidelines and deal with a variety of different situations.

At this stage, the recommendations need to be clearly linked to the context and the experiences upon which they are based, i.e. the reference scope of observation needs to be clearly defined. With this in mind, the main similarities and differences between the case studies shall be analysed before we outline the lessons learned.

3.1 Case study similarities and differences

The Fornovo and Turin trial schemes featured the use of digital equipment as a teaching aid in L2 Italian courses held in formal classroom settings under the watchful eye of a teacher and NOT the autonomous use by Italian language students of digital content or equipment. Therefore, these trials shed little or no light, at least directly, on the idea of crafting ICT-based L2 Italian language classes which students would either take autonomously or in a so-called 'blended' environment, i.e. some classroom time and some ICT-based study at home or elsewhere. Neither trial sought to provide students with ICT equipment in class that they could then use elsewhere for practice or other educational purposes[41].

The prevalence of students with medium-to-low or no schooling was another common aspect across the two case studies, owing to the nature of the courses offered that in turn reflect the prevailing characteristics of foreigners living in the area in question (Fornovo) or intentional project design (Tabula). It goes without saying that teaching students with little or no schooling restricts the range of possible ICT use in teaching. The lion's share of the analysis conducted here will focus on this particular category of students.

Beyond the significant aspects which the two case studies had in common, there are many differences which must also be borne in mind when it comes to drawing conclusions and making suggestions for the future.

Attention should be paid to the approach and resources used. The Fornovo scheme was a response to practical needs which emerged over time, starting with small-scale activities and few available

[41] The Hangout trial conducted at Fornovo involved a female student who participated remotely in lessons from her home using her own computer and internet connection. During the course, she was not assigned any activities to be completed autonomously on a computer nor did she do so of her own accord, save for using Google Translate.

resources. In contrast, the Tabula project was meticulously planned with coordinated activities in 6 different places repeated twice in the space of a few months and a large budget.

Further differences connected to the use of ICT are analysed in the following sub-sections.

Equipment and functions

In Fornovo, the term 'digital' referred above all to the use of video conferencing programs (Skype in this case) to connect two classrooms in different villages in the Apennines (Province of Parma) where the same course was held, with a teacher present in one classroom and a tutor in the other (alternating locations). The second trial scheme involved a female student who participated remotely thanks to HangOut in the lessons held in Borgotaro. In the classroom, the interactive whiteboard was used by the teacher but the students themselves had very little to do with the digital equipment which was used primarily to facilitate remote communication.

In Turin, on the other hand, tablets were used alongside more traditional tools as an additional educational aid in exercises involving teachers and students primarily conducted in the classroom. As mobile devices, tablets were also used elsewhere both within and outside of the school premises. Even the video projector became a significant educational tool as it was used not just to view content and provide clarification but, above all, to share amongst all of the students work produced by one of them on their tablet.

Trial scheme justification and objectives

The two schemes used different ICT in different ways in order to meet different needs and objectives. In Fornovo, the primary concern was drawing together, albeit virtually, a sufficient number of students to allow the courses to go ahead. Digital communication equipment was used to allow students to participate at a distance from a different location. The use of digital communication equipment in the classroom obviously had ramifications for teaching which were often negative. Teachers found that the ICT equipment made having to manage an enlarged multi-level class even more tiring, especially seen as audio-visual communication was not always optimal. For students, especially those with low levels of schooling, the physical absence of a teacher was often seen as a drawback. However, the fact remains that if it were not for the ICT solutions used, the courses would not have been run, be it due to lack of funds or other problems, and the remote student would not have been able to participate.

The main idea behind the Turin-based Tabula project was the wish to test and explore how tablets could contribute to enhance L2 Italian teaching to students with low-level or no schooling and have an impact on their digital literacy, allowing them to actively participate in digital society. The aim was to ascertain the impact of the appropriate use of the device on the students' motivation, participation and language learning.

The role of tutors and facilitators

The presence of extra persons in the classroom, i.e. the tutor at Fornovo and the tablets and multimedia facilitators in Turin, are a common element in the two schemes and reflect the general need that students and teachers have for extra support when dealing with new equipment or teaching methods. However, these support roles were very different in the two schemes and are symbolic of the aforementioned differences in reasons for using ICT.

In Fornovo, the tutor, present in the classroom connected to the one where the teacher was present, was tasked with providing support to the teacher, making up for the physical absence of the latter by managing ICT equipment, i.e. Skype connection, webcam position etc., and, at least in part, interacting with the students (repeating explanations, checking exercises etc.). Seen as no provision was made for students using the digital equipment themselves, the tutor did not have to play the role of 'digital facilitator'.

In Turin however, the tablet facilitators and, in part, the multimedia facilitators were tasked with providing technical support to teachers, in initial exploration of the applications and their classroom use, and to students in using the device in the classroom. They were also asked to resolve problems and/or suggest new possibilities for tablet and application use in teaching.

3.2 General conclusions

Having listed the main differences between the two case studies, this section looks at what conclusions can be drawn from them. This section is structured in more or less the same way as the individual case studies.

No one-size-fits-all solution

It was implicitly mentioned before but it is worth repeating that the effective use of digital equipment in the classroom does not stem from adopting a winning formula. The focus should be on the students, the learning objectives, other objectives pursued, e.g. contributing to digital inclusion, the resources available and the course circumstances. There is no guaranteed formula for success, although it is possible, as shown in this report, to pinpoint certain methods and tools which can lead to positive organisational (Fornovo) and didactic (Turin) outcomes with certain student types. If more such trials are conducted and adequately documented and analysed, it will be easier to draw up effective guidelines and deal with a variety of different situations.

Combining the development of language and digital skills

Analysis of the case studies confirms that language courses can be used to introduce digital devices both as a teaching aid and with a view to enhancing students' digital skills and their knowledge of available online services, e.g. using them for exercises in class. Digital skills are and shall be ever more important as digital services are ever more omnipresent in modern society and, in many different areas, shall substitute more traditional ways of service provision, i.e. counters, paper documents etc. This observation is valid also for foreign nationals as many of the services they require are now only available digitally, e.g. many of the services provided by the Ministry of the Interior and the police.

A further opportunity to engage the local population

More openness and a stronger link to the local area, especially the professional and technical resources on offer, appear to be of great importance, perhaps even a necessity, in facilitating the rolling out of innovative trials (which break the mould by their very nature) with regard to their success.

In the Apennine area of the Province of Parma, many local players have emerged with a desire to draw alongside the students, understand their educational needs, the practical problems they face

in attending courses and identifying, in schools, local administrations and associations, the material and human resources necessary to start up remote courses. As previously stated, the various regional protocols that exist in Emilia Romagna not only allow for but also support the involvement of qualified external bodies (associations, teachers, volunteers etc.) in setting up language courses (see note 38).

In Turin, the Tabula project teamed up with an association of education-savvy film-makers wishing to document the trial. They involved the Turin Apple Store in various activities and encouraged the students to make and collect as much authentic material as possible outside the classroom, i.e. in their district, in the city and online.

3.3 Teachers

Pedagogical experience and openness to change: more than just technical skills

Analysis indicates that in order to obtain good results with digital technologies, the technologies need to be used in line with clear, well defined teaching objectives and account for the type of students enrolled and the time available. Thus, teaching objectives should govern the use of ICT devices and this is where the main emphasis should be placed initially. Therefore, it is NOT necessary for teachers to possess advanced ICT knowledge or experience. Such 'shortcomings' can be addressed via the measures indicated later on in the report.

It would appear that the three main pre-requisites for teachers are:

- openness to change in teaching practices and a willingness to learn and explore new avenues;
- some degree of familiarity with ICT devices in a teaching capacity and not merely in a private, personal setting. Such skills are important so as not to resort to prejudicial resistance which may nullify an attempt to introduce new elements.
- willingness to discuss, cooperate and have one's own work compared with that of other teachers or staff present in classrooms on a permanent or irregular basis.

Even if teachers meet all the above criteria, they should be supported and not left entirely to their own devices.

Initial support from an 'expert' teacher

In the case studies under analysis, no specific initial training was given to the teachers on ICT as the devices used were of a low level of technical complexity and/or the teachers concerned already possessed the minimum skill level required to use them. Nevertheless, both in Fornovo and Turin, the scheme coordinator/leader was either present or available during the first few lessons to ensure that everything functioned properly and to answer any specific questions. The teachers in Turin were supported by facilitators.

Opportunities for on-going discussion between teachers and experts

The setting up of 'didactic co-ordination' was an effective and necessary means to enhance the provision of support to teachers during the trial schemes. There were crucial aspects that required

coordination. It was necessary, amongst other things, to organise regular meetings of teachers and other participants, define communication channels and ways of sharing ideas and material and set up structured learning opportunities. In addition, the methodology and the objectives of the teaching trial scheme needed to be defined and agreed upon, thus creating joint terminology and understanding of the task in hand which are indispensable for truly efficient communication and cooperation.

3.4 Tutors, facilitators and 'external' individuals

An important albeit temporary presence

The Tabula project, alongside other projects which focus on digital literacy (e.g."Pane e Internet"[42]), clearly demonstrates the importance of classroom support staff for adult literacy, including digital literacy. At times, the presence of a facilitator or tutor is necessary to provide individual support to students, e.g. the first time a new application or system function is used, the first time participants are asked to find resources online or use more complex applications (Street View was used in the Tabula project) etc.

Even if the resources available do not allow for support staff to be present at all times, the presence of support staff is necessary at least at certain critical moments and support can be ensured by organising a support network covering several courses. At other times, teachers may wish to call upon the services of students with more skills or who are faster learners to help a fellow student who is having difficulty using a digital device, especially if the students in question share the same mother tongue.

The important thing is that teachers and students do not treat the tutor as an expert to whom class management can be delegated, even though tutors can make the teacher's life easier should a certain activity be especially tiresome for the teacher.

The selection of tutors and facilitators

In the case studies under analysis, the choice and recruitment of tutors and facilitators was dependent upon the project strategy and the opportunities or limitations presented by the circumstances and the trial scheme sites. Up in the Apennines it was very difficult to pinpoint specialised professional resources and so it was impossible to adopt stringent criteria for the recruitment of tutors. However, in Turin, CTP has a long-standing tradition of innovation and had no difficulties in recruiting highly qualified young people and student trainees.

Generally speaking, certified computer skills and proficiency in using the digital devices used in the classroom should be a pre-requisite.

[42] Pane e Internet is part of the Emilia Romagna Region's ICT plan which, since 2009, has taught computer skills to around 15,000 people, mainly adults and elderly people with no digital skills. Digital literacy courses last a total of 20 hours and are taught by a teacher with support from a tutor. For more information, visit www.paneeinternet.it/

3.5 ICT

Exploring device potential

On the basis of the two case studies, the following conclusions can be drawn and serve as guidance for further trial schemes:

- there is no magic device or application that suits all uses and students perfectly. Almost any device can be used, even in a very selective way, to meet specific objectives.
- Tablets are more intuitive, easier to use (via a touch screen), faster (fewer steps) and more readily accepted by students than a PC, especially by students with a low level of schooling and poor digital skills.
- Tablets are mobile devices which lend themselves to use not just in the classroom and for activities planned outside of school but also for remote learning and consolidation, allowing students to view exercises and continue independent study at home or elsewhere.
- The potential of such devices should be rigorously and patiently tested to evaluate the benefits (and drawbacks) in terms of efficiency vis-a-vis the learning objectives and other significant goals, i.e. social and digital inclusion.

Thus, the potential of devices which students already use on a regular basis, e.g. mobile phones and smartphones, seems ripe for exploration.

Choice of applications (apps)

A search was conducted during the Tabula project and it emerged that there are no applications currently available, at least in Italian, which specifically target adult language learners with little or no schooling. Therefore, the best applications developed with other target groups or objectives in mind, often children, should be used.

Generally speaking, the fewer apps used, the better. However, it is best to use several different apps with specific functions than to use one single app with a wealth of integrated functions, especially in the initial stages of digital skills development, seen as overall, multifunctional apps are more difficult to master for inexperienced users.

Thus, the more 'neutral' functions present in applications designed for children should be used whilst making sure that adult students do not feel 'infantilised' as this will trigger negative reactions.

Content sharing equipment

Given the opportunity to alternate between whole class activities and individual work, content sharing equipment, i.e. interactive whiteboard, video projectors etc., should be used to show explanations to the whole class, facilitate collective reading of a text, table or other teaching materials (including options such as text enlargement, font selection etc.) and share a student's work or online content.

Equipment maintenance and assistance

The more teaching activities are dependent upon using ICT, the more indispensable it is that the proper functioning of such equipment be constantly maintained, otherwise teachers, students and

others involved will lose interest. This aspect is often overlooked due to a lack of investment in running costs and can lead to a lack of resources for technical assistance and maintenance.

Other observations and suggestions

Based on Fornovo's trial scheme:

- Microphones should not be used as they are not necessary and their use can tend to over-dramatise proceedings.
- The webcam should be calibrated to avoid over-burdening the teacher or classroom assistant with having to constantly reposition it to avoid it being focussed on just the teacher or just the students for too long a period of time.

The Tabula scheme shows the advantage of purchasing hard covers together with the tablets. The covers not only protect the device but also serve as a stand upon which to rest it.

3.6 Teaching and digital devices

Owing to the specific characteristics of the trial schemes, the majority of the teaching observations relate to the Tabula project.

Tablet use alongside traditional classroom practices

It is useful to allow students some time to explore and freely use the device for personal activities, especially in the initial stages of getting to grips with the device and with younger students who often feel the urge to check their Facebook pages[43].

However, the Tabula scheme shows that the benefits of tablet use are most visible in teacher-led activities that involve other learners and traditional classroom tools such as blackboard, exercise book, answer sheets etc. As stated in the case study report, the method used in lessons saw the teacher read out a letter or syllable before writing it on the blackboard. The student would read it, then write it in their exercise book or on the worksheet and only then 'write' it on the tablet. This sequence is well defined and reassuringly familiar in school environments. The tablet is used to reinforce exercises which have already been worked through on the blackboard, in exercise books or on worksheets and provides a sense of immediacy, authenticity and fun which is either lacking or difficult to attain using traditional teaching methods.

Of course, the tablet also enables new, mobile exercises to be developed even outside of the classroom.

Define a progression of precise tasks to drive device use

Tablets are very consistent with a constructivist teaching approach where students are encouraged to pro-actively participate in their learning activities with a strong emphasis placed on team work, i.e. learning together. On this score, the Tabula project revealed the importance of the following:

- linking tablet use to a precise, tangible task
- a gradual progression in tablet use, in step with language learning

[43] See section 2.3 and footnote 3131 for possible solutions for managing improper internet use in the classroom.

- structuring teaching progression through appropriate use of beneficial applications
- alternating group activities, i.e. two or more students, with exercises focussing on individual work and expression.

The worksheets developed as part of the Tabula project (see Table 6) are a very useful tool which can be used for setting exercises, managing progress (checking students' abilities) and collecting comments and feedback in an orderly manner which can then be shared with other teachers and external evaluators.

Privacy issues and photos

Tabula demonstrated the added value of tablets in taking photos and video recordings inside and outside of the classroom (the students themselves often being the subject) which can also be used in teaching. However, given the variety of the students' cultural backgrounds, special attention should be paid to the cultural sensitivities of the students and legitimate privacy concerns. Therefore, it is wise to explain the role of photos and video recordings in pedagogy, calling on cultural mediators if necessary, and have students sign a disclaimer should the content be used for another purpose.

Making space for individual expression and authentic content

Tablets make it easy to use functions which allow students to personalise their work, creating new fora for personal expression and dialogue with teachers and classmates. In the same way as other internet-connected digital devices, tablets allow the user to virtually tap into real-world content produced in their place of residence or home town.

This is a big plus in terms of motivating students and has the potential to be an unrivalled source of knowledge for teachers vis-a-vis their students.

Be aware of tired teachers…and students!

The use of digital equipment in teaching, whilst used differently in the two case studies, increases the pace of lessons and is more demanding on the teacher owing to the fact that more happens faster. This aspect should be borne in mind and counter measures should be taken, beginning with a more detailed lesson plan, so as to conduct the flow of the lesson, and the provision of support staff (see above).

The students had differing views on the use of digital equipment in lessons. In Fornovo, students explicitly stated that the use of video conferencing technology made the lesson more tiresome to follow. In comparison to traditional 'face-to-face' teaching, communication was below par which caused a distraction, led to more down time and misunderstandings etc. However, in Turin, tablet use seemed to evoke more interest and participation in classroom exercises leading to participants feeling less tired than in traditional lessons.

Analysis of both trial schemes suggest that the lesson time should be contained for the good of both students and teachers with the three-hour lessons featuring in some of the courses being simply too long.

Careful management of remote students

In Fornovo, the presence of a remote student was another source of complication and concern for the teacher. This meant that the teacher had to manage at least one extra interaction on top of those occurring in the classroom. The presence of virtual participants needs to be constantly borne in mind and needs to be integrated into the class dynamics, otherwise there is a risk that participants will lose interest. In these circumstances, a detailed lesson plan makes such requirements more manageable.

When textbooks, exercise books or other content are used, they should be shared by the teacher (via Hangout) or sent to the remote student via another channel. The teacher can use these tools to create a sense of continuity and greater interaction with remote students although, as shown in the case study, there are technical limitations.

The aforementioned idea of using mobile devices such as tablets for both classroom activities and use at home may help to further bolster the sense of consistency.

Documenting schemes and evaluating outcomes

Given the trial nature of the schemes and the lack of such innovative trials using digital devices in the teaching of L2 Italian to adults, documenting the schemes (perhaps with a view to repeating them) and their outcomes, collecting comments and other data to analyse the effects of language and digital skills acquisition and other significant factors is of paramount importance.

Such information and knowledge are of great potential importance for all players involved in innovative teaching and for public decision-makers who are being asked to invest resources in such schemes in spite of budget cuts.