DELIVERABLE REPORT D7.5.2

"Mobile Situated Language Learning"

collaborative project

MASELTOV

Mobile Assistance for Social Inclusion and Empowerment of Immigrants with Persuasive Learning Technologies and Social Network Services

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This deliverable D7.5.2 describes the work carried out in the scope of Task 7.5 "Mobile Situated Language Learning" of Work Package 7 "PERSUASIVE LEARNING SERVICES". In deliverable D7.5.1, criteria were devised for the language learning material that would be produced for MASELTOV. These mobile-based resources have now been implemented (by replacement project partner, Pearson Publishing Ltd (PP)) and the way that they meet the criteria for the project is described here in detail.

The lessons are based on topics that are common and relevant to immigrants and are structured in a way that fits into the 'Incidental Learning Framework' developed as part of Task 7.1. This service is also linked to other service in a way that allows indication of feedback and progress (integration with the MASELTOV User Profile), personalisation (integration with the Recommendation Service) and social interaction (integration with the MASELTOV discussion forum).

The language lessons' are linked to a user's activity on MASELTOV via the Recommendation Service making learning contextually sensitive – that is, that it takes place in the same context in which it is applied. In conjunction with TextLens and social learning which takes place through predominantly the MASELTOV discussion forum, the learning tools provided in MASELTOV are both multi-sensory and contextually aware.

As a replacement partner joining at the start of the final project year, PP has had to adapt and repond to the ideas on social/informal learning also outlined in deliverable D7.5.1. The way these criteria have been met is described here and also in the related deliverable D8.3.3.

The sample language learning materials that were trialled in the project field trialled held in June 2014 were favourably received by participants.

2. INTRODUCTION

This deliverable is the second report on Mobile Situated Language Learning (MSLL). We describe the key concepts relating to MSLL and describes the final work carried out within the project to be tested in the field trials. This deliverable is also a follow up to D7.5.1, which is referred to extensively here. Deliverable D7.5.1 established criteria for suitable language learning materials in this context, and also made recommendations for social/informal learning. This deliverable describes in detail how these critera have been met.

The MASELTOV Description of Work outlines this Task as follows:

"The learning of language is one of the most important issues for the integration of immigrants. This task focuses on the development of (i) a collection of mobile lessons that is of particular importance with respect to immigrants' scenarios, (ii) a collection of ideas for social/ informal learning in interaction with the busuu.com social network (> 1 million users worldwide), and (iii) mobile situated learning with multisensory contextual support – for example, entering a grocery store would initiate a quiz on food related vocabulary related to the learning progress of the user profile."

First, we will describe the language lessons that have been developed by the new language learning partner, Pearson Publishing (PP). We will then identify how these lessons have responded to the criteria set out in the previous version of this deliverable, D7.5.1. We then turn to report on how the language lessons provide opportunities for social and informal learning. Finally, we consider how we have implemented approaches to mobile situated learning with multisensory contextual support within the MASELTOV app, the MApp.

3. BACKGROUND TO THE DELIVERABLE

PP is providing language learning services to the MASELTOV application via its mobile publishing platform 'nimbl'. PP replaced busuu.com at the beginning of Project Year 3, and brings certain advantages and limitations. While PP is not able to provide the sophisticated social learning platform that was planned by busuu.com, it provides an agile and attractive software platform, time, intelligence and previous experience in language learning with migrants. Developing its resources for MASELTOV largely from scratch has given it the advantage of producing resources that fit into the 'Incidental Learning Framework' developed during Years 1 and 2 that is the basis of Work Package 7. This deliverable describes work carried out by partners developing from the previous Task 7.5 deliverable, D7.5.1 that was completed in Month 24.

4. MOBILE SITUATED LANGUAGE LESSONS

The Description of Work (DOW) requires that the MASELTOV consortium generate a collection of mobile language lessons. These lessons are being created for and delivered to Android via a customised version of Pearson Publishing's 'nimbl' platform.

4.1 GENERAL DESCRIPTION

The mobile language lessons are organised around 6 language 'modules' that introduce language in relation to broad themes that are relevant to the lives of immigrants. These modules are:

1. Basics (greetings, numbers, shopping and basic transactions)
2. Travel and transport
3. Healthcare
4. Education
5. Employment
6. Administration

Each module is divided into:

- 3-4 'lessons'
- a 'situations' page
- 'emergency vocabulary'

The lessons make up the bulk of the language learning content. They are aimed at specific language levels aligned with the Common European Framework of References for Languages (CEFR) levels A1-B1 and cover particular topics within a theme. Neither the situations page nor the emergency vocabulary are tailored to a particular language level.

4.1.1 THE SITUATIONS PAGE

The 'situations' page provides audio and written snippets from language that might regularly be encountered. For example this might include common announcement at train stations in the module 'Travel and Transport'. This page is designed to be experiential rather than provide specific tuition. Learners can spend time listening to phrases and common announcements that they are likely to hear, and they offer translations of them in their native language. More active (as opposed to passive) learning takes place in the lessons.
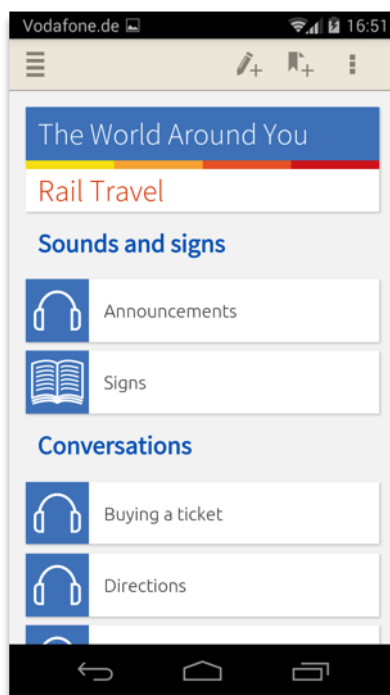
Figure 1: The situations page for the module Travel and Transport
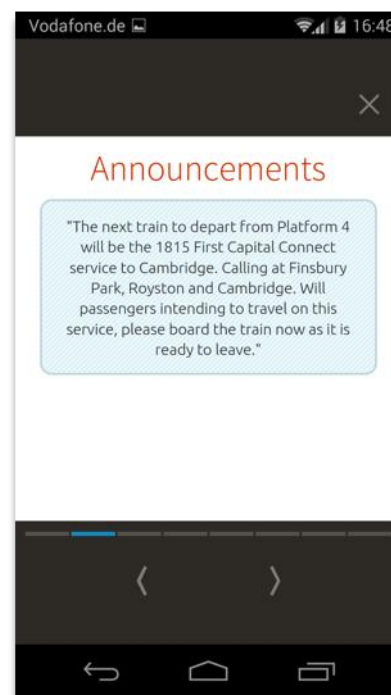
Figure 2: Train station announcements

4.1.2 EMERGENCY VOCABULARY

Emergency vocabulary is designed to be quick reference for words and phrases that might need to be accessed when a situation arises (eg missing a train or falling ill). Words and phrases are organised around types of situations to make them easier to access. Translations into the user's native language are offered by tapping on the word to be translated.
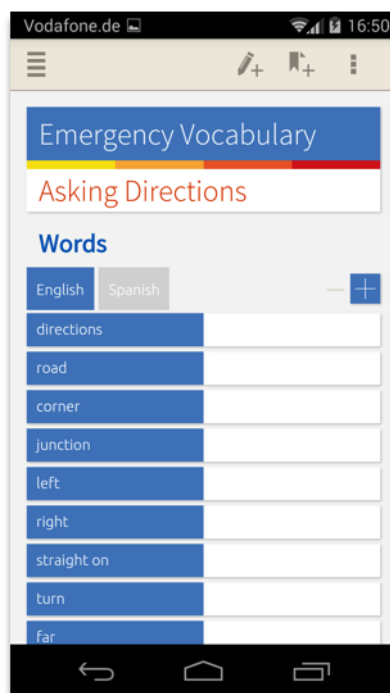
Figure 3: Emergency vocabulary

4.1.3 THE LESSONS

The lessons are designed to assist with preparation for a particular situation or to be a more reflective tool for learning and practicing relevant language once a situation has passed. At the time of the final field trials, the following lessons have been produced.

Module	Lesson	CEFR Level
1. Basics	Getting started	A1
	At the supermarket	A1
	At the shopping centre	A1
2. Travel and Transport	Transport	A1
	Planning a journey	A2
	Transport chaos	A2
3. Healthcare	Body and health	A1
	Health service	A2
	Illness	A2
	Injury	A2
4. Education	At school	A1

	Education and training	A2
	Talking to a teacher	B1
5. Employment	Types of work	A1
	About my job	A2
	Looking for work	A2
	Applying for a job	B1
6. Administration	Forms and phoning	A1
	Housing	A2
	At the bank	B1

The content of each lesson is generally structured as follows:

4.1.3.1 VOCABULARY AND PHRASES

These are each presented in groups of 10-12 words/useful phrases with a picture, audio and native language translation. They are followed by a quiz to aid retention.
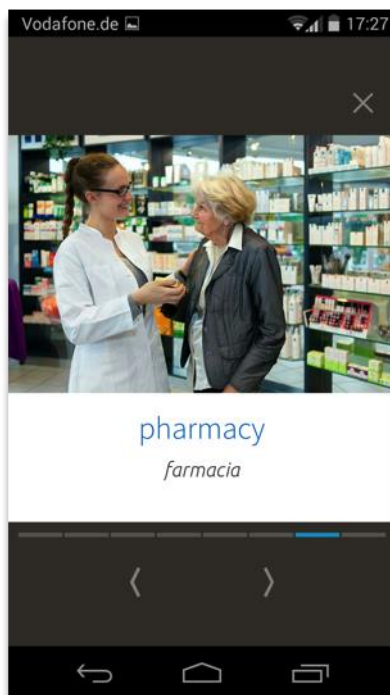
Figure 4: Vocabulary item
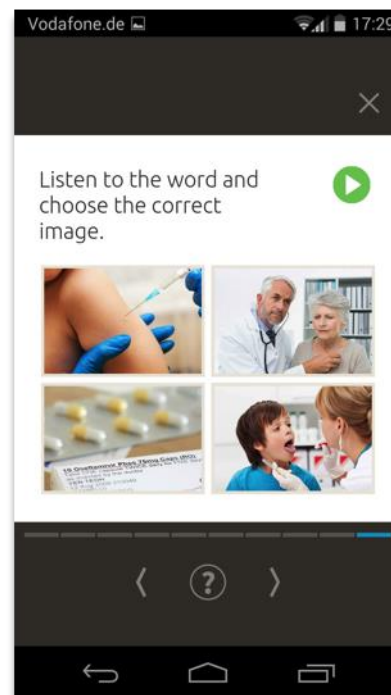
Figure 5: Vocabulary quiz

4.1.3.2 READING OR LISTENING ACTIVITIES AROUND A GIVEN SITUATION; GRAMMAR POINTS

These take the form of a text, a series of short texts or a dialogue. They are accompanied by a translation and comprehension quizzes to test understanding. This section also includes an explanation of a salient grammar point from the lesson, with practice questions.
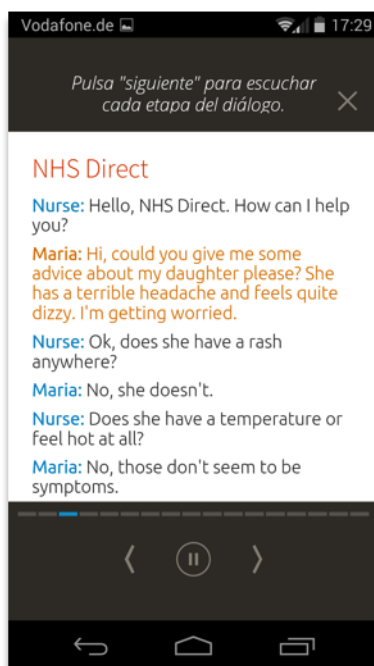
Figure 6: Dialogue
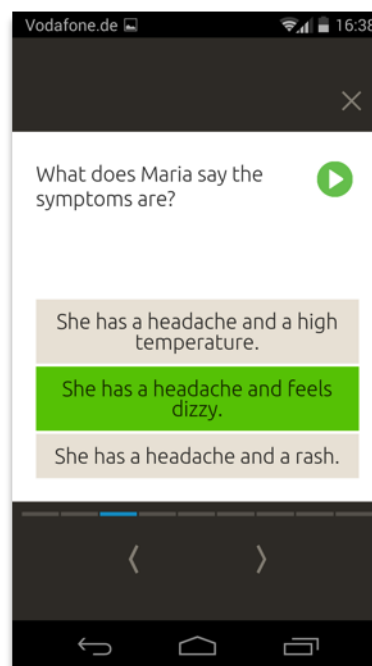
Figure 7: Comprehension
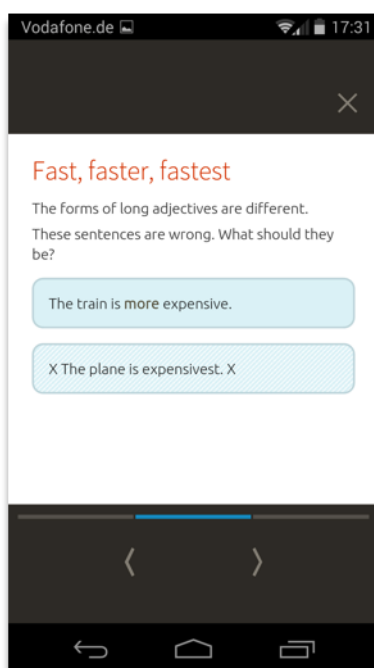
Figure 8: Grammar instruction
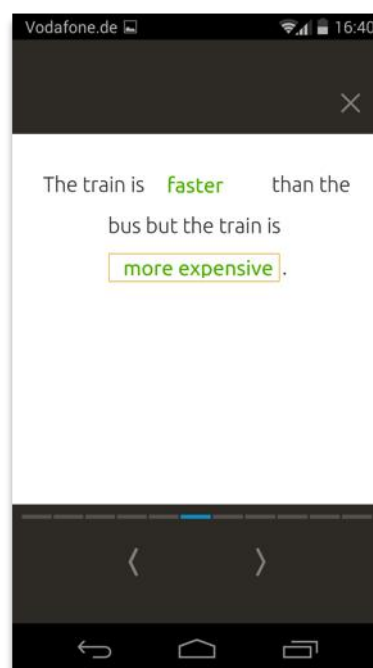
Figure 9: Practice question

4.1.3.3 ACTIVITIES

The activities page provides the learner with opportunities to use the language outside the MASELTOV mobile environment, for example, to challenge the learner to use the language to perform a task in everyday life, to research some some information or to practice the language by doing a short piece of writing. It also encourages the learner to participate in the social areas through sharing the results of these activities. There are direct links to the MASELTOV forum, and also the MASELTOV language learners Facebook groups.
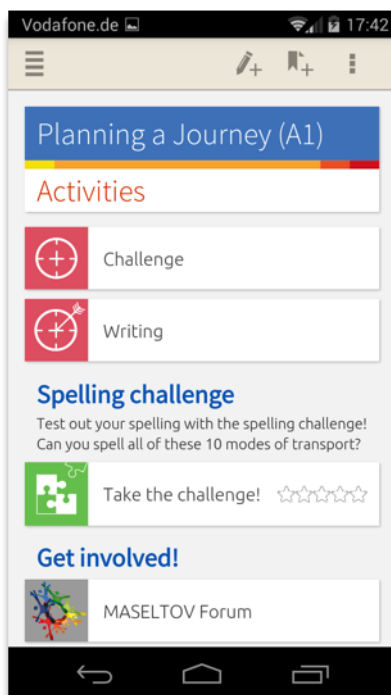
Figure 10: Activities page
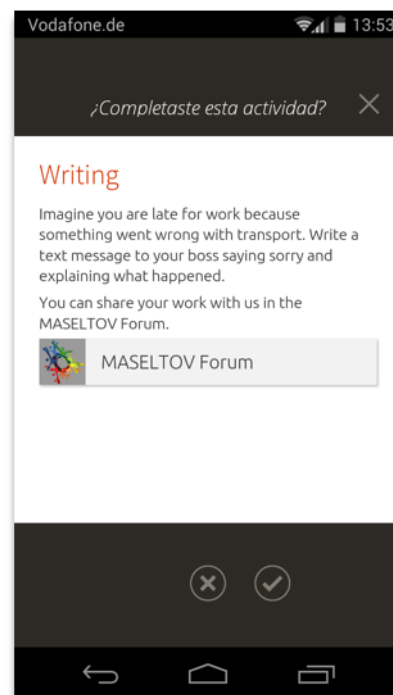
Figure 11: Writing activity with a link to the forum

4.1.3.4 TEST

A test at the end of every lesson asseses how much the learner has learnt. It provides instant feedback and evaluation at the end of the lesson. This score is recorded and is visible as a blue bar in the lesson menu (Figure 16 and Figure 17). It is also recorded in the user profile held in the remote MApp database that records all major events completed by the user. This enables other MApp services to query this data, e.g. to generate recommendations to the user for future activities.

This page also solicits feedback *from* the learner by requesting a response of 1-5 to three statements:

- I am now more confident with this language
- I enjoyed this lesson
- I would now use the language more

The results of these are also stored in the user profile and displayed in the Progress section, providing a practical implementation of affective outcome measures, described previously in deliverable D7.2.
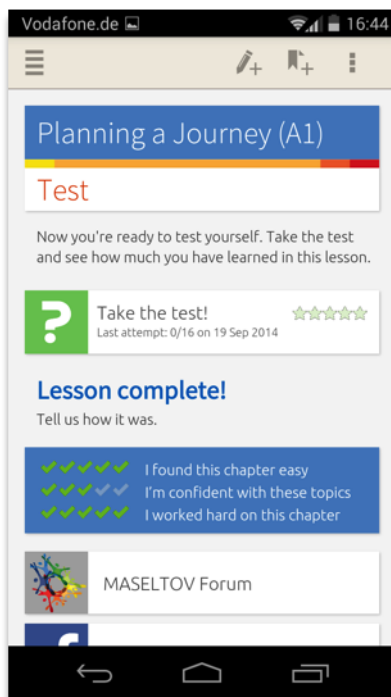
Figure 12: Test page

Figure 13: Self assessment statements

4.2   RESPONSE TO LANGUAGE LEARNING CRITERIA, DELIVERABLE 7.5.1

In deliverable D7.5.1, the authors presented criteria that future language lessons should take into account to ensure their suitablility for the MASELTOV target audience. These criteria were informed by the research literature and were critiqued by other members of the MASELTOV consortium, with input from the Faculty of Education and Language Studies at the Open University. This section briefly describes how these criteria have been met by the language lessons that have since been produced.

4.2.1 CONTENT

(1) The situation or context for each lesson must be relevant to target person or groups' lived experience, the concerns of immigrants, and relevant to immigrants' plans and goals. The lessons should reflect actual situations faced in daily life or work.

Many language learning materials are aimed at school age students in formal education, business professionals or tourists and so may portray scenarios that are not relevant to the MASELTOV audience. The MASELTOV lessons, however, have been designed to capture situations more common to daily life and to approach topics from the likely perspective of an immigrant. For example, lessons in the 'Administration' module cover form filling, talking on the phone, renting a house and setting up a bank account, while 'Education' has sections on communicating with your children's teacher as well as enrolling on adult education courses.

(2) Language vocabulary used and presented must be situationally useful (frequently experienced), avoiding unusual words that are unlikely to be encountered in everyday life and work.

Attention has been paid to base vocabulary and phrases around commonly encountered situations (e.g. planning a journey on public transport, going to the doctor, shopping, etc.). Only vocabulary common to these situations was selected. For the few lessons that were aimed at learners at B1 level, vocabulary becomes less common in order to challenge the learner.

(3) Activities should be orientated toward supporting social inclusion.. For example, learners should be taught not just functional language but socially/culturally inclusive language: not just "yes" but "yes please" and "that's very kind of you".

Lessons explaining how to use language politely have been specifically included (e.g. how to make a request more polite using 'would you..?' and 'could you..?'). There are also tips on apology and attenuation which is a cultural-linguistic point particularly relevant to English.

(4) Language should be taught in such a way to support collective experiences, e.g. "We need…" as well as "I need…"

Learning phrases is an important means by which learners can internalise the structure of the language. The person used in all of these phrases alternates between 'I' and 'we', as well as others.

(5) Idioms and informal language encountered in everyday activities should be introduced and discussed.

A lesson to specifically address idioms and informal uses of language was planned, although this has not yet been completed due to time restraints and the absence of funds. However, care was taken throughout to introduce and highlight shortened, informal forms (e.g. 'I'd rather' instead of 'I would rather'). Dialogues are presented in common conversational forms.

(6) Activities should identify the level of language being learnt, matched to Common European Framework of Reference for Languages (Council of Europe, 2001).

Every lesson is clearly identified as being targeted at a particular language level, ranging from CEFR A1 (the first lesson might be considered A0) to B1. A module will contain lessons of multiple levels, in some cases the full range of A1-B1 in order to provide progression. This also ensures that every module appeals to learners of all levels.

4.2.2 STRUCTURE

(1) Activities should have identifiable learning elements, tasks and objectives.

The complete language course is clearly organised into modules and lessons around well-signposted themes and topics. Lessons contain many tasks, which are clearly identified by their icon. Lessons also follow a common, repeating pattern comprised of:

1. Vocabulary and phrases
2. Reading or listening activities around a given situation, including a grammar point
3. Activities (writing activities and encouragement to practice in the real world)
4. A test

(2) Give feedback to learners on their progress and elicit feedback from them.

Feedback and progress is recorded and displayed to the user according to three basic metrics:

- performance;
- progress;
- self assessment.

Data relating to these three metrics is also recorded and presenteed back to learners in the User Profile (see D6.1.2 on progress indicators).

Users are given immediate feedback on completing a quiz by receiving a score, which is recorded and remains visible as stars on the page once the quiz is completed. In the same way, the larger 'Test' at the end of the lesson records the user's overall score for the lesson. This is termed the user's 'performance'.
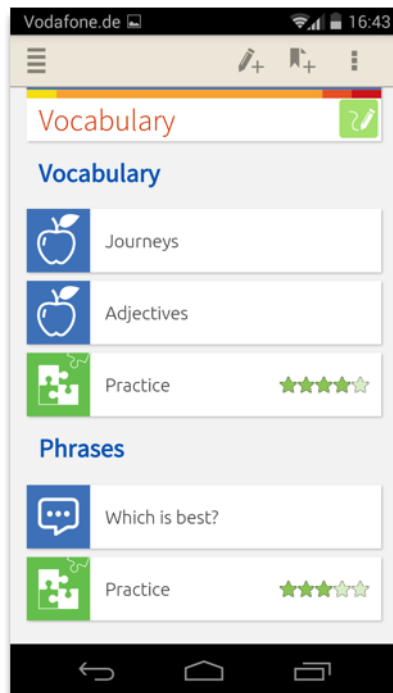
Figure 14: Page showing a star rating for the quiz
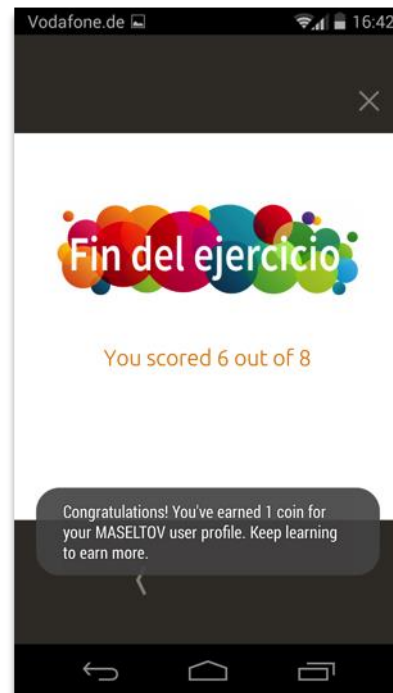
Figure 15: Feeback at the end of a quiz

Progress through the lesson is also recorded. In the lesson menu, a green bar indicates what percentage of the lesson has been completed. This is shown alongside the blue performance bar which shows the user his/her test score (Figure 16 and Figure 17).

The last page of each lesson also solicits feedback from the user. Users are invited to give a rating according to three statements about the lesson, relating to confidence, enjoyment, and likelihood of using the language more (see Figure 12 and Figure 13).

As an additional motivational tool, users are awarded 'coins' for the completion of tasks and for achieving high performance scores. Coins are rewarded by many MASELTOV services as a general motivational feature and they are stored in the User Profile. They can be spent in the Serious Game service to purchase character enhancements. In the language lessons, coins are awarded as follows:

- 1 coin for completing an activity
- 1 coin for posting an satisfactory score on a test
- 2 coins for posting a good score on a test
- 3 coins for posting an excellent score on a test
- 2 bonus coins for completing a lesson

When a user is awarded coins, a message appears to congratulate him/her. The aim is to motivate users by creating a feeling of progress through feedback/reward for their learning.
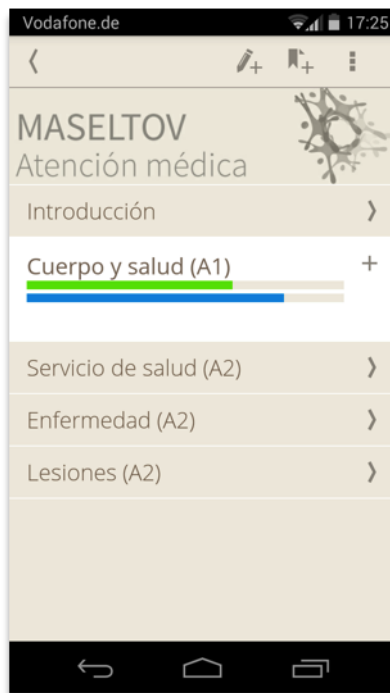
Figure 16: App menu showing progress (green) and performance (blue) bars
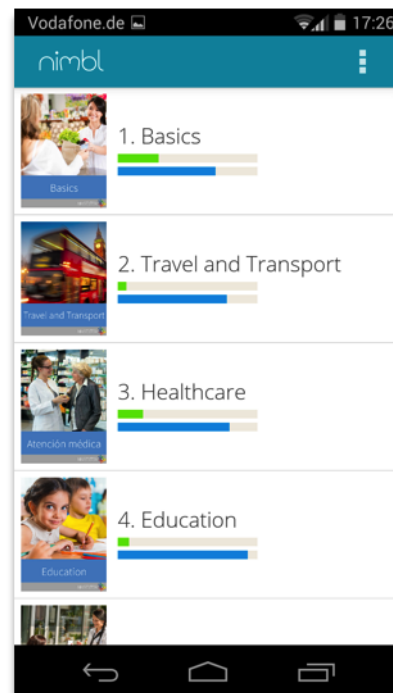
Figure 17: Module menu showing summaries of performance and progress

(3) Activities should lead to a real world task, or suggest a real world task to reinforce the learning objectives set out in the lesson.

The 'Activities' page of lesson includes 'challenges' that invite the user to practice the lesson's content outside the MASELTOV mobile environment. For example, the lesson named 'About my Job' challenges the learner to ask someone they know about their job, providing them with example sentences as support for starting a conversation and putting the language into practice. Writing challenges also suggest ways to practice the language alone and then suggest that learners' solicit feedback from peers via the MASELTOV discussion forum.

(4) Activities should be designed to be allowed to be extended into a social mode (if desired by the learner – the social aspect should be optional and not required).

The 'Activities' page of a language lesson includes prompts to complete writing challenges, find links or come up with ideas, and then post them in the MASELTOV discussion forum to share with other users. Pieces of writing might be posted directly into the 'Corrections' thread in the forum and subsequently receive feedback from facilitators and other users (e.g.*"Imagine you are late for work because something went wrong with transport. Write a text message to your boss saying sorry and explaining what happened"*). The forum and the

language learning app are integrated in such a way that users can follow links that directly and conveniently open the forum from the language lesson and then return to it. Frequent links also invite users to visit the MASELTOV language learners' Facebook group for a similar purpose.

4.2.3 PERSONALISATION

(1) The learner experience changes the lesson. A learner should be able to 'favourite' or 'bookmark' lessons and components of lessons. Learners should be able to record their thoughts about the lesson, annotate content, and to request further material.

The language learning application includes a notes and pagemarks feature. Users can attach notes to any page of the app and also add a categorised pagemark. These can be revisited, edited and removed and can be reviewed in the notes page and the pagemarks page, as well as the contents menu.

Figure 18: The notes page
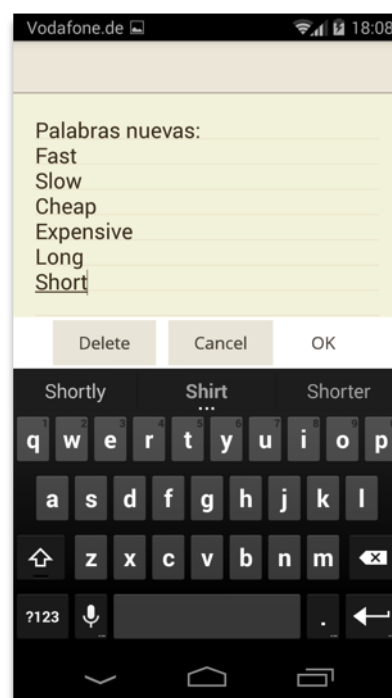
Figure 19: Entering a note
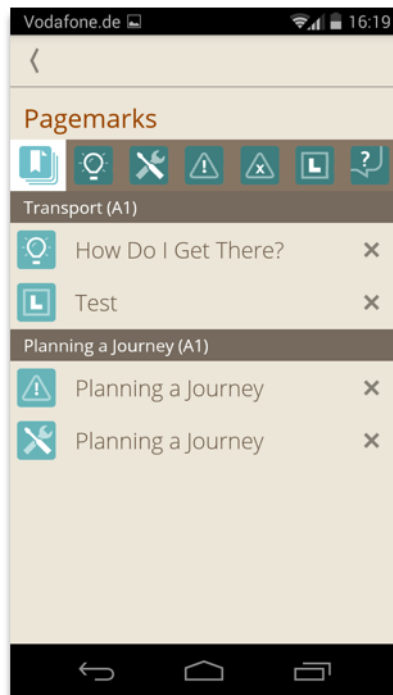
Figure 20: The pagemarks page
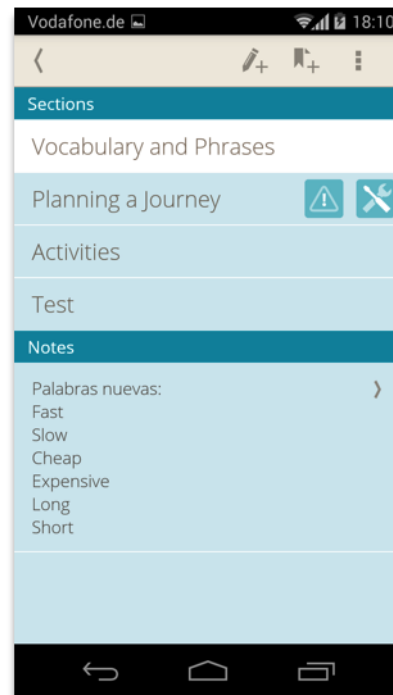
Figure 21: Contents menu showing notes and pagemarks for the lesson

(2) Lessons should allow male or female roles to be selected as a preference, as a support for learner identity.

Unfortunately, this suggestion is impossibe to implement for technical reasons. In PP's software, it is not possible to modify the content/text (e.g. replacing 'he' with 'she') once it has been produced. It is not possible to 'toggle' between different content. Given the time constraints within the project, the solution has been to ensure a fair distibution of gender (and age, and ethnic) representations are shown.

4.2.4 LEARNING ELEMENTS

Based on these criteria, deliverable D7.5.1 identified a list of learning elements that it deems suitable essential components of language lessons suitable for inclusion in the MASELTOV service. According to the descriptions given above, how far these elements have been included in the language lessons has been evaluated.

Table 1: Learning elements and description/reference of their implementation

Identified learning element	Implementation
Objectives/ tasks	See section 4.2.2 (1).
Feedback from the learner to the system (capturing their progress to enable recommendations, recording their progress to a user profile)	See section 4.2.2 (2).
Feedback and progress reporting	See section 4.2.2 (2).
Feedback by the learner to the mentors/administrators on their experiences	See section 4.2.2 (2). See also 4.2.2 (5)
Memorisation support	See 4.1.3 with regard to language lessons. Frequent tests and quizzes on vocabulary and structure aid retention.
Ability to capture/ note / comment/ add	See 4.2.3 (1) for description of notes and pagemarks.
Practice / rehearsal	The structure and content of the lessons allows users to become familiar with a typical situation before they encounter it. The vocabulary, listening and reading activities offer the opportunity to prepare/rehearse before e.g. Going to a doctors appointment.
Personalisation (e.g. favourite/ bookmark)	See 4.2.3 (1) for description of notes and pagemarks.
Get assistance / help	See section 4 on social learning features.
Get advice on what learning to do next	See section 0 on social learning features. See also section 6.3.
Room for periodic reflection on the learning journey	Each lesson is broken down into different stages which allow space for reflection between them. The test at the end allows the learner to assess his/her own learning and the feedback questions encourage self-reflection.
Indication of progress	See section 4.2.2 (2).
Reward or recognition	See section 4.2.2 (2), especially in relation to 'coins'.
Use of associated MASELTOV tools, e.g. TextLens	See section 6.2.

5. IDEAS FOR SOCIAL / INFORMAL LEARNING

Description of Work: "(ii) a collection of ideas for social/informal learning in interaction with the busuu.com social network (> 1 million users worldwide)"

5.1 BACKGROUND

It is noted at this stage that this task is being implemented after the withdrawal of busuu.com from the project. The objectives of this work package were originally devised with busuu.com's well-established social network of language learners in mind. Without the technology, user base and commercial interest in this kind of tool, the new partner, Pearson Publishing Ltd. is less well placed to develop and deliver complex tools specific to language learning in social networks. However, the project's objective to stimulate language learning in social networks has been taken seriously and achieved through the implementation and integration of several simple elegant tools that have been developed with the remaining resources and within Pearson's differing capacity. This document describes their learning value and outlines their functionalities, while the tools are described in more detail in deliverable D8.3.3.

5.2 RESPONSE TO RECOMMENDATIONS FROM DELIVERABLE 7.5.1

In deliverable D7.5.1, the authors developed ideas for social/informal learning in MASELTOV without the use of the busuu.com social network. These were presented as four principal recommendations. This section describes how these recommendations have been followed and how the objectives of this task (and those of Task 8.3) have been met.

(1) Encourage MASELTOV learners to participate in the MASELTOV social network spaces

Instigating active participation in the forum by as many users as possible is critical, as the benefit that each user derives from social tools is dependent on there being other users to communicate with. It is intended that participation will be boosted by the following:

- Designated areas in the forum for language learning inviting users to chat, participate in activities, share links and share their written work for feedback.
- Activities in the language lessons that prompt users to generate written work and share it in the forum.
- A direct link from the language lesson to the forum to make the switch between two tools as smooth as possible.
- The participation of facilitators to respond to users' posts, provide feedback and maintain discussions.

- A dedicated Facebook group for MASELTOV language learners with interesting and relevant content, (e.g. online language learning resources, events, news stories and a 'word of the day); a direct link to this Facebook group from the language lessons. This group page can be visited at https://www.facebook.com/groups/687362688000641/ .
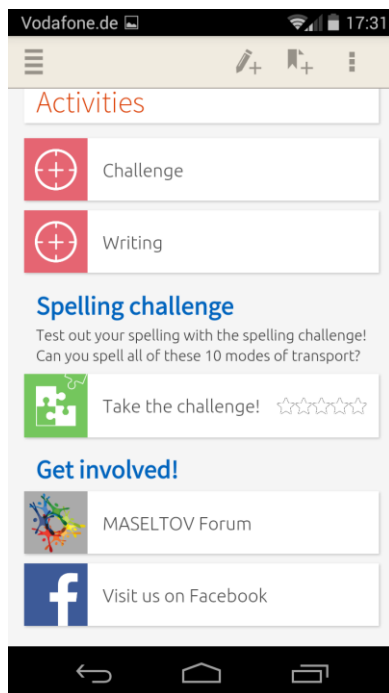
Figure 22: A page of the language lessons showing links to the forum and Facebook
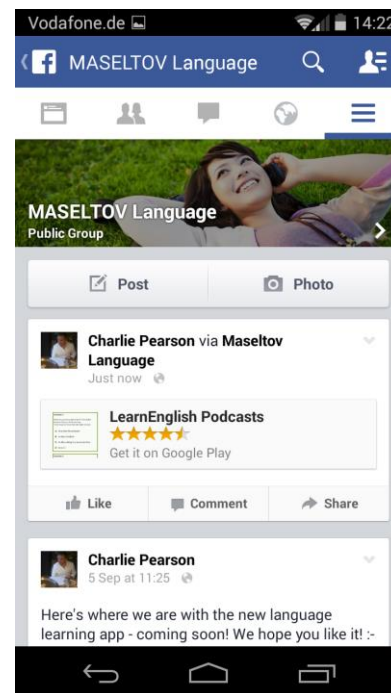
Figure 23: Facebook group as viewed on Android

(2) Encourage interactions between users; provide the basis for language learning episodes based on authentic situations.

Interaction between users is enabled by the functionality of the MASELTOV forum and by the functionalities offered by Facebook. It is encouraged by the following.

- Prompts and signposts in the forum (eg *"Tell us your three favourite things about life in the UK"*) designed to instigate lively discussion.
- The ability to share images and texts captured via TextLens. This functionality is described in more detail in Section 6.2 below.
- Frequent invitations and ideas for forum participation built into the language lessons
- Activities in the language lessons are derived from authentic situations.

**Figure 24: Forum thread set up
to stimulate discussion**

(3) Ways need to be found to provide initial feedback to users' contributions.

As described in the response to recommendation (1), instigation of active participation in the social tools is critical. That is why all efforts to encourage participation and interaction also help increase the likelihood that users will receive feedback on their initial contributions. The inclusion of facilitators in the project is also essential. Facilitators will play a vital role in responding to users posts and requests for assistance, ensuring that users are never discouraged from participating in the community.

(4) Goal setting - who does this and can learners set their own goals?

With a range of language learning topics to choose from, users can select the content that most appeals to them and helps them meet their personal goals. The materials are structured in such a way that a learner does not have to follow all the content, but rather finds his or her own route through the materials. Testing and feedback allows learners to assess and reflect on how far those goals have been achieved.

Plans have also been made for goal setting to be a feature that would span the whole of the MASELTOV service as part of the User Profile (see Task 5.2). This would enable users to enter their own goals, set deadlines and receive reminders to work on them. It would also include a set of 'challenges' as predetermined goals not set by the user. The user profile

would allow the user to view his/her challenges and goals and to keep track of how many have been completed.

Development of this feature as part of Task 5.2 has to date not been possible due to timings and a lack of resources; a specification has been developed and is planned to be tested towards the end of the project.

(5) Sustainability of learning - after the initial impact of a new environments wears off will learning be sustained?

The participation of facilitator will play an important role in sustaining participation by ensuring conversations and threads are maintained, requests and posts are not left without response, and so encouraging more participation. They will also ensure a degree of sustainability by periodically making their own posts (via both the forum and Facebook) to provide information or points of interest to the community. This includes links to resources, events, or items as simple as a 'word of the day'.

The social activities built into the language lessons will also sustain use of the social tools as users encounter these at various points in their learning journeys. Completing these activities and sharing written work socially is not necessarily tied to the 'initial impact' of the new environment.

(6) Mediation – how can learners be supported in a community?

The MASELTOV Description of Work includes plans for facilitators to have the principal role of supporting participants throughout their use of the MASELTOV services and assisting them with issues that they encounter. This is no less true with regard to their engagement with MASELTOV's social tools. According to this plan, facilitators will ensure that users' requests for information and advice are met, feedback is received when sought and that the forum is used in the appropriate manner.

(7) Evaluation of learning - what evaluation is offered and is it meaningful – and is it transparent to the learners?

The language lessons provide scores and instant feedback on learning progress. This was recommended as an essential learning element for the language learning material (see D7.5.1). Progress and learning scores are also visible in the User Profile (see D6.1.2 on progress indicators).

The development of a user community of MASELTOV learners will enable informal peer feedback of contributions to social spaces (e.g. MASELTOV forum, MASELTOV Facebook pages) where other users will provide feedback on written contributions in the target language when this is requested. This is a model that is successfully exploited by both commercial online language learning companies (e.g. busuu, Duolingo, Babbel, Livemocha) and also informally through online language learning interest groups.

6. MOBILE SITUATED LEARNING WITH MULTISENSORY CONTEXTUAL SUPPORT

Description of Work: "(iii) mobile situated learning with multisensory contextual support – for example, entering a grocery store would initiate a quiz on food related vocabulary related to the learning progress of the user profile.)"

6.1 INTRODUCTION

The MASELTOV consortium seeks to enhance informal, mobile language learning for recent immigrants by taking advantage of the the range of possibilities enabled by smartphones, including their mobility, presence within a user's daily life, and the associated sensors capacities (e.g. camera, GPS receiver, and accelerometer). In this section we describe how the MASELTOV tools and services have been developed to support situated learning: learning that takes place in the same context in which it is applied.

In deliverable D7.5.1, we identified a number of mechanisms that can support mobile situated learning with multisensory contextual support:

- Use of metadata to mark up resources, enabling contextually appropriate material to be retrieved
- Careful development of notification techniques to enable contextually-sensitive recommendations
- Providing contextual support that adapts to the user's personal preferences and learning situations, using more kinds of context information than location and identity alone, and implementing techniques to derive more detailed context information
- Consideration of the particular needs of informal and lifelong learning, as well as classroom based learning

These have been implemented through the development of the MASELTOV services and we will now turn to describe how a number of the tools support mobile situated learning.

6.2 TEXTLENS

TextLens is the MASELTOV application that makes sense of text discovered in the real world. By taking a photo using the smartphone's camera, the application can identify text captured within a picture and convert it into text that can be read, and translated, using a translation service

The MASELTOV TextLens application now provides:

- A video help guide that can be viewed at start up
- Text detection and recognition on a mobile device using the inbuilt phone camera.
- Online text translation (using Bing Translator); alternatively, offline translation is now

available using a built-in dictionary. The built-in dictionary content is provided by the Wiktionary (a collaborative project to producing a free-content multilingual dictionary).

- Phrase support: translated text can be checked for meaning using a phrase suggestion/ dictionary tool that allows the text to be queried word-by-word for meaning, and appropriate use within example phrases
- Sharing: original images and recognised text can be shared with other learners using the MASELTOV social forum, email tools, and social networking tools.
- History: the user can review previous detections, and their associated translations
- Learning proper pronunciation: the TextLens application offers the user a tool to listen to pronunciation of the recognised text.

6.2.1 USER SCENARIO

- The user takes the picture of the text-sign (the application recognizes the text): see Figure 25.
- The user requests a text translation: see Figure 26.
- The user checks the Phrase Support Tool for the others possible meanings of the detected words (Figure 27). This is activated by clicking on green question mark at the bottom of the screen. The Phrase support tool pops up a window that provides the meaning of the current word, and allows the user to move forwards and backwards through the captured text, seeing example of meaning and use in context of phrases.
- The user listens to the pronunciation of the detected words by clicking on the speaker icon on the top bar, then clicking on each word they wish to listen to.
- The user has also option of "sharing". Through this action the user can share the image and detected/translated text in MASELTOV forum and ask the community for help, or alternatively, share through any of his favourite social networks, mail application, Google Translate Application etc: see Figure 28.
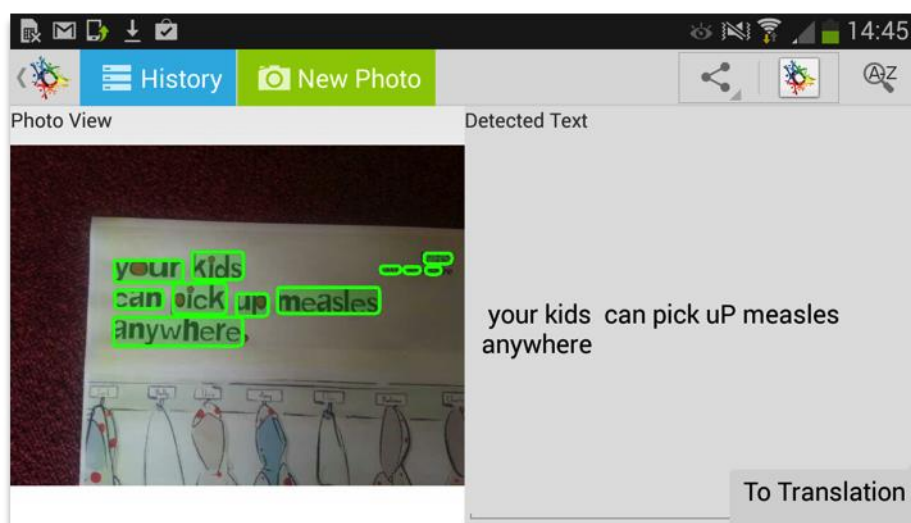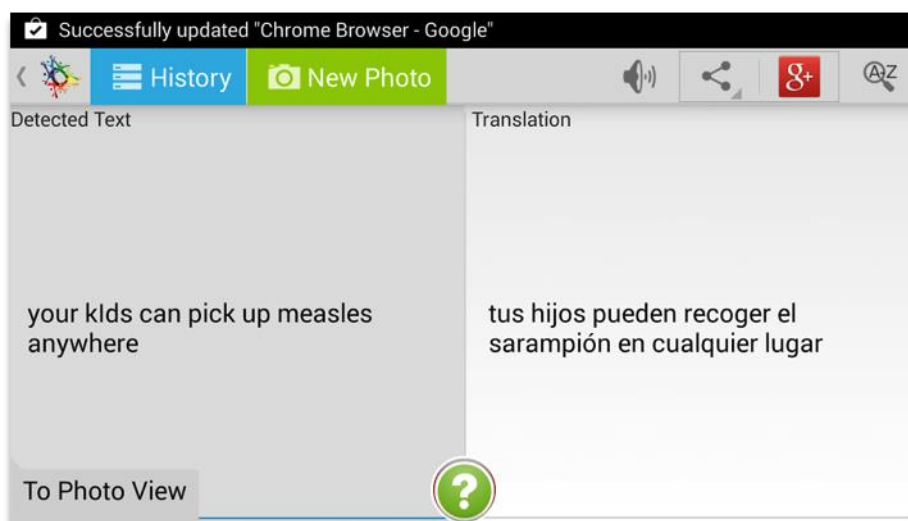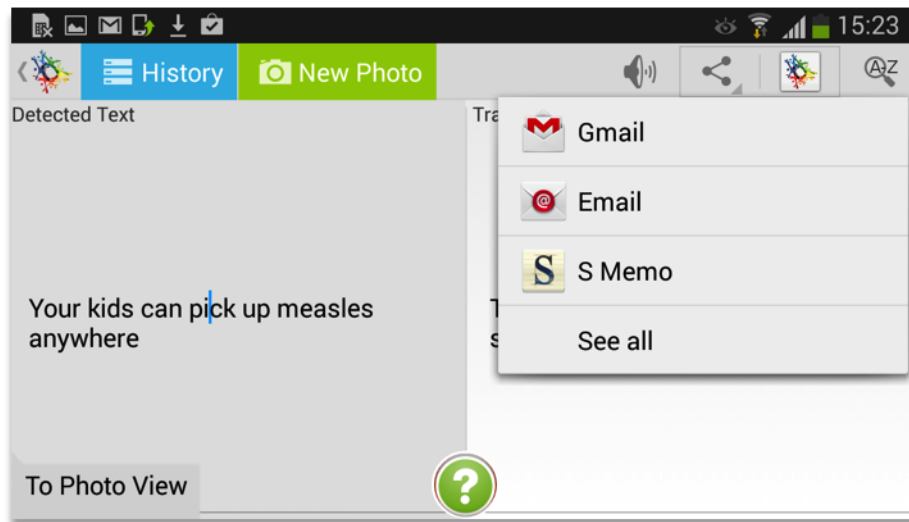

Figure 25: TextLens capturing picture of sign

Figure 26: TextLens showing translation support, and new Phrase tool icon (question mark at bottom of screen)

Figure 27: TextLens Phrase Support Tool

Figure 28: TextLens sharing function

The Recommender Service can, based on certain usage information sent to the user profile by TextLens (detected text, detected translations etc.) suggest suitable actions. For example if it identifies the "topic" of frequently translated text (such as recognising the word "doctor" being translated regularly), the Recommender Service can suggest that the user takes a language learning activity on the topic (e.g. healthcare). See also Section 6.3 on language learning and the recommendation system.

6.3   LANGUAGE LESSONS/RECOMMENDATIONS

The language lessons are central to the support of language learning within MASELTOV. However, the language learning app does not itself directly utilise sensors that can provide locational data. This context sensitivity is achieved through the mediation of the Contextual Awareness Service, and the Recommendation Service. Language learning activities will be called when other MASELTOV services pass data to the User Profile that indicate to the Recommendation service that suitable learning resources exist that may support the user's needs.

Appropriate metadata about the language learning resources are stored in the MASELTOV information servers and are available to the User Profile. This data includes the module name, lesson name, language level (CEFR A1-B1) and, importantly, a list of key words associated with each lesson. For example, a lesson entitled 'The Health Service' might have the associated key words 'doctor, patient, hospital, dentist, ambulance etc'. When any of the key words are received as triggers by the the other MASELTOV services, the recommender makes a recommendation of that particular lesson. Tapping on the recommendation takes the user directly to the start of the lesson.

6.3.1 USER SCENARIO

- While visiting a health clinic, the MASELTOV participant is attracted by a poster that he/she doesn't understand. He or she uses the TextLens tool to find out the meaning of the text "Your kids can pick up measles anywhere".
- TextLens recognises and translates the key word 'measles'. The recommender identifies 'measles' in the language lesson 'Illness'.
- The user receives a recommendation: "You recently read a sign about **measles**. Would you like to try a language lesson about **Illness**?". The user taps on the recommendation to begin the lesson.
- By taking the lesson, the user encounters more relevant words and phrases (eg relating to vaccinations).

6.3.2 OTHER SCENARIOS

- User spends a period of time at a Point of Interest (eg train station) and is recommended a related lesson (Transport or Planning a journey).
- The user searches for a particular topic (eg jobcentre) in the Information service and is recommended a lesson about Employment (Looking for work).
- The user contacts a facilitator through the GeoRadar service on the subject of ESOL courses and is recommended a lesson on adult education and training.

6.4 MASELTOV FORUM

Learning in a social environment is a highly important element of achieving successful language learning, both in terms of practice and building confidence. The MASELTOV app includes a forum tool to enable MASELTOV learners to communicate with other users, share multimedia resources and support each other's learning. For language learners, an external Facebook group also exists for a similar purpose. These social tools enable language learners to share their real world experiences, solicit feedback and discuss challenges within a supportive community. This is discussed further in deliverable D8.3.3.

6.4.1 USER SCENARIOS

- Users can complete short writing activities prompted by the language lessons and post them in the forum to receive feedback from peers.
- Users can use the forum to connect with individuals for more personal languge support.
- Users can share web links or other resources or knowledge with the rest of the community.
- Users can make use of the forum or Facebook group more generally to converse about language issues or any other problems as they arise.
- Images can be gathered from daily activities (eg by using the context-sensitive TextLens tool) and shared with other users.

When these social tools acquire a high number of active users they will be a source of highly contextual and immediate support to members of the MASELTOV community.

7. SUMMARY/ CONCLUSIONS

This deliverable described the services that have been implemented in order to achieve (1) mobile situated language lessons, (2) ideas for social/informal learning, and (3) mobile language learning with multisensory contextual support. It has described these services in relation to expectations outlined in previous deliverables.

It was recommended in deliverable D7.5.1 that the mobile language learning service adhere to a set of clear criteria and principles, which it defined. The replacement language learning partner (PP) has delivered the required mobile language lessons, taking into account the criteria laid out by D7.5.1. These have been favourably received in the initial field trials (June 2014) and will be fully tested in the final field trials (autumn 2014). The final field trials will reveal whether the criteria will need to be revisited and revised. It will also reveal in what ways the implementation of the language learning resources will need to be improved.

In the context of the withdrawal of a project partner, Section 5.2 explained the ways in which the objectives of social/informal language learning have been met. These social learning aspects have been based on the research carried out in deliverable D7.5.1, which identified that this kind of learning can be motivating to the MASELTOV target audience and is likely to play a central part of language learning in the field trials. While implementation has been simpler than envisaged at the start of the project, it is the belief that the available tools will be sufficient to enable a social dimension to learning for those who engage with it.

Finally, this document considered mobile situated language learning with multisensory contextual support. The provision of the MASELTOV app on smartphones has enabled the consortium to leverage a range of sensors and functionalities that enable language learning to take place anywhere and at any time, and gather environmental data to suggest timely and relevant resources. The MASELTOV User Profile and Recommendation services (developed in Work Package 5) are the central means by which this is achieved, triggering appropriate language learning resources. The TextLens is also incorporated here as a context sensitive tool that is linked to social learning opportunities as well as personalised language learning.

Following the field trials, it is anticipated that feedback from participants will set the direction that further work on the language lessons, recommendation and social tools should take. Work until the end of the project will ensure that the content of the final prototype is informed by user feedback. This is may include:

- tightening of recommendation rules to improve the timing and accuracy of the language lessons;

- refining social activities in the language lessons and prompts in the forum according to observed user behaviour;
- modifying the language lessons in light of feedback from users on the kind of content (e.g. phrases, emergency vocabulary, grammar exercises) that they found most beneficial;
- adding new lesson topics or whole modules in response to user requests.

There may also be time spent adapting the content of the language lessons for exploitation beyond the end of MASELTOV. This could involve the addition of more grammar-based material and formalisation of existing exercises and improved design work. It is also likely that some work will be done to ensure that the materials are usable in instances when the native language of the learner is not known.

[END]