

MOLLVIS FINAL EVENT

Projects and milestones

Our consortium has been active for many years, and it has produced 5 projects, 5 milestones towards the accessibility of language learning for visually impaired persons. During the period from November 1, 2015 until March 19, 2016 we concluded our work and we presented the achieved results in one of the most prestigious public halls in Florence: Sala Luca Giordano in Medici Riccardi Palace.



This event was the public part of a three day meeting of the whole consortium, held at Centro Machiavelli.

The meeting was attended also by Stephen Farrier, from Edinburgh University, and by Mr. Mauro Menetti, external auditor.

During our last meeting we discussed the achieved results and future perspectives, which were presented during the public event.

Despite the strike of the public transport, our audience was numerous and local press covered the event.

Dr. Benedetta Albanese represented the Mayor of Florence Dario Nardella, and expressed her satisfaction for a product "which is really democratic, as it meets needs both of sighted persons and of visually impaired persons wishing to learn German".

Achieved results

John Ravenscroft summarized achieved results as follows:

The evaluation was based on the responses obtained via evaluation questionnaires, completed by learners and teachers. The questionnaires were completed between November 1, 2015 and January 31, 2016 giving a three month evaluation time period.

Learners VI and Sighted

63 learners answered the survey. The learners were almost equally female and male (34 and 29, respectively). 16 were blind, 14 partially sighted and 33 had no visual impairment. Most learners were 10-20 years old (n = 31), followed by 21-30 years old (n = 16). Learners 31-40, 41-50, 51-60 and 60+ had 5, 4, 4, and 3 learners in each decade, respectively.

The majority of learners were learning German for leisure or interest (n = 30), followed by school (n = 17) and business (n = 11). 4 learners were learning for a combination of business and leisure and 1 for both leisure and for school. 21 learners are in special education, 17 are in mainstream education, 8 are in language school, 14 are not in any education and 3 were in 'other school.'

The most common native languages were Romanian (n = 15), Dutch (n = 14), Italian (n = 12), and English (n = 9). The German levels ranged, but peaked from pure beginner and intermediate (pure beginner, n = 18; beginner, n = 10; pre-intermediate, n = 6; intermediate, n = 22; NA, n = 7).

Technology Use

Computer Use (Overall)

Question	Apple	Windows	Windows + Apple	None
Do you use a PC? (Select what kind)	10	42	10	1

Accessibility Mode with Computer

Question	Yes	No	Did not use a computer
Did you use the accessibility mode on the computer?	24	38	1

Computer Use (Learners with VI)

Question	Apple	Windows	Windows + Apple	None
Do you use a PC? (Select what kind)	4	20	6	0

Accessibility Mode with Computer – Learners with VI

Question	Yes	No	Did not use a computer
Did you use the accessibility mode on the computer?	24	6	0

Smartphone/Tablet Use (Overall)

Question	Android	iOS	Windows	Black Berry	iOS, Android	iOS, Windows	Android, Windows	None
Do you use a smartphone? (Select what kind)	16	31	1	1	1	1	2	9
Do you use a tablet? (Select which kind)	18	18	3	0	2	0	0	22

Accessibility mode with smartphone/tablet (Overall)

Question	Yes	No	Did not use
Did you use the accessibility mode on the smartphone?	23	31	9
Did you use the accessibility mode on the tablet?	14	37	12

Smartphone/Tablet Use (Learners with VI)

Question	Android	iOS	Windows	Black Berry	iOS, Android	iOS, Windows	Android, Windows	No
Do you use a smartphone? (Select what kind)	3	18	0	0	1	1	2	5
Do you use a tablet? (Select which kind)	6	10	1	0	0	0	0	13

Accessibility mode with smartphone/tablet (Learners with VI)

Question	Yes	No	Did not use
Did you use the accessibility mode on the smartphone?	22	3	5
Did you use the accessibility mode on the tablet?	14	8	14

From the tables above we see that most learners who used a computer use windows computers. This is true for sighted and learners with VI, and approximately 39% of computer users overall used an accessibility mode although this increases to 80% if you are a learner with VI.

Interestingly, the choice of operating systems shifts to Apple-based products for mobile-phones and Apple and Android products being equally popular for tablets. We see that the use of accessibility mode is slightly higher for mobile phones versus computers (43% versus 39%) but is much lower among tablets compared to both computers and smartphones, with tablet accessibility mode usage being 27%.

Survey Technology:

Overall during the evaluation period, 14 learners were on an Android phone, 6 were using iPhones, 35 were using iPads, and 8 were using Android tablets. 35 learners were using a screen size of 8-10", 4 of 10-12", 3 of 12-14". 3 learners were using very small screens with a size of 3-4", 12 learners had screens that were 4-6" and 6 had screens that were 6-8". Figure 1 clearly shows that 8-10 inch screens were the most popular mode of accessing the app.

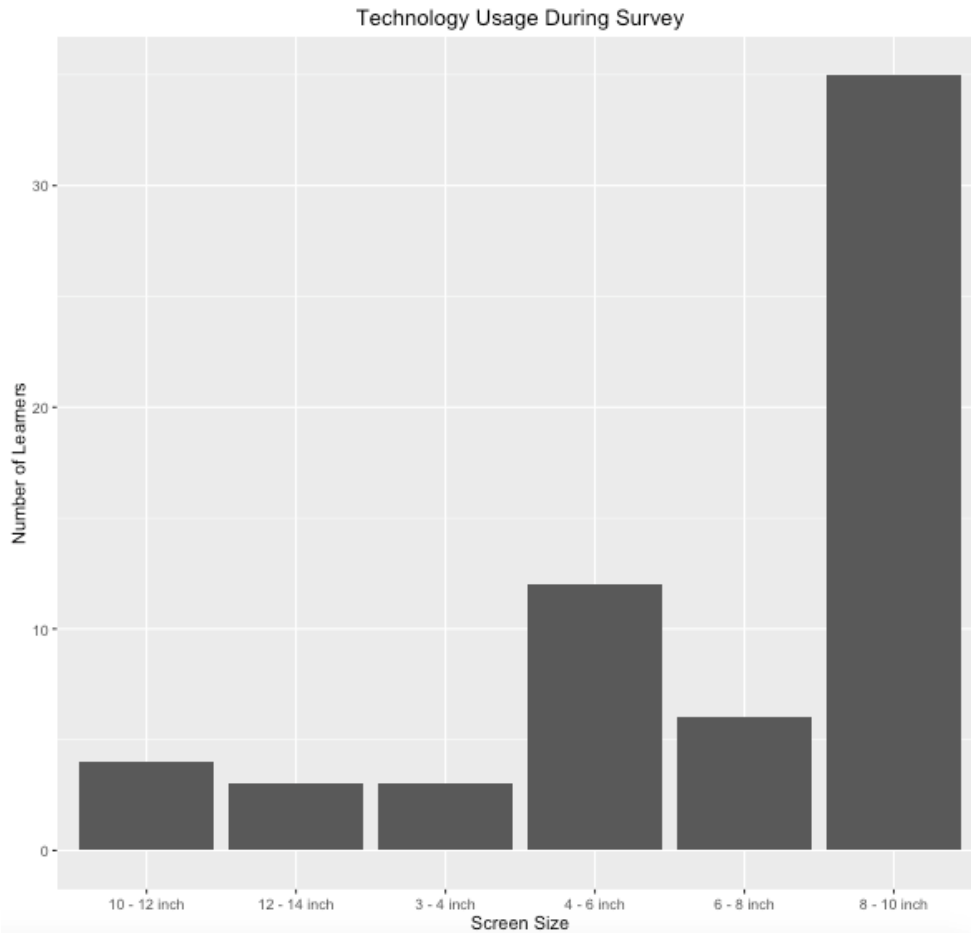


Figure 1: Screen size

Accessibility, Language Sound and Language Content

The learners were asked to rate the following statements on a scale of 1-5, with 1 being no (not at all) and 5 meaning yes (absolutely). Below are the distributions of their responses and the mean.

Accessibility of the Language Content (Overall Response)

Question	1	2	3	4	5	NAs	Mean
Can you access the course easily?	2	6	8	31	16	0	3.84
Is the structure of the course clear?	0	2	12	24	25	0	4.14
Can you move from one activity to another easily?	0	3	8	29	23	0	4.14
Can you record and replay sound?	6	7	14	20	16	0	3.52
In the case of PC + joystick: is it easy to handle?	5	0	0	1	2	55	2.38

Accessibility of the Language Content (Learners with VI)

Question	1	2	3	4	5	NAs	Mean
Can you access the course easily?	2	5	3	12	8	0	3.63
Is the structure of the course clear?	0	1	9	10	10	0	3.97
Can you move from one activity to another easily?	0	3	4	13	10	0	4.00
Can you record and replay sound?	1	4	10	9	6	0	3.50
In the case of PC + joystick: is it easy to handle?	4	0	0	1	2	23	2.57

In general, it seems that learners seem to be able to access the language course fairly easily, though there seems to be room for improvement among recording and replaying sound and with joystick use. With recording and replaying sound, there is a higher distribution of scores, which may indicate that some users had trouble with this feature. With the joystick use, there were many not applicable 'NAs', indicating that this is not a highly used feature and those who did answer primarily answered negatively. Other than these two features, learners seem very positive about the accessibility of the language content of the app. What is particularly interesting to see is that with a mean score of 4.14 both the structure and ease of moving around the course were rated very highly thus suggesting that the structure and design of the app is suitable for both users with VI and sighted users as confirmed by the results we see for learners with VI where the mean results for access and movement around are equally as high.

Language Sound (Overall)

Question	1	2	3	4	5	NAs	Mean
Is the German language spoken at the right speed?	0	0	5	14	44	0	4.62
Is the German language spoken clear and free of distortion?	0	0	0	9	54	0	4.86
Do you like the German voices?	0	0	1	21	41	0	4.64
Is the mother tongue spoken at the right speed?	2	1	10	18	32	0	4.22
Is the mother tongue spoken clear and free of distortion?	2	4	4	14	39	0	4.33
Do you like the mother tongue voices?	2	0	4	24	33	0	4.37

Language Sound (Learners with VI)

Question	1	2	3	4	5	NAs	Mean
Is the German language spoken at the right speed?	0	0	5	9	16	0	4.37
Is the German language spoken clear and free of distortion?	0	0	0	3	27	0	4.90
Do you like the German voices?	0	0	1	10	19	0	4.60
Is the mother tongue spoken at the right speed?	1	0	8	8	13	0	4.07
Is the mother tongue spoken clear and free of distortion?	1	4	3	6	16	0	4.07
Do you like the mother tongue voices?	1	0	2	12	15	0	4.33

The learners both sighted and visually impaired were very positive about the speed and clarity of the German language speakers but slightly more critical about that of their native language speakers, though overall still very positive. The mean scores for every question is over 4 indicating that the speed and clarity of the German voices were set and pitched at exactly the right level and were liked by learners who were either sighted or VI.

Language Content (Overall)

Question	1	2	3	4	5	NAs	Mean
Is it clear what you are expected to do?	0	1	14	23	25	0	4.14
Is the language content useful?	0	0	7	22	34	0	4.43
Is the language context at the right level?	0	8	33	29	2	0	3.25

Language Content (Learners with VI)

Question	1	2	3	4	5	NAs	Mean
Is it clear what you are expected to do?	0	1	4	13	12	0	4.20
Is the language content useful?	0	0	5	12	13	0	4.27
Is the language context at the right level?	0	8	8	13	1	0	3.23

It does appear that some learners were unsure in some circumstances exactly what they were expected and meant to be doing in units. Overall though learners felt the explanations were clear and learners felt the content to be very useful in reinforcing the accessible language content. There was less agreement on whether the language content was at the right level, which could be a reflection of the many levels of German of the learners themselves. Note, we do see from the learners with VI table that they thought the language content was extremely useful with a high mean of 4.27 and that they did know what to do within the app (mean 4.20).

Specific Questions for Sighted Learners

Question	1	2	3	4	5	NAs	Mean
Is the lay-out on the touch screen clear and easy to use?	0	0	9	25	12	17	4.07
I understand this app is especially designed to cater for listening and understanding language and I appreciate the value of it.	0	0	1	19	24	19	4.52
As a sighted learner, to what degree is this app visually attractive?	1	3	18	17	5	0	3.5

The sighted learners in particular felt the touch-screen medium was easy to use and with a mean score of 4.52 certainly appreciated the value of app as a language learning pedagogical tool. Perhaps disappointingly the sighted users did not find the app all that visually attractive and only rated this with a mean score of 3.5.

Activities:

Learners were asked to answer whether they were able to do the following activities.

Activity Table (Overall)

Activity	Yes	No	NAs
Dialogue	62	1	0
Multiple Choice	60	3	0
Drag and Drop	50	13	0
Gapfill	34	12	17
Memory	18	7	38
Virtual Room	7	17	39
Recording	50	13	0
Grammar Explanation	57	6	0
Cultural Explanation	45	11	7

Activity Table (Learners with VI)

Activity	Yes	No	NAs
Dialogue	29	1	0
Multiple Choice	29	1	0
Drag and Drop	24	6	0
Gapfill	20	4	6
Memory	9	5	16
Virtual Room	6	8	16
Recording	24	6	0
Grammar Explanation	27	3	0
Cultural Explanation	24	5	1

From these two tables we can see that all of the activities were attended to, however learners particularly those who are blind and had no vision, had most trouble with drag and drop, gap fill, and the virtual room sections of the app. (Note: There were many learners who chose not to answer for gapfill, memory, and virtual room, leading to high missing values for these variables.)

These learners were then asked what activities they liked and disliked most and this is seen in the following two tables below.

Most Liked Activity (Overall)

Activity	Voted Most Liked
Drag and Drop	16
Multiple Choice	14
Recording	13
Dialogue	9
Gapfill	4
Voice Recording	2
Grammar Explanation	2
Cultural Explanation	2
Memory	1

Most Liked Activity (Learners with VI)

Activity	Voted Most Liked
Drag and Drop	7
Multiple Choice	7
Recording	7
Dialogue	4
Gapfill	2
Voice Recording	2
Grammar Explanation	1
Cultural Explanation	0
Memory	0

Most Disliked Activity (Overall)

Activity	Voted Most Disliked
Grammar Explanation	18
Recording	14
Voice Recording	8
Drag and Drop	8
Dialogue	5
Multiple Choice	4
Gapfill	3
Cultural Explanation	2
Memory	1

Most Disliked Activity (Learners with VI)

Activity	Voted Most Disliked
Grammar Explanation	13
Voice Recording	4
Dialogue	3
Drag and Drop	3
Multiple Choice	2
Recording	2
Cultural Explanation	1
Memory	1
Multiple Choice	1

In general, most of the activities were equally liked and disliked (though not by the same learners). However, the most enjoyable activities seemed to be the drag and drop, the multiple choice and the dialogue and although some people who were visually impaired had difficulty with these activities some did not. The most disliked activities seemed to be the grammar explanation and the voice recording the latter perhaps being due to the quality of the sound recording.

TEACHERS

There were 12 responses to the survey; 2 had to be discarded as they responded that they had no learners who were visually impaired or sighted, making them ineligible as they were therefore not teachers and could not professionally assess the pedagogical value of the app (as teachers). Thus, the analysis is on the remaining 10 survey responses. Five teachers taught at special education schools, three at language schools and two were at 'other' institutions. Seven had experience teaching visually impaired students while three did not. The native languages for the teachers were Dutch (n = 3), Italian (n = 3), German (n = 2), English (n = 1) and Romanian (n = 1).

The mean number of learners with VI in the teachers' classrooms was 6.2, with a range of 0-10. The mean number of sighted learners in the teachers' classrooms was 5.6 and the range was 0-20. Together, the mean number of learners in the teachers' classrooms was 11.80 and the range was 7 to 20.

Language Levels

Average language level	Pure beginner	Beginner	Pre-intermediate	NA
Learners with VI	7	2	1	0
Sighted learners	4	2	1	3

While teachers were equally likely to rate their learners who were visually impaired and sighted learners as beginner and pre-intermediate learners, 3 more teachers rated their learners who were visually impaired as peer beginners than sighted learners did. However, three teachers did not answer for sighted learners.

Learning Evaluation

Teachers were asked to rate the pedagogical learning and value of the app on a scale of 1 to 5, one being no (no value at all) and 5 being yes (absolutely this app adds value and learning).

Question	1	2	3	4	5	Mean
Does the app have added pedagogical value?	0	0	0	4	6	4.6
Have you observed progress learning the language?	0	0	2	8	0	3.8
Does the app promote learning efficiency?	0	0	2	3	5	4.3

We can clearly see from the table above with a mean score of 4.6 that the teachers thought the app and the language course has indeed pedagogical value and that the app does promote learning German as a second language. Interestingly, teachers did observed learning but the mean score of 3.8 indicates that this may not be consistent over the evaluation time period. Overall, it is clear that these ten teachers thought the app affords pedagogical learning and is of value to both sighted and non-sighted learners.

The teachers were asked to rate which parts of the app they found especially useful and questions on the course in general.

Question	1	2	3	4	5	Mean
The units 1-10?	0	0	0	5	5	4.5
The hospitality module?	1	1	1	1	6	4
The cultural information?	0	1	1	4	4	4.1
How would you rate the total course?	0	0	0	9	1	4.1
Is it attractive for sighted users?	0	1	2	6	1	3.7

The support for the app continues with teachers identifying that they thought the 1-10 units were particularly useful and with a mean score of 4.1 they rated the app very highly. As we have seen with the learners sighted survey the teachers agreed with them that the app itself is not as attractive to sighted learners as it is to learners with a visual impairment.

The teachers were asked whether the learners were able to do the following activities on a scale of 1-5, with 1 being none and 5 being all.

Question	1	2	3	4	5	NA	Mean
Dialogue	0	0	3	1	6	0	4.3
Multiple Choice	0	0	3	2	5	0	4.2
Drag & Drop	0	0	2	4	4	0	4.2
Gapfill	0	0	0	7	3	0	4.3
Memory	0	1	4	1	1	3	3.3
Virtual Room	1	1	1	3	0	4	3.1
Recording	2	3	0	1	4	0	3.2
Grammar Explanation	0	4	0	2	4	0	3.6
Cultural Explanation	0	1	0	4	5	0	4.3

The teachers reported their students were most able to complete the dialogue, gapfill and cultural explanation activities, followed by multiple choice and drag and drop. Four and three teachers did not respond to the virtual room and memory activity questions, respectively. The virtual room and the recording activities were the most difficult for the learners to complete, as reported by the teachers. The recording mirrors the learners' survey, where it seems there may have been difficulty with the record and replay activities.

Similarly, to the learners, the teachers were asked what activities they liked and disliked most. The results can be seen in the following table. The grammar explanation was by far the most disliked activity, which mirrors the learners' results. Despite the teachers reporting that learners had trouble with recording activities, three teachers report recording being their most liked activity and one teacher reports voice recording being his or her most liked activity.

Activity	Voted Most Liked	Voted Most Disliked
Cultural Explanation	1	0
Dialogue	1	0
Drag and Drop	2	0
Gapfill	0	1
Grammar Explanation	0	6
Memory	0	1
Multiple Choice	2	1
Recording	3	0
Voice Recording	1	1

Finally, the teachers were asked for their conclusions on the course, again using the same 5-point scale. It appears from this small sample size that while most teachers did not feel this course would be amenable for self-learning, they did feel the course could be an integral tool for their classroom activities.

Question	1	2	3	4	5	Mean
The language course can be used as a self-learning course.	0	0	5	1	4	3.5
I can use the course or parts of the course as an integral part of my classroom activities.	0	1	1	2	6	4.3

Hands on demonstration

Vanessa and Maria Pia, VI students, showed the app on two different platforms, while Radu and Andrea (fully sighted students) gave a practical demonstration of its use and advantages in inclusive settings.

Katrin Wegener outlined the added value of our app for a language teacher, pointing out that listening without looking can enhance unsuspected abilities both in students and in teachers.

Questions from the audience

Question: When will the final version be ready?

Answer: End of may we will publish a Silver version.

Q. - How much will it cost?

A. - The first 3 units will be free, the whole course will be available for a small fee.

Q. - Where can we find MOLLVIS course?

A - In the stores (Apple Store, Googleplay, Windows Store). The windows desktop version will be available through our website www.mollvis.org.

Antonio Quatraro (UICI Florence) finally pointed out the need for further cooperation in this specific domain, as an example of building inclusion in Europe, and of changing attitude towards diversity, from fear towards scientific and human growth for all.

