

How inclusivity can help develop machine translation (MT) literacy and autonomy: A Swiss experiment with learners of French

Sara Cotelli Kureth (University of Neuchâtel), sara.cotelli@unine.ch

Hasti Noghrechi (University of Neuchâtel), hasti.noghrechi@unine.ch

Introductionⁱ

This action-research project was undertaken in the context of the latest migration crisis in Europe. The University of Neuchâtel opened French classes for Ukrainian refugees in May-July 2022. In these classes, learners from diverse backgrounds were brought together resulting in heterogenous classes. Although they had no prior knowledge of French, the learners needed to be able to communicate quickly, not only because mastering the local language is an intrinsic part of integration (Adami and Leclercq 2012) but also because there was no guarantee of state funding for learning beyond A2 level of the Common European Framework of Reference for Languages (CEFR). We thus developed an inclusive course design that informed the tools that we chose, the task creation process, and the method of instruction. We based our inclusive strategies on the Universal Design for Instruction (UDI) (Scott and Edwards 2018), a framework created to support American language teachers when designing effective teaching for diverse learners. Our overall aim with the autonomy workshop was twofold, and inclusive practices helped achieve these goals: fostering both learners' autonomy and their digital literacy. We focussed mainly on machine translation literacy (Bowker and Buitrago-Ciro 2019), as it has been established that migrants rely heavily on this technology in their everyday multilingual communication (Nunes Vieira et al. 2021). This report briefly describes the context of the experimental autonomy workshop, outlines its inclusive design, and details how it met its two main goals.

1. Context

1.1. Learners' profiles

Between June and July 2022, 114 learners attended our autonomy workshop and all of them participated in the projectⁱⁱ. From the anonymous questionnaire the learners completed at the end of each monthly session (see evaluation, section 4), we learnt that most of them came from Ukraine (86%), while some participants were from Switzerland, South America or Asia. The vast majority were females (90%), aged between 16 and 70.

Fig. 1. Students' knowledge of Englishⁱⁱⁱ

Fig. 2. Students' formal education levels^{iv}

As shown in figures 1 and 2, our classes were heterogenous in terms of L2 English knowledge and formal education. The challenges faced by students when learning on their own thus differed from learner to learner. When students have a good knowledge of an L2, one can assume that they have already developed some L2 language learning strategies (Gombert 1996). Students who have attended university have most likely had ample instruction in their L1 and have a good grasp of meta-lexicon (Trevis 1997): words like *subject*, *sentence*, *phrase*, *object*, etc. However, faced with such a diverse group of learners, we lacked common ground and had to compensate for this in the inclusive design, as explained below (section 2).

1.1. Course design and content

Our course design was created for three four-week semi-intensive courses in French for beginners (A1-A2), organised by the Institute of French Language and Culture, first as a pilot phase in May 2022, then fully implemented in June-July 2022.

These courses consisted of two compulsory modules (60 hours per month) and an optional one (up to 40 hours). In the compulsory modules, participants attended two hours of face-to-face French lessons every morning in smaller classes (15 people per class) using a course book with an action-oriented approach to language teaching^v, and one hour of autonomy workshop where all learners were gathered (approx. 40 people). In addition, students who needed extra practice could study independently at the Espace Multimedia d'Auto-apprentissage (E.M.A.) of the Language Centre every afternoon (optional self-study module). This report will focus solely on the autonomy workshop.

The aim of the autonomy workshop was twofold, in the sense that each lesson presented learning outcomes in terms of language skills but also metalinguistic knowledge and learning strategies. Learners had the opportunity to improve their pronunciation, grammar, vocabulary, listening, reading, speaking, and writing skills. Additionally, each task helped them to review or learn meta-language or learn how to use machine translation (MT) tools critically, thus developing their MT literacy (Bowker and Buitrago Ciro 2019).

Learners had to work individually or in small groups, under the supervision of four tutors (see 2.3.). The only activity done in plenum was at the beginning of each session: one of the tutors explained the objectives and the learning outcomes of the lesson in French; for example, “recognise ‘silent letters’, that is to say letters we do not pronounce”, “discover the forms of ‘avoir’ in the present”, “understand new words thanks to the context”, etc.^{vi}. For the rest of the lesson, no general instructions or corrections were given. Participants had to follow the prompts provided by their handouts and cover different parts of the task at their own pace, ask questions

individually when needed, and seek individual feedback from the tutors when they were finished. At the end of the 45-minute session, students received a document summarising the corrections and giving explanations in French, English, and Russian, the purpose being to create an autonomy-supportive environment for the students, following Holec’s definition of autonomy: giving them the “ability to take charge of [their] own learning” (1981: 3). All tasks were designed to show them how to learn from easy-to-access material.

2. Inclusive design

In the last few decades, many teachers have been developing inclusive language-teaching practices to support neurodiverse learners and those with social, emotional, and behavioural difficulties in their learning (Smith 2021). Also, more and more reports have emphasised the difficulty for refugees who have survived trauma to learn languages (Gordon 2011; Al Masri and Abbu-Ayyash 2020). Faced with our heterogenous students, who were living a precarious life in Switzerland as war refugees and were literally shell-shocked, we decided to implement an inclusive course syllabus based on eight out of the nine principles of the Universal Design for Instruction (UDI) (Scott and Edwards 2018), reproduced in the table below.^{vii}

PRINCIPLE	DEFINITION
PRINCIPLE 1: Equitable Use	Instruction is designed to be useful to and accessible by people with diverse abilities. Provide the same means of use for all students: identical whenever possible, equivalent when not.
PRINCIPLE 2: Flexibility in Use	Instruction is designed to accommodate a wide range of individual abilities. Provide choice in methods of use.
PRINCIPLE 3: Simple and Intuitive	Instruction is designed in a straightforward and predictable manner, regardless of the student’s experience, knowledge, language skills, or current concentration level. Eliminate unnecessary complexity.
PRINCIPLE 4: Perceptible Information	Instruction is designed so that necessary information is communicated effectively to the student, regardless of ambient conditions or the student’s sensory abilities.

PRINCIPLE 5: Tolerance for Error	Instruction anticipated variations in individual student learning pace and prerequisite skills.
PRINCIPLE 6: Low Physical Effort	Instruction is designed to minimise nonessential physical effort in order to allow maximum attention to learning.
PRINCIPLE 8: A Community of Learners	The instructional environment promotes interaction and communication among students and between students and faculty.
PRINCIPLE 9: Instructional Climate	Instruction is designed to be welcoming and inclusive. High expectations are espoused for all students.

Table 1: Universal Design for Instruction (UDI) (Scott and Edwards 2018: 13--14).

As described below, these eight principles have informed different parts of the workshop design and curriculum (tools, task creation, and method of instruction) and have helped foster inclusiveness.

2.1. Tools

Accessibility and multimodality can be deduced from the three first principles of UDI (“equitable use”, “flexibility in use”, and “simple and intuitive”) (Scott and Edwards 2018: 15-16) and influenced our choice of tools. We selected only tools that were easily available on cellphones: apps like MT systems (*DeepL*, *GoogleTranslate*), a vocabulary app (*Quizlet*, we provided all the vocabulary lists), and a conjugation app (*Le Conjugueur*). We also referred the students to a few websites, mainly *Reverso-dictionary* which provides online bilingual dictionaries for most current languages (URL: <https://dictionnaire.reverso.net/>).

All these tools had been successfully implemented in classrooms before, and some, like *Quizlet*, allowed us to introduce gamification (Waluyo and Bucol 2021)^{viii}. Moreover, they were free or inexpensive, so all students could afford them. We selected *Le Conjugueur* as a conjugation app although iPhone users had to pay a very small fee in order to use it, and there were other freely available options. In fact, *Le Conjugueur* is the only app allowing students to find the infinitive of the verb from an inflected form, which is very important for French beginners:

some widely-used verb forms even at beginner's level are sometimes not transparent at all (e.g. *je vais*, present form of the verb *aller* 'to go').

Furthermore, in keeping with the sixth principle of UDI "low physical effort", we ensured that the tools were easily accessible during class time by introducing QR codes in the course documents each time students were required to use them. When students were trying an app for the first time, instructors took some time in class to individually offer technical help and advice on how and why to use the tools.

We designed many exercises based on MT output (for more details see Cotelli Kureth and Noghrechi forthcoming). We knew that all learners had been using MT systems daily to communicate, for example, with the Swiss administration. Including them in the classroom allowed us to show learners how they could not only blindly use the tool but also learn from the machine and use it critically (see 3.1.).

We also chose to base our exercises on commercial beginners' audiobooks ("Le monde en vf" series from the publisher Didier; URL : <https://www.mondesenvf.fr/>). These books are affordable and easy to find, but most importantly they have been shown to be very useful in language learning contexts, especially for vocabulary acquisition (Chang 2011; Webb and Chang 2014). We believe that they can be a stepping stone to acquiring a foreign language, for example in terms of grammar knowledge or pronunciation.^{ix} They also provide multimodality (Dressman 2020) and are in line with the first and fourth principles of UDI, "equitable use" and "perceptible information", as learners can read the text and/or listen to the audio version of the same text, thus helping students with learning disorders (Singh and Alexander 2022).

2.2. Task creation

The fifth UDI principle is "perceptible information" (Scott and Edwards 2018: 16), and we tried to be as clear as possible in the way we presented the material to our students. We included as

many languages as possible in the course documents: all instructions and feedback were given in French (to foster recognition of important vocabulary for instructions and grammatical description), in English (for the few non-Ukrainian participants) and in Russian (for Ukrainians who did not speak English). Moreover, we clearly stated the lesson's objectives and gave a brief explanation of the learning outcomes in plenum before the participants started working on their own (see 1.1.).

We also tried to include more flexibility, in line with the second UDI principle (Scott and Edwards 2018: 15), and designed repetitive tasks^x, but with various working patterns (mainly inductive: example > rule and deductive: rule > application) to help students reflect on their preferred learning strategy. We wanted learners to be able to repeat some of the tasks on different MT content and audiobooks in the future.

2.3. *Method of instruction*

Group work, group discussions, and peer instruction helped ensure that weaker and slower students could reach the lessons' objectives. Indeed, sometimes peers could offer help in the learners' L1, whereas instructors could only do so in the L2 (French or English). This instruction method also helped build a strong "community of learners" (UDI principle 8, Scott and Edwards 2018: 17).

Autonomy was, however, not total but guided: for each workshop session, at least four instructors were always available to answer questions, correct output, and explain tasks when needed. They were proactive, asking students if they needed assistance when they saw someone looking lost. Instructors also sometimes solicited the help of a stronger peer to explain things in the learner's L1. Our main goal was to foster a supportive atmosphere among learners so that "tolerance for error" was the norm (UDI principle 5, Scott and Edwards 2018: 16)

As students were not progressing at the same pace and as instructors did not have time not respond to every need during the workshop, we created a time and space, apart from the autonomy workshop, where and when students could practice more. Weaker students thus had the opportunity to take advantage of one-on-one instruction time and extra practice at the Espace Multimédia d'Auto-apprentissage (E.M.A.) every afternoon. This proved indispensable to the 3% of students who did not know the Latin alphabet. As there were just a few of them, and since there was no time to cover this fundamental point in class, the learners had to acquire this knowledge on their own. They did so quite quickly and could easily follow classes with their peers within a few days.

3. Main goals of the autonomy workshop

The inclusive practices described above helped foster both learners' autonomy and their digital literacy, as explained below.

3.1. Fostering learners' autonomy

The heterogeneity of the public meant that learners had very different previous experiences with autonomous learning. We thus designed semi-guided autonomous tasks to bring all our students to the same level.

We also introduced metalinguistic tasks that increased knowledge of basic meta-language in L1 and L2 (words such as *infinitive*, *subject*, *object*, *transitive*). The concepts were explained in the course documents and were at the heart of the task. For example, one lesson focussed on verbs. The students were asked to underline the verbs on one page of the audiobook and then look for the infinitive in *Le Conjugueur*. This allowed them to familiarise themselves with the metalinguistic concepts of *verb*, *infinitive*, and *conjugation*.

This autonomous work was designed to enable students to experiment with self-study in a supportive context, encouraging autonomy, and self-reflection: how to read instructions, how

to use certain tools to find answers to questions, how to use readily available materials such as audiobooks to learn more about the L2. And this was enhanced by repeating the same types of tasks (Ahmadian 2012).

3.2. Fostering digital literacy

Our aim was to assist learners in developing their MT literacy (Bowker and Buitrago-Ciro 2019), as they were already using MT in their daily life. In particular, we wished to foster digital literacy (Ollivier 2018) more broadly, as it has been amply shown that learners sometimes misuse MT systems and are not aware of the difference between various tools (O'Neill 2019; Cotelli Kureth et al. to be published).

We provided tasks that fostered awareness of potential problems with MT systems (expressing gender correctly, giving more informal options). Other tasks were designed to allow learners to understand the difference between MT systems and online dictionaries, demonstrating the inaccuracy of single word search on MT systems (O'Neill 2019).

Finally, using MT critically means knowing how but also when to use the tool. We thus also provided tasks that discouraged learners from using MT systems. For example, we asked them to read a page of the audiobook, providing pictures to help them understand new vocabulary. Learners needed to understand from the beginning of the course that they could also learn to communicate and understand texts without these tools.

4. Evaluation of the course design

This protocol was evaluated by collecting and analysing different types of data: copies of students' material^{xi}; teachers' logs; the results of a survey taken by all learners at the end of the course with multiple-choice as well as open questions^{xii}; and two semi-directive focus group interviews with sixteen student volunteers, in English and in Russian^{xiii}. This ethnographical,

quantitative and qualitative data allowed us to rework some of the tasks and to evaluate the general benefits of the programme.

Based on comments received to the statement “At first, the workshop was difficult but then I got used to the format”, it seems that some students struggled with the format of the workshop (34% agreed with the statement, 39% disagreed and 27% had no opinion about it)^{xiv} but once they were used to it, they felt they could benefit from it. For example, one participant stated that “It is always difficult in the beginning but we get used to it after a while. I improved my grammar and I understand better” (survey, original in Ukrainian, our translation). Some students also emphasised the supportive atmosphere in the course: “I have a very positive impression. I’m impressed by the support provided to older people” (focus group interviews, original in Russian, our translation).

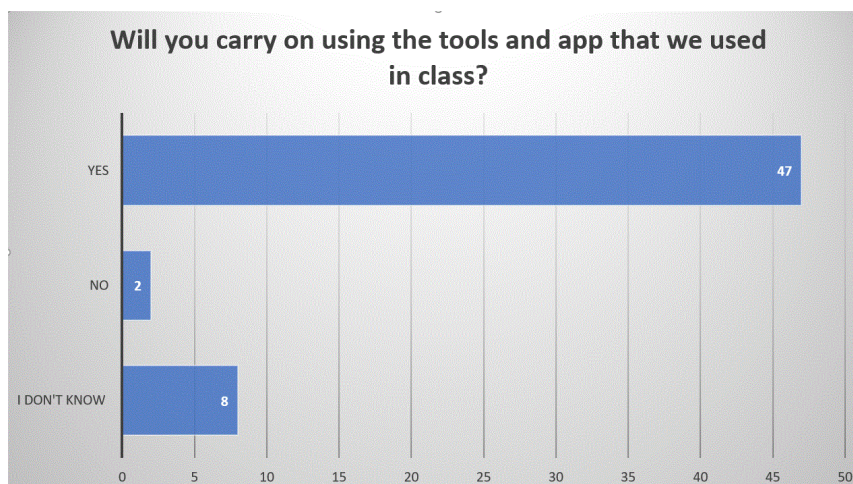


Fig. 3. Will you carry on using the tools and apps (conjugueur, reverso dictionnary) that we used in class in the future? (June and July survey, n=57)^{xv}

It appears that we had selected appropriate tools, as shown by Fig. 3, as 82% of learners said that they would continue using the tools in the future. However, some students expressed concerns, mainly due to learning ideologies that were in contradiction to autonomous learning:

“It is problematic to learn by yourself as it is the professor who needs to first explain how to pronounce sounds and write words” (survey, original in Ukrainian, our translation).

However, learners who became used to the course design understood that they were gaining more than language skills: “I really like that we have a second lesson, in which, each time there is a sort of constant reflection. That is to say you not only learn the language, but you also develop a kind of logic” (focus group interviews, original in Russian, our translation).

Conclusion

This report details an exploratory design that was created to be inclusive, according to the UDI principles (Scott and Edwards 2018) and to empower students to develop more than language skills as a consequence. It offered a variety of tools and types of activities that suited participants’ preferences irrespective of their education and previous language learning. It also allowed participants to receive help and feedback directly, frequently and exactly when needed, in order to improve their learning and to ensure no one was left behind, even older, less technically savvy learners. This inclusive syllabus helped students reach three simultaneous goals. It allowed them to improve their French grammar, vocabulary, pronunciation, speaking, listening, reading, and writing skills. Concurrently, they developed their digital literacy, their metalinguistic skills and were provided with examples of how to use MT output or audiobooks to learn a language, fostering future autonomous learning of French.

References

- Adami, H. and Leclercq, V. (eds.) (2012) *Les migrants face aux langues des pays d'accueil: Acquisition en milieu naturel et formation*. Villeneuve-D'Ascq (France): Septentrion Presses Universitaires.
- Ahmadian, M. J. (2012) Task repetition in ELT. *ELT Journal*, 66(3): 360--382. <https://doi.org/10.1093/elt/ccs020>
- Al Masri, H. and Abu-Ayyash, E. (2020) Second language acquisition from Syrian refugees’ perspectives: Difficulties and solutions. *Open Linguistics*, 6(1): 372--385. <https://doi.org/10.1515/opli-2020-0025>

Bowker, L. and Buitrago-Cirio, J. (2019) *Machine Translation and Global Research: Towards Improved Machine Translation Literacy in the Scholarly Community*. Bingley: Emerald Publishing.

Chang, A. C-S. (2011) The effect of reading while listening to audiobooks: Listening fluency and vocabulary gain. *Asian Journal of English Language Teaching*, 21: 43--64. <https://www.cuhk.edu.hk/ajelt/vol21/abstract/a03.pdf>

Cotelli Kureth, S., Delorme Benites, A., Haller, M., Noghrechi, H. & Steele, E. (to be published). 'I looked it up in DeepL': Machine translation and digital tools in the language classroom. In *Tralogy3. Human translation and natural language processing: Forging a new consensus*. Venice: Edizioni Ca'Foscari.

Cotelli Kureth, S. & Noghrechi, H. (forthcoming, 2024). Intégrer GoogleTranslate comme support d'enseignement au niveau débutant: Atelier pratique pour un public de réfugié-es ukrainien-nes. *Partages 1*.

Dressman, M. (2020) Multimodality and Language Learning. In M. Dresmann and R. W. Sadler (eds.) *The Handbook of Informal Language Learning* 39--55. Hoboken, N.J.: John Wiley & Sons.

Gombert, J.-É. (1996) Activités mégalinguistiques et acquisition d'une langue. *Acquisition et interaction en langue étrangère*, 8: 41-55. <https://doi.org/10.4000/aile.1224>

Gordon, D. (2011) Trauma and second language learning among Laotian refugees. *Journal of Southeast Asian American Education and Advancement*, 6: 1--15. <https://www.jstor.org/stable/48684033>

Holec, H. (1981) *Autonomy in Foreign Language Learning*. Oxford: Pergamon / Council of Europe.

Jolley, J. and Maimone, L. (2022) Thirty years of machine translation in language teaching and learning: A review of the literature. *L2 Journal*, 14(1): 26--44.

Montaner-Villalba, S. (2019) The use of Quizlet to enhance vocabulary in the English language classroom. In F. Meunier, J. Van der Vyver, L. Bradley and S. Thouëssy (eds.) *CALL and complexity – short papers from EUROCALL 2019* 304--309. Research-publishing.net. <https://doi.org/10.14705/rpnet.2019.38.9782490057542>

Nunes Vieira, L., O'Hagan, M. and O'Sullivan, C. (2021) Understanding the societal impacts of machine translation: A critical review of the literature on medical and legal use. *Information, Communication & Society*, 24(11), 1515--1532. <https://doi.org/10.1080/1369118X.2020.1776370>

Ollivier, C. (2018) *Littéracie numérique et approche socio-interactionnelle pour l'enseignement-apprentissage des langues*. Graz: Centre européen pour les langues vivantes. <https://www.ecml.at/Portals/1/5MTP/Ollivier/e-lang%20FR.pdf>

O'Neill, E. M. (2019) Online translator, dictionary, and search engine use among L2 students. *CALL-EJ: Computer-Assisted Language Learning—Electronic Journal*, 20(1): 154--177. <http://callej.org/journal/20-1/O'Neill2019.pdf>

Sanosi, A. B. (2018) The effect of Quizlet on Vocabulary Acquisition. *Asian Journal of Education and e-Learning*, 6(4): 71--77. <https://doi.org/10.24203/ajeel.v6i4.5446>

Scott, S. S. and Edwards, W. (2018) *Disability and World Language Learning. Inclusive Teaching for Diverse Learners*. Lanham (Maryland): Rowman and Littlefield Publishers.

Singh, A. and Alexander, P. A. (2022) Audiobooks, print, and comprehension: What we know and what we need to know. *Educational Psychology Review*, 34: 677--715. <https://link.springer.com/article/10.1007/s10648-021-09653-2>

Smith, M. A. (2021) *Inclusive Practices in English Language Teaching*. Oxford: Oxford University Press. <https://elt.oup.com/feature/global/expert/inclusive?cc=it&selLanguage=it>

Trévisé, A. (1997) Métalexique, métadiscours et interactions métalinguistiques. *LINX*, 36: 41-54. https://www.persee.fr/doc/linx_0246-8743_1997_num_36_1_1452

Waluyo, B. and Bucol J. L. (2021) The impact of gamified vocabulary learning using Quizlet on low-proficiency students. *Computer Assisted Language Learning Electronic Journal*, 22(1): 164-185. <http://callej.org/journal/22-1/Waluyo-Bucol2021.pdf>

Webb, S. and Chang, A. C.-S. (2014) Second language vocabulary learning through extensive reading with audio support: How do frequency and distribution of occurrence affect learning? *Language Teaching Research*, 19(6). <https://doi.org/10.1177/1362168814559800>

Endnotes

- i We thank the two anonymous reviewers for their precise and interesting comments. We also thank our colleague Elizabeth Steele for her help with proofreading.
- ii Volunteer students who provided their filled-in course material and those who participated in the interviews signed a consent form.
- iii 54 participants ended the following statement this way “Do you speak English...?”: 9 “not at all”, 20 “a bit”, 10 “not badly”, 15 “very well”.
- iv 54 participants answered the question “When did you stop in your studies?”: 5 “secondary school”, 9 “college”, 40 “university”.
- v *Interactions. Méthode de français* – CLE-International.
- vi These objectives were written at the beginning of each handout and were translated in English and Russian. The use of Russian was criticised by some for political reasons. However, as none of the course designers knew Ukrainian but one spoke Russian, it was easier to implement.
- vii We unfortunately could not consider the seventh principle of UDI “Size and Space for Approach and Use” (Instruction is designed with consideration for appropriate size and space for approach, reach, manipulations, and use regardless of a student’s body size,

-
- posture, mobility and communication needs), as we did not have a choice in classroom allotment.
- viii For MT, see Jolley and Maimone's (2022) review of MT in language teaching and learning. Quizlet has been quite widely used to enhance vocabulary acquisition (Sanosi 2018; Montaner-Villalba 2019).
 - ix We would like to thank our colleague Anna Dal Negro from the Sprachenzentrum der Universität Zürich und der ETH for her insight on the use of audiobooks for language learning.
 - x On the benefit of repetition for language learning, see Ahmadian (2012).
 - xi We checked if they answered the questions correctly and, when they had not, if they had corrected or had their mistakes corrected by a tutor. We also wanted to know if they had managed to complete all the exercises.
 - xii This 25-question survey was provided in English and Ukrainian on learners' cellphones, using the Qualtrics software: www.qualtrics.com. We asked questions about the students' background (knowledge of English, occupation, school degree), questions about the autonomy workshop and questions about their use of MT in and out of the classroom.
 - xiii In these interviews, we tried to understand how students felt about the autonomy workshop and how they used MT systems. We deepened some questions they had already answered in the questionnaire to gather stories and anecdotes.
 - xiv 56 participants answered this question: 19 "no"; 22 "yes"; 15 "no answer".
 - xv 57 participants answered this question: 47 "yes"; 2 "no"; 8 "no answer".

Authors' short biographies

Sara Cotelli Kureth is head of the Language Centre and Titular Professor of the University of Neuchâtel (UniNE). She manages the UniNE division of the project "Digital Literacy in University Context" (DigLit).

Hasti Noghrechi is a doctoral student and French lecturer at the Institute of French Language and Culture at the University of Neuchâtel. She also works in the DigLit project.

Figures

Fig. 1. Students' knowledge of English

Fig. 2. Students' formal education levels

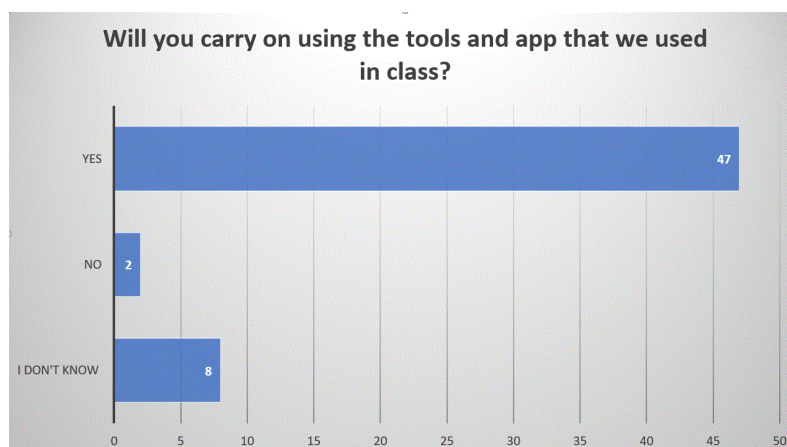


Fig. 3. Will you carry on using the tools and apps (conjugueur, reverso dictionnaire) that we used in class in the future? (June and July survey, n=57)