Machine translation literacy: a panorama of practices at Swiss universities and implications for language teaching

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Abstract. This short paper presents the quantitative results of an online survey of Swiss university students and staff on their use of Machine Translation (MT). The analysis of the 3,713 responses throws light on the context, purposes, degree of successive revisions, and ethical considerations surrounding the use of MT. With regards to language teachers and students, the quantitative data allows us to draw three preliminary conclusions: MT is a well-established but unspoken practice in Swiss universities, MT is not seen as an alternative to language learning, and MT is seen and already being used as a tool to improve language skills.

Keywords: machine translation, machine translation literacy, digital literacy.

1.   Introduction

Fostering language diversity is particularly important in Switzerland, with its four national languages and widespread use of English as a lingua franca. This may be facilitated by recent advances in neural MT (Forcada, 2017), which have led to frequent and generalised use (Nurminen & Papula, 2018). However, users are rarely aware of the pitfalls of such technologies and therefore tend to blindly trust them (Martindale & Carpuat, 2018). Students in language classes are no

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exception: while they already know and employ free MT solutions (O'Neill, 2019), they are not aware of how these technologies work and how reliable their output is, which leads to uncritical use (Zhu, 2020). Conversely, although teachers are familiar with these tools, they rarely use them in language teaching, being reluctant to adopt new technologies which they fear may be disruptive or even threatening (García & Pena, 2011; Hiew & Chew, 2016; Niño, 2008; Yamada, 2019).

In this context, a four-year project started in 2021 to develop MT literacy (Bowker, 2020) among Swiss university language teachers and students. The first stage involves gaining a better understanding of current practices in language teaching and learning in higher education in the MT era by asking students and staff about their use of MT. This short paper presents the main quantitative results of the survey and the initial conclusions that can be drawn from it.

2. Method

The survey was conducted in four Swiss universities amongst students and staff. It consisted of 248 close-ended and open-ended questions, addressing the following topics: awareness of MT, user experience, beliefs and attitudes, training needs. The data were collected and managed using REDCap electronic data capture tools (Harris et al., 2009) in three different languages (German, English, and French). We gathered a total of 3,713 responses. In the following, we focus on the university teaching staff (666 respondents) and students (1,926 respondents)[5].

3. Results and discussion

The analysis confirms that a huge majority of respondents (94.8% for staff, 97.2% for students) have already used MT systems. Both teachers and students use MT regularly (on average a little less than weekly) in their academic work, more often than for leisure activities, non-academic work, or private life (Figure 1). They use MT for all kinds of documents related to their main activities within the university (see Figure 2).

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5. Students: 67% female, 28 male, 5% other or n/a; ages ranged from 26 to 65+, with 60% in their early twenties. Teachers: 51 female, 44,6 male, 2.4% other or n/a; ages ranged from 18 to 65+, with 62% between 46 and 55 y.o.

Figure 1.   Frequency of use of MT in various contexts
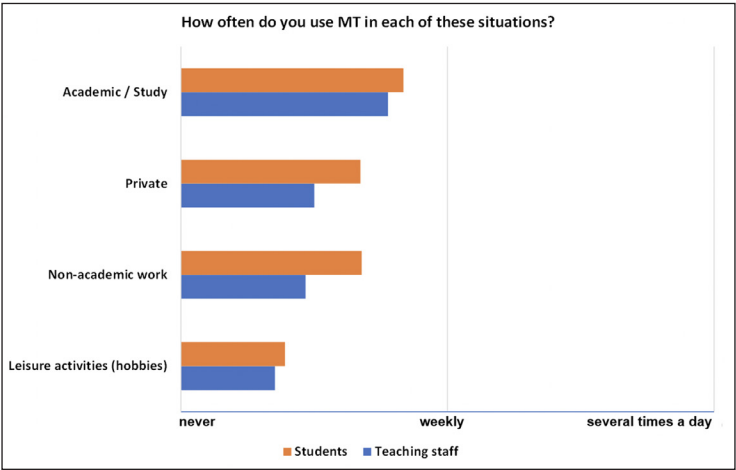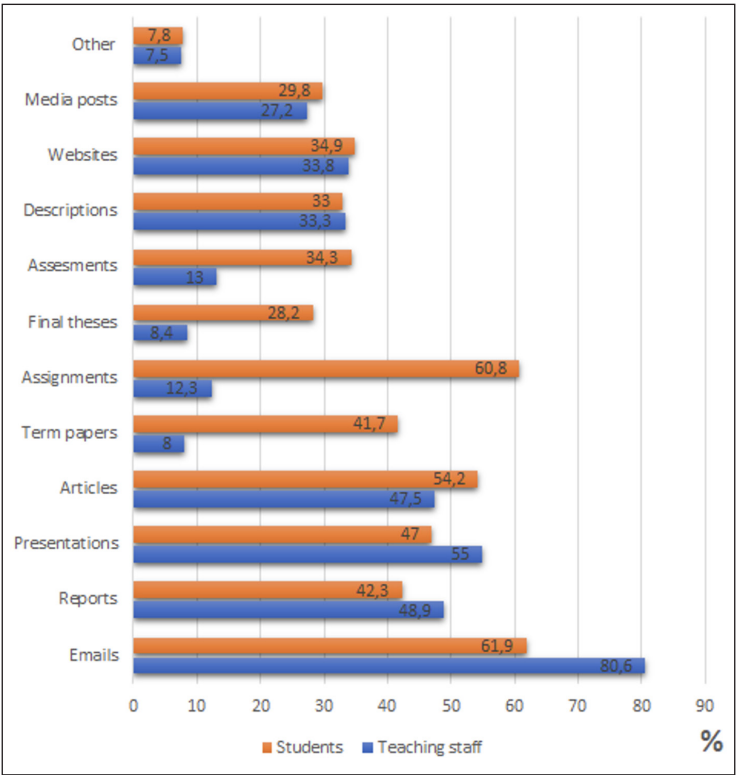

Figure 2.   Documents for which MT is used

The second main finding is that, although the use seems widespread, there is very little talk or training about MT at universities. For example, only 4% of teachers say they explain to their students how MT works and its potential and risks, compared to 18.8% who mention some basics, and 77.1% who do not mention MT at all. This closely matches the mirror question we asked students: 83.9% have never had any explicit instruction on using MT. Yet, when asked if they understand how MT systems work, students seem to be quite confident, more so than teachers (Figure 3 and Figure 4, the red dots to the right of the centre line indicate the centre of the distribution).

Figure 3.   How confident are you that you understand how MT systems work? (students, n=1,435, on a scale from 0 to 100)
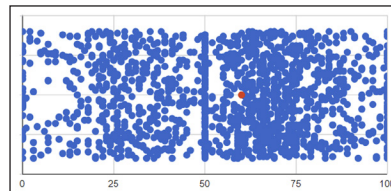
Figure 4.   How confident are you that you understand how MT systems work? (teaching staff, n=511, on a scale from 0 to 100)
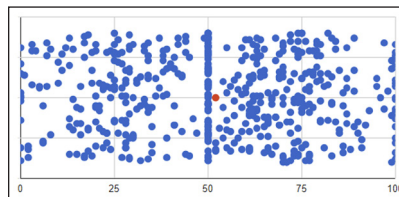
Students also seem to have more trust in their peers' and their teachers' awareness of the risks of using MT (Figure 5), while teachers take a more sceptical stance. Such different perceptions of one's own and others' knowledge show that there has been very little discussion about the topic. This silence around a tool that is already established in our lives bears many risks, especially since MT is still prone to errors (Koehn & Knowles, 2017), but these are not always easy to spot (Loock, 2020). Finally, less than 10% of teachers and students claimed the existence of official guidelines, training or explicit instructions on MT at their universities.

The third finding is that, although the question has been raised in the media, most students and teachers do not see MT as a replacement for language proficiency (Figure 6; see also Hellmich & Vinall, 2021). This is not due to poor performance

by MT systems: both students and teachers are, on average, satisfied with MT output 65% of the time. Both groups rather see MT as a tool (Figure 7), and 40% of the students even indicated that they already use MT to improve their language skills. This shows the importance of integrating MT into language teaching approaches, not as a constraint but as a rightful CALL tool (see also Briggs, 2018).
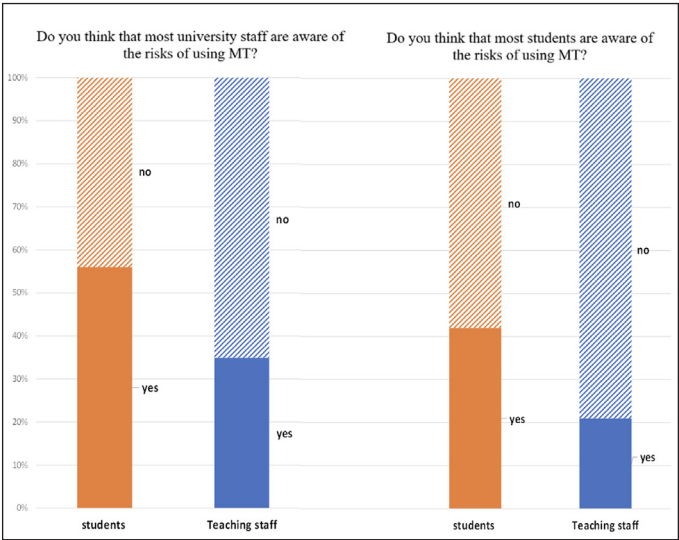
Figure 5.   Estimated others' awareness of risks

Figure 6.   How do you think MT will change the need to learn languages?
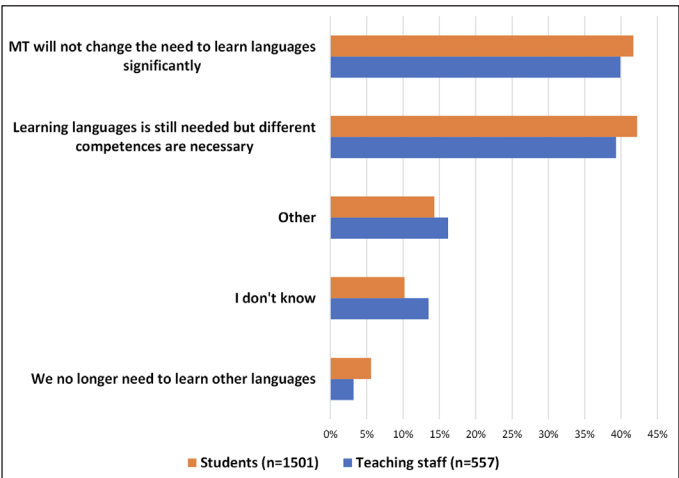
Figure 7.   How do you think MT will change teaching and learning practices?
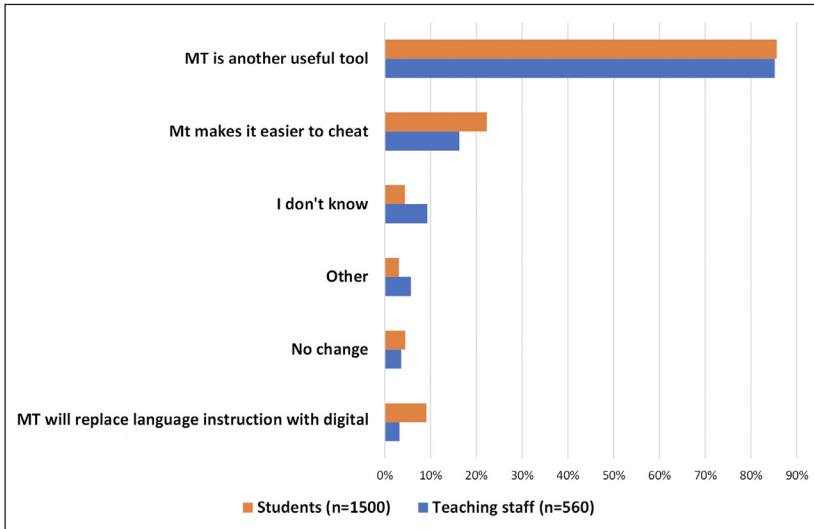
4.   Conclusions

The quantitative results of the survey allow us to draw three preliminary conclusions: (1) using MT is common practice in Swiss academic contexts but is not part of the institutional and/or pedagogical discussion; (2) in the view of most respondents, the need to learn languages will not be affected by MT; and (3) most respondents see MT as another useful tool to improve language skills and learn languages.

On the one hand, these findings confirm much anecdotal evidence informally gathered from language teachers; on the other hand, they also show that teachers' fears might not be justified. More generally, the panorama of practices revealed through this survey shows the urgent need for including MT literacy in efforts to improve digital literacy among both teachers and students.

5.   Acknowledgements

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