The use of machine translation in L2 education: Japanese university teachers' views and practices

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Abstract. Machine Translation (MT) is receiving increasing attention within language education due to both its affordances and the potential it offers for academic misconduct. To understand more about teachers' views and practices, a survey was conducted with 153 foreign language (L2) educators who teach at Japanese universities. The survey examined their; (1) use of MT to assist with L2 reading, writing, speaking, and listening, both personally and in their courses; (2) views on MT in language education; and (3) knowledge of how to help students use MT effectively and their willingness to learn about this. The results indicated that most teachers supported the use of MT as a learning tool, but many had concerns over its misuse. Few felt they had enough knowledge to guide students toward effective use and the vast majority wanted to learn more about how to do so. These findings highlight a need for teacher support and underscore the necessity of more research and workplace discussions on the integration and regulation of MT within L2 education.

Keywords: machine translation, online translator, language learning, L2 teacher practices.

1. Introduction

Since the adoption of neural networks, e.g. Google in 2016 and DeepL in 2017, MT has developed dramatically with output becoming increasingly accurate. This has brought MT into a more central position in L2 education, partly due to its learning affordances (Lee, 2021) and partly because of its real and

perceived potential for misuse (Kennedy, 2022). Research has pointed toward deficiencies in teachers' awareness of student use (Alm & Watanabe, 2021), so it is important to learn more about MT from teachers' perspectives. This study aims to understand how language teachers view and use MT. Personal experiences can influence teacher cognition, so teachers' own use of MT and their integration of it into their courses were explored. The central Research Questions (RQs) are as below.

> RQ1: How do language teachers use MT, both personally and in their courses?

> RQ2: What are teachers' views on the use of MT in the context of L2 education?

> RQ3: Do teachers feel they have enough knowledge to help students use MT effectively to develop their L2 skills or do they want to learn more about this?

2.   Method

Data were collected through an online survey (supplementary materials) created with Testmoz. This survey targeted foreign language teachers at Japanese universities. Calls for anonymous volunteers were posted in Facebook groups for Japan-based teachers (Online Teaching Japan; JALT SIGs). The RQs were addressed through closed and Likert-scale Survey Questions (SQs). The survey also gathered background information about participants and invited them to take part in follow-up interviews for a later phase of the study. SQs were developed by the researcher and refined with feedback from two reviewers. One reviewer was selected for their expertise in MT research to increase content validity. Raw statistical data were converted to percentages for descriptive analysis.

Most of the 153 participants were L1 speakers of English (134) and Japanese (11) or both (1). There were also L1 speakers of the following languages: Indonesian, Portuguese, Italian, Urdu, Punjabi, Hindi, Filipino, Catalan, Spanish, French, German, Turkish, and Hungarian (including those with multiple L1s). Most taught English as a foreign language (147), three taught English plus another language (French, Spanish, Italian), and three taught other languages (Indonesian, Spanish, German). The majority spoke or studied L2s, with only four monolinguals.

3.   Results and discussion

There were 153 valid responses to the survey. All figures and tables draw on the full sample, with percentages rounded to the closest whole number.

RQ1 explored how teachers use MT personally and as educators. Results showed teachers were familiar with MT through personal usage (Figure 1, SQs 5-8). Regular usage (very often/often) in their personal lives was far more common for reading 64% (98/153,) and writing 43% (66/153,) than listening 5% (7/153) and speaking 6% (9/153).

Results revealed that teachers helped students use MT to develop reading and writing skills more than listening and speaking skills (Figure 2, SQs 9-12). This reflects their own usage patterns of MT to some extent, so familiarity as users may have influenced their teaching practices. However, a comparison of Figure 1 and Figure 2 shows that teachers' integration of MT support into language courses was much lower than their personal use.

Teachers were also asked about their experiences of discussing (un)acceptable use of MT with their students and setting usage guidelines. 21% (32/153) did it in all of their language courses, 51% (78/153) did it in some, and 28% (43/153) did not do it in any (Figure 3, SQ17).

In summary, teachers' personal use of MT was widespread, but far fewer introduced it to students as a learning tool. Many addressed appropriate use and offered usage guidelines, but few did this in all courses.

Figure 1.   Teachers' personal use of MT in their L2s (N=153)
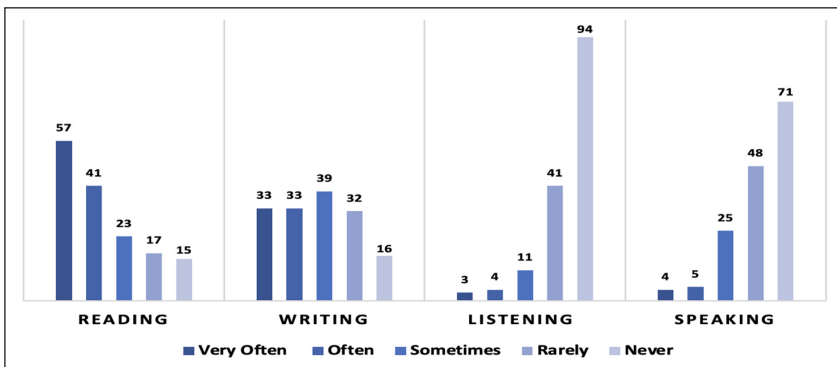
Note: see survey for frequency definitions

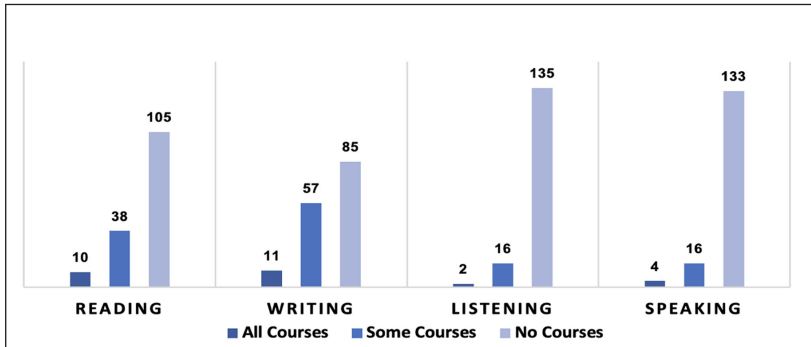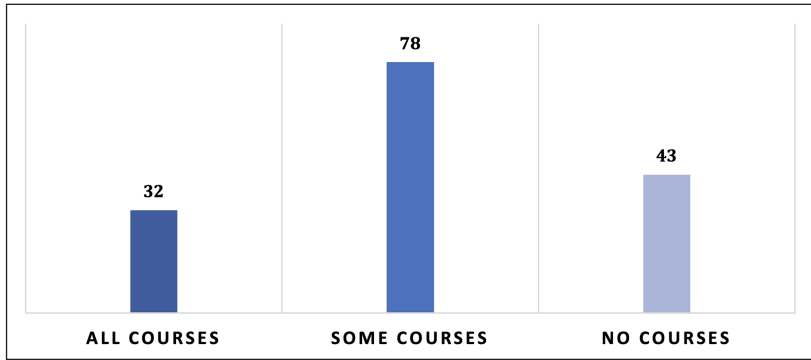Figure 2.   Teachers' MT support for students (N=153)

Figure 3.   Level of teachers' guidance on acceptable MT usage (N=153)

RQ2 investigated teachers' views of MT in L2 education. First, the survey gauged teachers' views on MT's effectiveness as a tool for L2 skill development. Table 1 (SQs 18-21) shows that most felt it was effective (strongly agree/agree) for writing 71% (108/153) and reading 67% (102/153). Only a minority viewed it as effective (strongly agree/agree) for speaking 37% (56/153) and listening 36% (55/153).

Table 1.   Perceptions of MT's effectiveness for L2 skill development

	Strongly agree	Agree	Neither	Disagree	Strongly disagree
Writing	27% (42)	43% (66)	22% (33)	7% (11)	1% (1)
Reading	22% (34)	44% (68)	24% (36)	9% (14)	1% (1)
Speaking	4% (6)	33% (50)	43% (66)	15% (23)	5% (8)
Listening	5% (7)	31% (48)	44% (68)	14% (21)	6% (9)

Table 2 (SQs 13-14) shows teachers' perceptions of their students' use of MT. Most thought it was used in beneficial ways, with 71% (109/153) believing at least some students (all/most/some) used it to learn their L2. However, there was substantial concern over misuse, with 55% (84/153) believing at least some students (all/most/some) used MT to cheat. Interestingly, while 11% (17/153) felt all students used it to learn, only 1% (2/153) felt it was universally used for cheating. This suggests that teachers are certainly concerned over misuse but tend to view MT as more of a support tool than a cheating aid.

Table 2. Teachers' perceptions of students' use of MT

	All students	Most students	Some students	A few students	None	No thoughts
Perceptions of student use of MT for L2 learning	11% (17)	24% (36)	37% (56)	24% (36)	3% (4)	3% (4)
Perceptions of student use of MT to cheat	1% (2)	14% (21)	40% (61)	26% (40)	14% (21)	5% (8)

Despite concerns over inappropriate use, few teachers strongly agreed (1%) or agreed (16%) that MT use for coursework should be very restricted or banned (Table 3: SQ15); 20% were undecided and 62% (95/153) were in disagreement, suggesting that banning MT is not the way forward. However, most participants strongly agreed (48%) or agreed (39%) that it is essential for teachers to discuss (in)appropriate use of MT with students in all language courses and provide guidelines for acceptable use (Table 3: SQ16). This shows a willingness for educators to accept MT in L2 education provided there is guidance. Nevertheless, Figure 3 indicated only 21% of teachers actually did this in all courses, illuminating a gap between beliefs and practices that warrants further examination.

Table 3. Teachers' perceptions on the need to restrict MT usage and provide guidelines

	Strongly agree	Agree	Neither	Disagree	Strongly disagree
1. MT should be heavily restricted or banned	1% (2)	16% (25)	20% (31)	44% (67)	18% (28)
2. MT usage guidelines are essential in all language courses	48% (73)	39% (59)	12% (18)	2% (3)	0% (0)

RQ3 investigated teachers' knowledge of how to help students use MT to develop L2 skills and their willingness to learn about this. Table 4 (SQs 22-23) shows that only 31% (48/153, strongly agree/agree) felt they had sufficient knowledge to help students use MT effectively. The vast majority (84%, 129/153, strongly agree/ agree) wanted to learn more, highlighting a need for teacher training materials and programs.

Table 4.   Teachers' evaluation of their MT knowledge and willingness to learn more

	Strongly agree	Agree	Neither	Disagree	Strongly disagree
1. Have enough knowledge to help students use MT	5% (7)	27% (41)	22% (33)	41% (62)	7% (10)
2. Want to learn more about how to help students use MT	37% (56)	48% (73)	12% (18)	3% (5)	1% (1)

4.   Conclusions

This study indicated that teachers' personal use of MT, their beliefs on its usefulness, and integration of MT support into their courses aligned somewhat, with reading and writing ranking higher than listening and speaking in all three areas. However, teachers' inclusion of MT in their courses was more limited than their private use of these tools. There was concern over MT's potential as a cheating aid, but few teachers wanted it heavily restricted or banned. Despite widespread agreement on the necessity of discussions and guidelines for appropriate use, only a minority had addressed this in all courses. Furthermore, many felt they had insufficient knowledge to help students use MT effectively for L2 skill development, and the vast majority wanted to learn more about this. These findings signal a need for increased discussion within L2 educational settings, greater teacher awareness and support (training materials/programs), and more research in the field of MT in L2 education.

5.   Supplementary materials

https://research-publishing.box.com/s/hkpqr2t68zxu4qq0bqgjivb1wwcr9qdh

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