
Perceptions and Practices of Machine Translation Among 6th-12th Grade World Language Teachers

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Many researchers and educators have studied the use of Machine Translation (MT) in the L2 classroom, yet little data exists on World Language 6-12th grade educators' perceptions of MT. This study inquires into the ways that middle school and high school L2 educators perceive MT and how educators are adapting their assignments in light of its use. The results of this study show that a punitive approach is prevalent, in that MT is largely banned, and that infractions result in a wide array of consequences for students. The findings also suggest that a more deliberate inclusion of MT practices in the L2 classroom would be beneficial to teachers and students. For this reason, the study concludes with pedagogical suggestions regarding the incorporation of MT in the L2 classroom.

INTRODUCTION

Machine Translation (MT) has captured the attention of audiences in mass media and the narrower realms of academic research in the last 15 years. The industry has inspired acronyms such as FOMT (Free Online Machine Translation); OT (Online Translators); Online Machine Translation (OMT) and MT (Machine Translation). (For the purposes of this paper, we will refer to technologies that translate a string of words from one language to another as MT.) Google Translate, especially, has been the focus of interest since its development in 2006. People look at its shallowness (Hofstadter, 2018) and its flaws (The Tonight Show, 2019). Notably, its flaws are increasingly becoming less obvious, as the tool has moved to translating whole sentences instead of fragments and “the system learns over time to create better, more natural translations” (Turovsky, 2016, para. 2).

Translation is happening in the home, at businesses, on desktops, and on phones. In December 2020, for example, Amazon launched a live translation feature on its Echo devices. Google Assistant has an Interpreter Mode. Smart phones feature apps such as a Google Translate camera tool, SayHi Translate, iTranslate, Papago, TextGrabber, Microsoft Translator, and WayGo. There is public money behind translation projects. In 2020, the Department of Homeland Security awarded funding to a company to build a portable, stand-alone system for language translation that would work both connected and offline. And in the private sector, the industry is burgeoning. The Language Service Provider (LSP) industry, which is the brains (and machines) behind interpreting, translating, subtitling, localization and transcription, was worth 46 billion U.S. dollars in 2018, and was estimated to reach 56 billion

dollars in 2021 (Mazareanu, 2021). In 2021, Google debuted its Live Translate feature for their Pixel phones, which translates chat on the spot.

In the academic environment, translation technology among students has grown, mirroring this broader presence of translations in the home and mobile environment. Despite its shallowness, hilarity, and flaws, MT is indeed “ubiquitous” among students learning another language (Bin Dahmash, 2020). Confoundingly, students report that Google Translate is unreliable, but rely on it anyway (Clifford et al., 2013; Henshaw, 2020; O'Neill, 2019b). However, its use has been widely controversial in academic environments, notably among colleges and universities, where much of the literature of the last decade has centered. Indeed, L2 educators and researchers have looked closely and with interest at the growing prevalence of MT among students in the context of higher education. A rich literature on the landscape of MT (Correa, 2014; Ducar & Schocket, 2018; Faber & Turrero-García, 2020; Jiménez-Crespo, 2017; Jolley & Maimone, 2015; Niño, 2009; Stapleton & Leung, 2019) has painted an alternately hopeful and bleak picture of learners' uses and abuses of these technologies at colleges and universities, both domestically and abroad, and has also offered an array of pedagogical solutions (Correa, 2014; Ducar & Schocket, 2018; Enkin & Mejías-Bikandi, 2016; Henshaw, 2020; O'Neil, 2019a).

The vast majority of these studies were written in the context of college and university language instruction, but little is known about middle and high school World Language (WL) educators' perceptions and policies around these tools. To contribute to the existing literature, the present study aims to ascertain the lesser-known perceptions and practices regarding MT among 6th-12th grade WL educators. The goal of this endeavor is to offer insight into how MT is viewed as an instrument to support language learning as we head into the third decade of the 21st century. Such a study is necessary since these perceptions, pedagogical practices, and any punitive consequences for students may affect students' own perceptions and use of these tools not only in middle and high school, but also as they move on to a higher education context. We conclude the study with proposals for addressing the issue of MT in the classroom.

BACKGROUND

As instructors and students in all educational contexts across the country transitioned to online learning in March 2020, comments regarding MT were frequent and visible as educators created groups and online forums devoted to remote language learning. On ACTFL Central (a forum associated with the American Council on the Teaching of Foreign Languages) and social media, questions and topics associated with MT arose from college faculty as well as from middle and high school language teachers, especially regarding disciplinary actions and an overall sense of frustration with MT use by students. In looking to understand the context of the observations made by middle and high school teachers, we decided to investigate further.

In the last decade, multiple studies have focused on L2 instructors' attitudes towards the use of MT as a pedagogical tool (Clifford et al., 2013; Faber & Turrero-García, 2020; Jolley & Maimone, 2015; Stapleton & Leung, 2019) and have found that the majority of teachers are skeptical of MT's role in the language classroom. Clifford and colleagues (2013) reported that of 43 university faculty members who were asked about their degree of approval of MT use by students, 77% disapproved or strongly disapproved. They also found that 42% of

instructors considered any use of MT to be cheating, while 37% indicated that it depended on the context or the extent to which MT is used. In their study, Faber and Turrero-García (2020) found that only 9% of the 32 instructors surveyed allowed the use of MT during class time, while 60% prohibited it, and 31% only permitted its use “under specific conditions or that their use is discouraged, but not disallowed.” When asked about MT use in course assignments, only 3% of instructors permitted MT use “without restriction;” however, 63% reported not allowing its use and having a written policy stating so.

For some educators, the boundaries for acceptable use depend on the purpose of learning. In one of the few studies looking at the issue at the primary level (among 11-12 year olds), Stapleton and Leung (2019) interviewed 12 teachers regarding their beliefs about MT as a pedagogical tool. Nine of them indicated that while they were not necessarily against it, they were “cautious about the extent to which MT should be exploited as a learning tool” (p. 25). All of them clearly stated that MT should not be used by students to translate passages or sentences written in their L1. Similarly, Jolley and Maimone (2015) reported that most of the 41 university educators surveyed in their study believed that using MT to translate individual words was within ethical bounds. However, using MT to translate paragraphs or passages was completely unethical.

A major takeaway from other studies that have examined MT in L2 contexts is that students are resorting to MT even when the instructor or the course guidelines explicitly tell them not to (Correa, 2014; Garcia & Pena, 2011; Niño, 2009). Among the reasons provided as to why students should refrain from MT is its lack of accuracy, but this is becoming questionable in the light of advancements in the technology. Google Translate, for example, is improving (at least in Spanish), now accounting for different registers (tú vs. Ud.), the subjunctive in relative, nominal and adverbial clauses, and long-distance agreement.

Reflecting the fact that “lack of accuracy” is no longer a major reason for dissuading students from Google Translate, concerns over academic integrity are rising as teachers notice that students’ presentational output (writing and speaking) is, in fact, too accurate for their level. One can certainly understand why a major concern among L2 teachers is academic dishonesty insofar as the students’ product may not represent their work; this is especially true in light of studies that have found that students who use MT in fact produce more accurate or higher quality written texts than the ones who do not (Correa, 2014; Giannetti, 2016; Lee, 2020) and with higher degrees of lexical diversity (Fredholm, 2019), and that the use of MT after training with the tool results in higher grades (O’Neill, 2016; 2019a).

Although the above studies point to increased accuracy, still others inform us that the use of a tool like Google Translate has the potential of hindering the development of analytical skills (Tarsoly & Valijärvi, 2019) and that the lack of familiarity with both Google Translate and the L2 can hamper their success (Giannetti, 2016). In light of such findings, some are urging for a richer and more advanced understanding of MT systems to fully grasp its benefits and drawbacks in the language learning process (Jiménez-Crespo, 2017)

The most recent studies encourage educators to embrace MT as a pedagogical tool that can help learners enhance their language skills (Ahn & Chung, 2020; Fredholm, 2019; Lee, 2020; O’Neill, 2019b; Stapleton & Leung, 2019). Indeed, there has been a notable shift in the last few years as researchers advocate more vociferously for a responsible use of MT in the L2 classroom not only to discourage academic dishonesty, but to increase metalinguistic awareness (Correa, 2014; Enkin & Mejías-Bikandi, 2016), motivation, and confidence (Lee, 2021; Tarsoly & Valijärvi, 2019). Although the perceptions of and issues surrounding MT have

been widely explored at the university level, there is a notable lack of studies centering on the perspectives of World Language educators in middle school and high school, which our paper turns to now.

Approaches to MT Among World Language Teachers

The parameters of the present study are defined by the following three research questions:

RQ1: What are 6-12th grade WL educators' perceptions of MT and how do educators engage with students on the topic of MT?

RQ2: What disciplinary consequences exist for the student who uses MT?

RQ3: What practices are WL educators observing in their students' use of MT, and are educators adapting their assignments and assessments in light of this use?

DESIGN

To reach 6th-12th grade WL educators, we designed a survey using Qualtrics, an online tool that allows researchers to build, distribute, and analyze survey responses. The questions in the present survey were adapted from a survey of college students' use of MT developed in 2011-2012 by us in collaboration with a team of French and Spanish language faculty at Duke University. The 2011-2012 instrument was designed after conversations with colleagues across campus on the impact of technology on learning patterns. The authors of the present study modified the questions from that survey in three ways. First, the information we gleaned from the extensive qualitative data we received from Duke University students in that survey led to more targeted questions. Second, the questions were adapted to reflect the reality of many teachers in 2020 who were teaching online or in a hybrid format. Finally, the informal observations of conversations on social media regarding MT use led to asking questions to inquire more deeply into certain topics. We solicited feedback from two high school teachers to review the survey flow, to ensure that the multiple-choice answers captured an appropriate range of responses to our questions, and to see if there was important information that we had not asked. The online survey, entitled "Machine Translation: World Languages Teachers' Perspective," contained twenty-one closed-ended questions. The data collection instrument used in the present study can be freely downloaded on the IRIS Database iris-database.org.

The idea behind survey research is "the recognition that the characteristics, opinions, attitudes, and intended behaviors of a large population...can be described and analyzed on the basis of questioning only a fraction of the particular population" (Dörnyei & Csizér, 2014, p. 74). Keeping in mind the sampling of questionnaire content, we made sure to identify the critical concepts that were "likely to play a defining role in shaping the issue at question"; we eliminated all questions that were of "peripheral interest but not directly related to the variables and hypotheses that the questionnaire had been designed to investigate" and made sure that the questionnaire was not too long by "covering every possible angle." We aimed, as urged by Dörnyei and Csizér, to "focus on the key issues" (2014, p. 75).

Data Sources and Collection

We conducted a convenience sampling of WL educators on Facebook because of the ease of accessibility in reaching teachers through this medium. Data were collected through the Qualtrics online survey in late November and early December 2020. The survey was shared through the following Facebook groups: Tech for World Language Teachers, World Language Teacher Lounge, World Language Teachers - Temporary Remote Learning, Teachers of Spanish Heritage Speakers, and Spanish Teachers in the U.S. We also posted a link to the survey via ACTFL Central, where members hold discussions on a variety of topics. Finally, Ann Marie Gunter, a WL Consultant for the North Carolina Department of Public Instruction, distributed the survey to WL teachers and coordinators across the state.

Participants

WL educators from 42 states responded to the survey, 41% of whom teach in North Carolina. Of the 336 survey respondents, 85% were public school teachers; 81% were high school teachers; 69% were Spanish teachers; 22% were French teachers; 57% reported having sixteen or more years' experience teaching; and 43% reported teaching primarily in the elementary (novice) level. We excluded elementary school WL educators for practical reasons, since elementary-aged students are less likely to be interacting with translation programs on a regular basis. Although 336 participants started the study, dropout attrition caused the sample size to dwindle. We have noted the number of respondents for each question below to be transparent about participant flow and attrition.

Data Analysis Methods

We used a mixed-methods research approach to gather data, creating primarily quantitative data (closed-ended questions), but also allowing for elaboration on these questions, which produced qualitative data. NVivo 12 was used to code and analyze the data, manually coding to nodes (themes) using an inductive coding scheme (coding to nodes as themes emerged). Excerpts from the data were used to define all coding decisions. The quantitative data in this paper is presented using descriptive statistics produced in Qualtrics, and charts are presented using Qualtrics visualization tools.

FINDINGS

Findings are presented in this section for the three research questions—perceptions of MT by WL educators, disciplinary consequences for students, and adaptations to current practices according to the themes that emerged during analysis.

RQ1. What are 6-12th Grade WL Educators' Perceptions of MT and How do Educators Engage with Students on the Topic of MT?

Personal Use

To begin to address RQ1, WL educators were asked how frequently they themselves use MT. Teachers overall were infrequent users of Machine Translation for either academic or non-academic purposes, and only a small percentage used MT “frequently” for either

purpose. For academic purposes, of the 336 respondents, 11.6% (N=39) reported they frequently used MT; 48.8% (N=164) reported they use MT infrequently; and 39.6% (N=133) reported never using MT. For non-academic purposes, results were similar, with 332 respondents reporting that 8.4% (N=28), 60.5% (N=201) and 31.0% (N=103) reporting frequently, infrequently, and never using MT.

In terms of WL educators' opinions of the use of MT by their students, the results show that of the 332 respondents, 80% either "strongly disapprove" (39.5%, N=131) or "disapprove" (40.7%, N=135) of its use by their students.

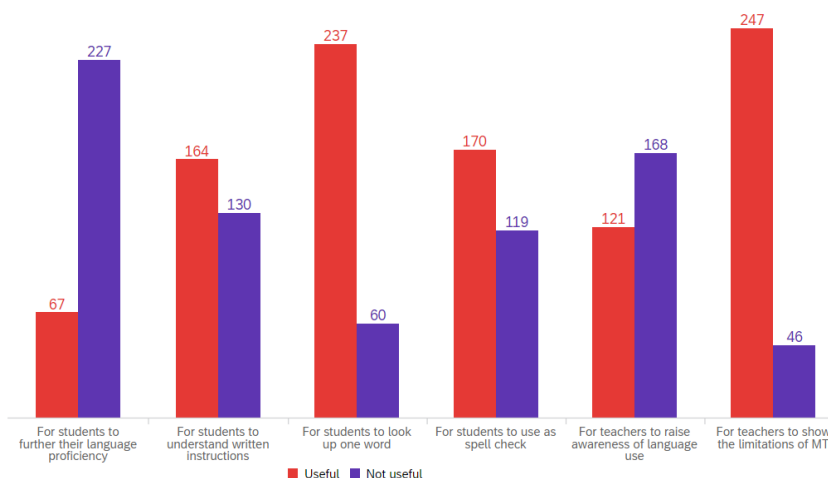


Figure 1. What is your opinion of MT in these contexts?

Figure 1 reveals that 227 out of 294 WL educators (77.2%) generally landed on "Not Useful" when asked about MT's helpfulness in furthering a student's language proficiency, but "Useful" (247 out of 293 respondents, or 84.3%) for teachers to show the limitations of MT. Also considered "Useful" is allowing students to use MT to look up one word (237 out of 297 respondents, or 79.8%).

In terms of how often teachers speak to their students about MT use, of the 336 respondents, 55.7% (N=187) answered "Frequently", while 32.1% (N=108) responded "Occasionally" and 9.5% (N=32) responded "Depends." "Never" is how 2.7% (N=9) responded.

Intervention

Turning from the frequency of these conversations to their content, 67.1% (N=196 of 292) of teachers reported that they discouraged the use of MT by showing examples of inaccuracies; 59.6% (N=174) reported that it was an honor code violation; 40.4% (N=118) encouraged an intelligent use of MT by telling them about the pros and cons, while 38.4% (N=112) admonished students not to use MT because it will interfere with learning another language.

Twenty-eight (9.6%) WL educators responded "none of these scenarios reflect what I do" and offered additional information such as, "I tell them how interesting their own

language is and how boring MT language is. That I love their errors and am bored by perfection.” The largest theme in these responses was “MT is helpful at times” (46.4% with 13 references). One teacher reported, “I ask students to keep a log of vocabulary, expressions, and grammatical features that they glean from using MT.” The second largest theme was “MT is unhelpful in all circumstances” (21.4% with 6 references), where one teacher commented, “We talk about why the use of MT is inappropriate for class where they are trying to learn.”

Parameters of Use

We found that more than half of teachers approved of MT for students to look up a word or short phrase (see Figure 2).

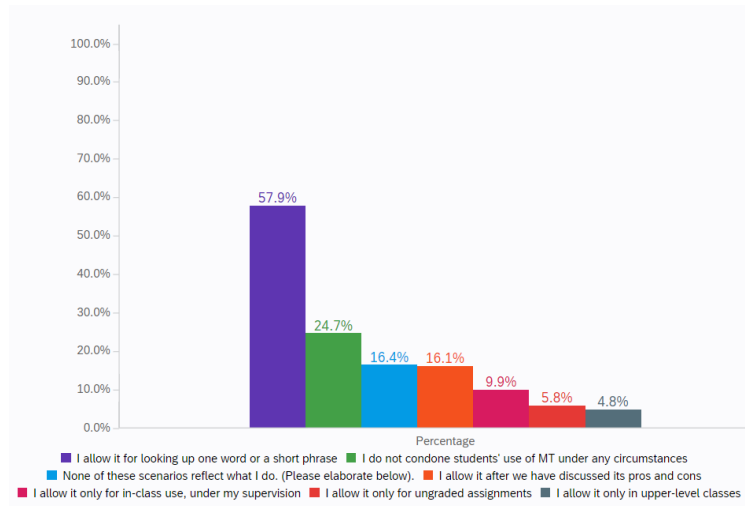


Figure 2. Do you establish specific parameters for the use of MT? Check all that apply. (N=292)

Of the themes that emerged from the 41 teachers who contributed open-ended responses associated with “None of the scenarios reflect what I do,” the most prominent was “Use a dictionary instead, or look up one word only” with 18 references (43.9%).

A cross tabulation of data in the above figure with how many years of experience teachers have in the classroom reveals additional findings. For instance, for the response, “I do not condone students’ use of MT under any circumstances,” newer teachers, with five or fewer years of experience, were more tolerant (only 6.9% checking this box) in contrast to teachers with 6-10 years (19.4%); 11-15 years (19.4%); 16-20 years (12.5%) and 20+ years (41.7%).

The WL Profession

To dig deeper into WL educators’ perceptions of MT, the survey asked their thoughts on MT as it relates to the future of language teaching and learning.

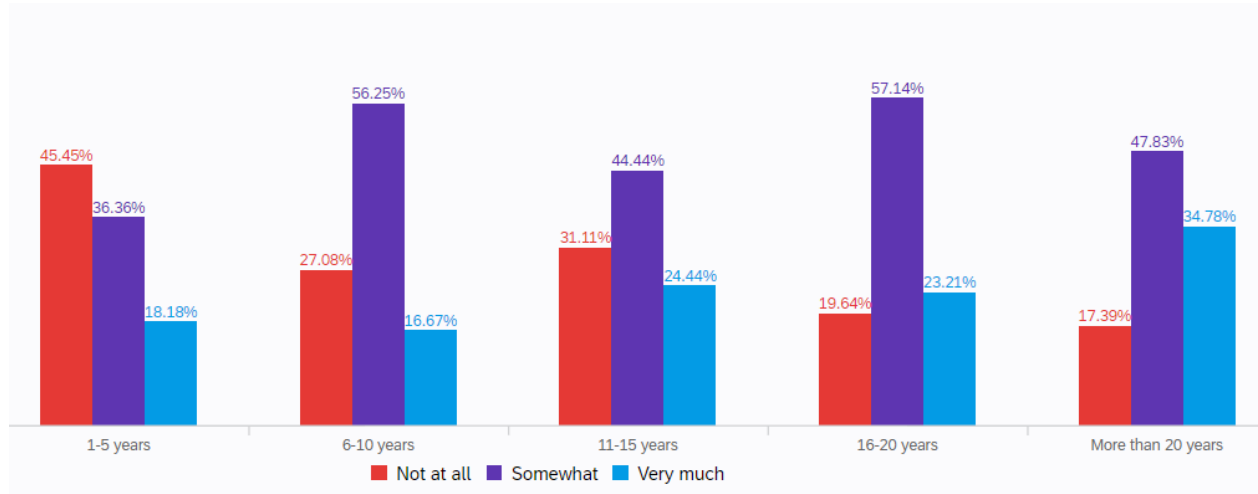


Figure 3. To what degree does MT threaten the World Language teaching profession?

A cross tabulation shows that the more experience one has, the more likely it is that the teacher indicates that MT “very much” threatens the World Language teaching profession. Those who have 1-5 years’ experience are more optimistic about the future of the profession in the face of MT, only 18.18% (N=6 of 33 respondents) indicating that MT is “very much” a threat, whereas 34.78% of educators with more than 20 years’ experience (N=40 of 115 respondents) show that MT “very much” threatens the WL teaching profession.

WL Teaching

We also asked “What role do you think MT will play in the future of World Language teaching?” Of the respondents (N=298), 57.7% (N=172), selected “MT will encourage the rethinking of the kinds of writing assignments given” followed by 53.4% (N=159), who selected that “MT will become like a calculator in math - a tool that is sometimes helpful.” The third most selected choice, 46.6% (N=139), was “MT is going to get better and better, and students will rely on it more and more” while 34.2% (N=102) selected that “MT will need to be incorporated in the curriculum in a more deliberate way.” Of note is the indication by 28.9% of respondents (N=86) who selected that “languages will be taught less and less in the future because of technologies like MT.” Reflecting the pervasiveness of MT, only 5% of respondents (N=15) saw that translators will diminish as a student’s resource in L2 classes.

Upon coding the 11.7% (N=35) open-ended responses that accompanied “Other,” we found seven references (20%) that fell under the theme “hinders student learning,” with responses including ideas such as, “will decrease the level of learning and engagement” and “learners get lazier and unable to use critical thinking skills.”

RQ2: What Disciplinary Consequences Exist for the Student Who Uses MT?

Disciplinary Action

Related closely to RQ1, which sought to understand WL educators’ perceptions of MT, RQ2 seeks to find out what disciplinary consequences exist for the student who uses MT. Our study shows that there is a lack of consensus surrounding issues of academic dishonesty

and MT use. When asked if the World Language program at their school addresses MT, 53.8% of 333 respondents answered *yes*.

For those who responded that their school has a policy, we invited them to explain or to cut and paste the policy. Here is one example: “Electronic translators are NOT ALLOWED. The student will receive a referral to the administration as academic dishonesty.” And another:

The World Languages Department endorses the use of technology as a tool for learning, not as a tool to complete tasks. This means that, while the use of a translation app (Google Translate) is NOT allowed, an online dictionary is allowed. [...] This is a ZERO TOLERANCE policy.

We asked teachers what they do when faced with work that they suspect has used MT in a way that violates their policy or in a way that goes against established parameters. The question, which invited respondents (N=300) to check all that apply, reveals a variety of consequences, from talking to the student (82%, N=246); to taking off points (45%, N=135); to giving a zero on the assignment (40%, N=121); to sending students to an honor council or other disciplinary body (9%, N=27).

For the option “None of these scenarios apply” (22.3%, N=67) analysis of open-ended responses shows that WL educators will often give students a chance to redo the assignment (71.64% with 48 references).

RQ3: What Practices are WL Educators Observing in their Students’ Use of MT, and are Educators Adapting their Assignments and Assessments in Light of this Use?

Teaching Online

The 2020-2021 academic year presented extraordinary challenges in online teaching and learning. At the time when the survey was conducted in November and December of 2020, 32.6% (N=105 of 332 respondents) reported that they met online only; 62.1% (N=200) met online and in person; and only 5.3% (N=17) reported meeting exclusively in person. We were interested to inquire if the teachers who had taught all or partially online had noticed the ways in which their students were interacting with MT.

To begin, we asked if WL teachers had noticed a difference in the way students were engaging with MT during online classes.

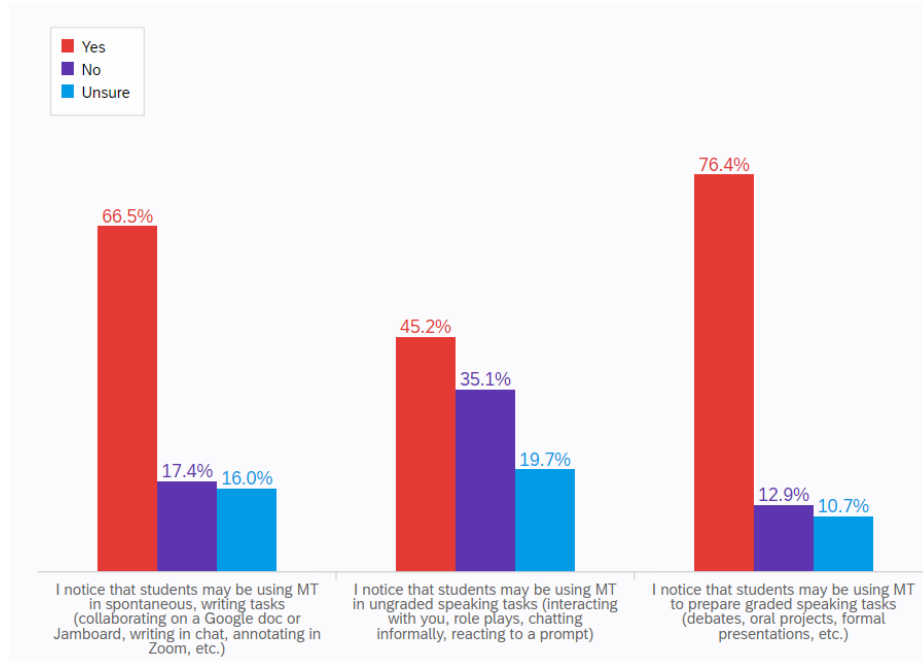


Figure 4. A lot is already understood about how students interact with MT in formal writing. Here, we are very interested in learning more about the use of MT in online classes. Have you noticed a difference in the way students are engaging with MT during your online class?

The numbers that stand out are the 76.4% (N=214 out of 280) who reported that “students may be using MT to prepare graded speaking tasks (debates, oral projects, formal presentations, etc.)” and the 66.5% (N=187 out of 281) who noticed that students “may be using MT in spontaneous, writing tasks (collaborating on a Google doc or Jamboard, writing in chat, annotating in Zoom, etc.)”

It is unsurprising that many teachers were “unsure” as to how students were using MT in an online environment given the novelty of the situation for so many, and that unless there is some kind of remote monitoring, it is impossible to know for sure if and how students are using MT. Teachers were invited to provide any examples of what they noticed regarding MT in their synchronous classes. In analyzing the 94 open-ended responses, the major theme that emerged was “observation of use of advanced grammar and vocabulary” (23% with 22 references), such as “Use of structures they haven’t been exposed to yet,” commented a middle-school French and Spanish teacher.

Modifying Assignments

In light of student use of MT, we asked if teachers had considered “modifying the ways activities are designed or weighted, given the prevalence of Machine Translation.” The 77.2% (N=221 out of 286) who responded “yes” or “yes, I have already done so” provided responses that show a range of efforts to prevent or dissuade the use of MT. Broadly speaking, there were two approaches to students’ use of Machine Translation that emerged from the open-ended questions: punitive and preventive. The punitive approach involves actions such as taking off points, assigning a zero, requiring a redo of an assignment, or other disciplinary action. A preventive approach is one that cannot be “gamed” by MT, such as conducting

assessments in-class only; dedicating more time to interpretive tasks; clearly defining what kind of output is expected; using sentence starters and anchor charts; carefully scaffolding assignments; and minimizing the role of grammatical accuracy. Technology solutions included requiring students to record oral assignments with their cameras on to monitor if students are reading from a script; requiring students to record themselves and their screen as they take a test; using technology that prohibits students from moving away from the assessment window; and using screenshots as prompts (which cannot be as easily translated).

For teachers who responded that they had not considered modifying the way activities were designed or weighted (22.7%, N=65), a lack of control over the kinds of assignments and assessments they can give and a certain resignation in the face of the ubiquity of the technology were a few reasons provided for not having modified assignments. Other teachers commented that they had not considered modifying assessments and assignments because, for example, “I discourage it and do not give credit for work that is done using a translator.” In other words, no adjustments were necessary because the penalties for using MT were clear and sufficient enough to ward against its use in the first place. “I do not allow MT in my classroom at any level” commented one high school teacher, which reflected what some other teachers observed: that the prohibition of MT is the solution to the MT problem.

Of note are the open-ended responses that indicated that no changes were needed to existing assignments because material was taught thoroughly, so there was no need for students to rely on MT; spontaneous speaking activities did not necessitate the need for MT; or all assignments were already done in class in the presence of the teacher. However, as soon as one strategy is carefully conceived of to avoid the use of MT, a program can be used to circumvent it, as this teacher noted:

In my beginner classes, I don't have a lot of assessments of output, but the few I do have nearly been eliminated because of rampant use of online translators [and] now with the new phone app, all they have to do is hold their phone up to the text to get it translated.

DISCUSSION AND IMPLICATIONS

Our study contributes to the body of MT literature by providing quantitative and qualitative data regarding 6th-12th grade WL educators' perceptions and practices regarding MT, making visible the punitive consequences for students and inquiring into the adjustments in assignments and assessments made in light of the use of MT. The major takeaway is that middle school and high school educators are facing the same challenges as those experienced by faculty in higher education as MT becomes more ubiquitous: what is the best way to talk to students about the tool in the WL classroom, how best to adapt the curriculum to discourage or integrate its use, how to handle dishonesty or enforce academic integrity, what are (if any) the disciplinary consequences for using MT in the WL classroom, and what effect will MT have on the future of the WL profession.

That said, the two cohorts see the future of language teaching differently. In Clifford and colleagues' work (2013), 62% of L2 instructors in higher education reported that MT was “not at all” a threat to the World Language teaching profession, while 10% reported “very much.” When asked the same question in the present survey, 24.6% of WL educators reported “not at all,” while 26.3% reported “very much.” An area of further research would be to

investigate why there is a notable difference between these two cohorts when looking at the future of language education in this country. Our research shows that new teachers are less likely to view MT as a threat to the profession and are more likely to condone its use. If the trend continues that new generations of educators, in 6-12th grades and in higher education, are more optimistic and more tolerant of machine translation, then there may increasingly be room for conversations about the inclusion of MT in WL education.

Especially in the context of online learning, as many of us discovered during the global pandemic, the challenge of creating assignments and assessments became fraught as teachers suspected MT-mediated communication across interpretive, presentational, and interpersonal modes. WL educators are, of course, not alone in facing the challenges of disruptive innovation (disruptive, not only in the sense of a technology that challenges practices, but also disruptive in the sense of disruption of the classroom environment). The internet has become the core of almost everything we do. And with rapid technological change comes problems. But as with any challenge, there is also new opportunity here, and our study shows that many are invested in finding creative solutions and implementing a more inclusive approach in light of MT use, not just punitive ones. It is for this reason in particular that a main take-away from the present study is that both teachers and students need more support in this area: teachers as they confront the increasing use of MT, and students who are dealing with the ubiquity of translators.

Indeed, there are increasing calls for language educators to understand and familiarize themselves with the current strengths and limitations of these tools for the language they are teaching and, instead of banning their use, implement ways to incorporate these tools as another pedagogical resource (Correa, 2014; Ducar & Schocket, 2018; Enkin & Mejías-Bikandi, 2016; Henshaw, 2020; Niño, 2020; O'Neil, 2019a). In other words, a shift in the way of approaching the issue is imperative: implementing a learner-centered instruction where proficiency and effective communication are emphasized along with opportunities to introduce students to best practices in tools that have become such an integral part of their everyday environment.

Nevertheless, “cheating” stands out in many of the responses in the current study, which complements what has been found in studies in higher education. Moreover, there is a notable lack of consensus on the resulting consequences, which mirrors what is reported in higher education contexts at large (Correa, 2011; Ducar & Schocket, 2018). Further research in this area could be developed to investigate, from the students’ point of view, how their language learning in higher education is influenced and contextualized by their experiences with MT in K-12.

Pedagogical Implications

One World Language educator made a plea in a survey response, “I really hope we will start getting more ideas on how to teach responsible MT use. I hear so much about it, but I need and want more guidance.” To honor this teacher’s request, let’s recapitulate below some of the pedagogical strategies mentioned by educators themselves in the survey as ways to lessen the impact or dissuade the use of MT:

- rethink the kinds of writing assignments given in class and as homework;
- lower the stakes of assignments so that students are not tempted to rush to MT for answers;

- scaffold assignments so that students feel prepared to complete them without significant outside help;
- minimize the emphasis on grammatical accuracy in assignment rubrics;
- coach students in the power of “yet” and remind them of the value of their own language (and their own mistakes) over the language produced by a translator; conduct assignments in person when possible;
- emphasize communicative ability over accuracy; and incorporate more interpretive skills (reading and listening) over presentational ones (writing and speaking).

We will leave aside the issue of the use of technology to monitor (some would say police) behavior, since this has become a contentious issue, and one that largely involves school administrators and school policies, instead of individual teachers.

In addition to the creative and thoughtful solutions provided by teachers, here are a few more that explore possible uses of MT in the classroom in collaboration with students, as proposed in recent studies:

- comparing the effectiveness of WordReference vs. Google Translate (O’Neill, 2019a);
- conducting activities that raise metalinguistic awareness (Faber & Turrero-García, 2020);
- and asking students to formulate a grammar rule by exploring the translation of a phrase or clause type from English into the target language (Tarsoly & Valijärvi, 2019).

In light of the results of our study, we would like to contribute to the conversation proposing two more strategies - survey and reflections - which are low-stakes ways to invite students to participate in conversations on their learning. Surveys and reflections are especially effective for initiating a conversation about engagement with online tools, giving instructors an opportunity to talk with their classes about the writing process in particular. A student survey can be administered in efforts to gather information about how they are approaching the use of MT. If the survey can’t be conducted anonymously outside of class using a program such as Google Forms, an in-class survey could be conducted as a Think-Pair-Share. If there is no clear policy on the use of MT in the classroom, during the “Share” portion, students can talk about their impressions and uses of MT. If there are, however, punitive consequences for using MT, anonymity would be important during the “share.” In this latter case, each student can write down one example of how they have used MT lately. A student from the class then collects all of the responses and writes them on the board. During the “share,” teachers might feel some responsibility to offer solutions or restate policies, but educators can simply listen as a first step. Indeed, one could couch the conversation as a “listening session” and be transparent that this is an issue that teachers and students around the world are discussing.

Inviting students into the intellectual world of L2 learning and ethics surrounding technology will complement other discussions involving the intersection of ethics and technology that occur in school and empower students to be more active agents in their learning as they are encouraged to think critically about these digital tools. Only 3 respondents (0.9%, N=336) indicated that their textbook addressed the use of MT. Another 159 (47.3%) indicated that they do not use a textbook, which opens up an opportunity to include a unit on

translation. There are several caveats, however: teachers may be unable to engage in these conversations given curriculum restraints, or unable to freely address a topic on a prohibited tool. Certainly, the issue of teacher autonomy comes up here, as one Japanese high school teacher observed: “I think it is far more realistic and useful to teach how to utilize MT effectively than to prohibit it. However, my school does not agree.”

Reflection is another strategy for opening up a conversation on a complex subject. For those L2 classrooms where there is some flexibility in engaging with students in a conversation about MT, the Appendix offers some questions that could be posed after any assignment to inquire if or how MT played a role. The questions have been formulated for students to reflect on writing in particular. See Giannetti (2016, p.92-93) for more questions that could be asked in a reflection involving MT. Students could copy and paste the table in the Appendix to the end of an essay and highlight or type their answers. This kind of reflection can help students take ownership of their work and make visual the way tools have been used in the process of writing. Bringing the behind-the-scenes Google consultations out into the open will benefit everyone’s learning.

CONCLUSION

This study aims to shed light on the ways 6th-12th grade World Language educators are dealing with issues of MT and also helps to reveal what approaches, practices, and consequences students are experiencing in their language education as they go through middle school, high school, and as they turn their sights to language studies in a post-secondary context. “If we can’t beat them, join them” may be a cutting rejoinder to those who would like to banish Google Translate from the WL education, but the reality of the inclusion of MT is complex and controversial, as our data show. Regardless of how fraught the topic is, however, translators are here to stay, and there is a growing movement for their thoughtful incorporation in any L2 classroom as part of the language acquisition process and to empower students in the use of any tool that has become ubiquitous. As Ducar and Schocket (2018) state:

[...] it will be important for educators across the upper elementary, secondary, and postsecondary spectrum to understand how students are using translation tools and to teach them to do so in a responsible way that promotes, rather than circumvents, their progress toward more sophisticated language proficiency” (p. 787).

Furthering the case towards a greater inclusion of these technologies is Correa (2014) who points out that while it was once frowned upon for students to use spell-check and grammar-check word processing programs, we are now frustrated if students do not do so. MT may soon take on a similar role.

However, despite the increasing number of studies that show the use of MT in L2 pedagogy in a positive light, the present study reveals strong disapproval among World Language teachers, similar to what is found in studies among higher education faculty (see, e.g., Clifford et al., 2013; Faber & Turrero-García, 2020), with punitive aspects associated with the use of such technologies.

What if we were to abandon the rhetoric of danger, warning, prohibition, and punishment with regard to these tools, and instead encourage exploration, agency, curiosity,

and critical thinking? Researchers (Ahn & Chung, 2020; Fredholm, 2019; Groves & Mundt, 2015; Lee, 2020; Niño, 2020; O'Neill, 2019b; Stapleton & Leung, 2019; Tarsoly & Valijärvi, 2019) are urging L2 educators to rethink L2 pedagogy and to embrace MT as a potential pedagogical tool that can help learners enhance their language skills. This complements the view of the 34.2% of teachers who indicated in this study that “MT will need to be incorporated in the curriculum in a more deliberate way.” Directing students towards a responsible and successful use of translation technologies has the potential of being highly beneficial for both students and educators alike, especially if both sides understand its benefits and drawbacks in the language learning process. L2 educators are increasingly calling for a joining of the “enemy” (Correa, 2014; Ducar & Schocket, 2018; Fredholm, 2019; Henshaw, 2020; O'Neill, 2019b). But the enemy is not our students. Collaboration, in conjunction with prevention, can go a long way to educate and empower students. Such a collaboration will be appreciated by students, and will hopefully lessen the difficult, time-consuming, and burdensome tasks of dealing with MT infractions.

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APPENDIX

Reflection on [name of assignment]
1. Describe how you approached this writing assignment. How did you choose the topic?
2. What aspects of your work are you most proud of?
3. What was the most challenging part of this assignment?
4. Circle below which resources you consulted as you worked on this assignment: Class notes Class textbook Dictionary (name which one) Google Translate SpanishDict! Linguee Other
5. If you used an online dictionary or translator, go back through the essay and highlight the words or phrases that you translated from English to Spanish.
6. If you used a translator such as Google Translate or SpanishDict!, did you find it helpful? In what way?
7. If you used a translator, what percentage of this assignment would you say was aided by it?
8. What did you learn most by completing this assignment? What else do you want to learn on this topic?