Original Papers

Testing the cutting edge in translation: Collaboratively building critical thinking

Anna Husson Isozaki

Gunma Women's University and Kanda Graduate School: MA TESOL program

Abstract

It is an ongoing challenge for L2 learners to evaluate rapidly evolving online language technologies, particularly translation software on the Internet. Considering students' need to build skills for future, autonomous critical thinking about these technologies and the media surrounding them, the instructor set up small collaborative class activities in two university classes. The goal was to see if hands-on, cooperative activities would stimulate critical thinking (CT) and help students communicate about issues surrounding language-related information technologies. A follow-up collaborative activity in critical media literacy regarding reporting about automatic translation was also carried out. Students' performance and feedback showed gains in confidence and consequent willingness to critically examine claims put before them, encouraging the instructor to concur with researchers such as Gokhale (1995), and Murphey and Jacobs (2000), who have written that collaborative activities can be effective in supporting development of strengthened critical thinking, and Yang and Gamble (2013) who have demonstrated that strengthened CT abilities can lead to improved academic performance as well in university-age EFL learners.

Introduction: language learners, online translation, and "time-saving"

University students are generally pressed for time and language students are no exception. Instructors can help students by staying current with information technology online and evaluating what is potentially useful for learners' language work and what only promises time-saving.* Online translation sites are an example, recently generating a great deal of marketing and even media fanfare (Garrity, 2013; Nixon, 2013), some of it featuring one-sided claims and apparently not troubled by financial interest (Flinders, 2013; Laska, 2013a, 2013b). Most university students will know of free sites and will probably have favorites. Generally, computer translation sites promise greater speed than human translators, easy "polishing up," and often, translation "memories" so that the same words or phrases can be automatically input to documents after being translated once.

Critical thinking regarding translation software

Powerful appeals such as the above are unlikely to be counteracted effectively by instructors simply telling students not to use the sites, which offer themselves whenever the learners go online. The root issues are deep: learners' skills and ability to engage in critical thinking about the claims and the software. Critical thinking, as needed in this situation, cannot thrive without learners having some self-confidence in their ability to evaluate the sites' promises against what actually appears in a "results" box. While the transformations visible on these sites compared to a few years ago are undeniably impressive, much does require closer examination. In English prose, is repetition of the same phrase numerous times within a document desirable? If grammar, fundamentally the glue holding words together, is mangled or lost, is it time-saving to attempt sorting out the resulting mash or is a fresh beginning more time-efficient in the end? Human translators have been offering some of their answers to these questions. For second language learners, however, these commentaries may not be easy to find even if strong motivation is present (see Hendzel in Bradshaw, 2013; Payne, 2013).

Princeton professor and prizewinning translator David Bellos exemplifies confidence in critical evaluation, advising:

> ...[I]t's very silly to use Google Translate or any automatic translation service to produce text in a language you don't master completely. (...) The output of any automatic translation device needs to be read and corrected by somebody who commands the language completely, because you can often see easily where the mistake is, or you can tell whether it's

garbage or not. And if it's garbage, you disregard it. (NPR, 2011)

How can language learners, who by definition have not yet reached the confident stage of "mastery," develop their own critical balance? It would be an oversimplification and counterproductive if instructors were to suggest any permanent answer; the situation is too fluid and the technology is improving too rapidly. Learners need to be equipped to make their own judgments in real time, for which empowerment and critical thinking skills are crucial.

Collaborative learning and critical thinking

Research and writing on collaborative learning offers potential guidance. Adams, Carlson and Hamm (1990, p. 10) write: "When working in collaborative groups students have a better chance to explore ideas, justify their views and synthesize knowledge within a supportive environment." Murphey and Jacobs (2000) state that "it is our contention that students learn autonomy...more quickly through guided cooperative learning in which they collaborate with peers to find and create their autonomous and critical voices."

Gokhale's (1995) experiment comparing two groups of students studying technology provides valuable hard evidence for these observations on the undergraduate level, leading to his conclusion that "...if the purpose of instruction is to enhance critical-thinking and problem-solving skills, then collaborative learning is more beneficial." More recently and specific to the EFL environment, Yang and Gamble (2013) conducted a semester-long experiment to compare a course involving collaborative activities for critical thinking to a traditionally-taught EFL course. The end-semester results were very strong for the students who had participated in the collaborative, critical thinking-taught course in student satisfaction, critical thinking skills and also better than the control group in academic achievement. The researchers attributed the general L2 English improvements seen in the experimental group to benefits from their learners practicing evaluating their reading materials for deeper understanding, and from collaborative work stimulating speaking and listening motivation (p. 407). As for helping build improvements in critical thinking (CT) abilities, Yang and Gamble write: "providing a variety of differing or conflicting information sources encourages learners to realize that CT skills are necessary for determining what to believe. Diversity of opinion also fosters confidence in one's own voice, empowering learners to challenge conventional

wisdom and question information sources" (p. 409).

Considering the research, and the challenge for learners: to evaluate rapidly evolving online language technologies and to build skills for future, autonomous critical evaluations, this instructor set up three collaborative class activities. The aim in the first two was to scaffold university students' testing of popular translation software on the Internet and their practice considering critically with peers the results the software produced. The third followed up on the translation software testing with a critical media literacy activity regarding reporting on automatic translation.

Cooperative software testing

The activities took place in two universities northwest of Tokyo. Class sizes were small: seven members in an international communications department's Business English course, and twenty-one members in a first-year Medical English class. The Business English class worked with an example email and the Medical English class for future physical therapists worked with a scripted introduction for beginning treatment sessions with a new patient (Appendix A). The time devoted to the activities was approximately one hour. Business English members shared student-owned devices to connect to the Internet, and the Medical English class session took place in a computer lab.

Business English

The fall semester Business English class for third and fourth year international communications students was provided with a short email in natural, idiomatic English, supposedly from a business partner in the U.S.

Hi John,

I thought I'd just quickly drop you a line re. upcoming contract points that may run into some snags. The goods from the U.S. may be delayed due to the lingering effects of the government shutdown. They should have been arriving by 10/26 but at this point we should aim to expect them around Halloween. Can you hold out until then?

More later in my next mail,

Angel

The contents were readily understandable to class members when gone over together; business news at the time had dealt extensively with the effects of

U.S. politics on business. When the whole class was firmly satisfied that they understood and could, themselves, translate the original text, small "teams" of two or three members were formed around the available devices and invited to input the original text to translation sites of their choosing. Teams worked together, sharing results aloud to the full class, with laughter provoked by the unusual translations offered by various sites. One site, for example, translated the name of the sender "Angel" to the Japanese *tenshi* (angel), which ordinary humans familiar with the fairly common name would know not to do.

Next, members copied and pasted the Japanese which sites had offered back into the entry boxes, and requested translations from Japanese to English. Students shared results again, while the instructor noted points of interest that arose in these "translations" on the board. In addition to comical mistakes, results included potentially more serious errors. Some software sites offered frankly unintelligible lines such as: "Pointing to more in the future are likely to encounter snag some," and "Had 10/26 arrivals of them, and we should aim to expect them in surroundings at Halloween here. Can you demand till then? The following mail of me, and in addition, do slowness and it is angel."

Students showed engagement and occasionally amusement during the activity. Their verbal feedback to the instructor was positive, indicating that they had found the activity to be a worthwhile learning experience and intended to rely on their own communicative skills in writing rather than software output at the current stage of the technology.

Medical English

The second activity took place at a health and welfare university with first-year students. Translating and testing computer translation software was likely to be challenging for them, but potentially important as well. Students in this required English course had chosen health care and rehabilitation for their studies rather than liberal arts, and their confidence in their second language English skills was generally low. The likelihood that they would have difficulty summoning the self-confidence to critically examine translations produced by software could be high; and the stakes could be high as well. Communication between a health care professional and a patient should be clear and accurate as a matter of safety.

The class session began with reading a sample English introduction from a physical therapist to a new client.

Hi, I'm your physical therapist. I'm going to be helping you recover from your knee injury. We will meet every week, here, and I will run you through a series of exercises. We will get you some exercise equipment so you can practice every day at home, too. At home also you'll use heating packs and cooling packs every day to help the healing along. From your MRI results and examining you now, I expect it will take about six months of work, if it goes well, for your full recovery.

The full class collaborated on translating this into natural, conversational-but-polite Japanese, demonstrating understanding and confidence with the equivalent expressions they chose as a group. Then, arranged into five smaller groups, the students tested translation sites, First they input the original English to compare the software's Japanese results with their own translation, then re-input the software results to go from Japanese to English again. Team members shared initial results, then shared especially interesting selections with the full class. In the English to Japanese stage, "physical" in "physical therapist" became the Japanese word for "Physics" on two sites, and exercise equipment was to be brought by the client *from* their home rather than *to* their home in another. More than one site also put "Hi" into a slang-like Japanese expression equivalent to an American "Yo!" which could create awkwardness if used in first-time meetings with a client. Re-translations back into English yielded the unrecognizable "I will send you to us by car in a series of movement. ... The question of the result and you to whom I to whom it takes about six months expect it now from your MRI works..." and some interesting surprises: the rehabilitation exercise program to be "run through" had morphed into a rather violent Japanese phrase: *anata wo tsukitooshi*, defined as "thrust, pierce or stab you through"(*Kenkyusha*), which was then rendered back as "thrust you into" in English. Also, instead of the physical therapy client practicing independently at home, more than one program yielded a confusing: "I'm at home for daily use" as the supposed words of the physical therapist.

Students were asked by the instructor for brief written feedback, and their comments on the exercise were entirely positive, with many saying it was "interesting" "exciting" and "funny": further comments directed specifically to the computer translation results were: "The result of Japanese was regrettable."   "...Very interesting! computer software translation not good...but unique!" and "It

is funny. I can't rely on it" as well as: "...Human's brain is the best right."

Follow up: critical media literacy

Members of the Business English course in the first activity shared business news weekly, so as a related follow-up, the instructor prepared a session of reading and discussing articles regarding translation software. News and opinion articles were readily available online; automated computer translation has been a hot topic and of perennial interest since the middle of the twentieth century (Rubens, 2012). The articles on computer translation software could be roughly divided into three categories: strongly advocating automated translation, neutral (with multiple viewpoints included), and strongly skeptical of non-human translations of human languages.

As the members of this class had conducted the business e-mail activity earlier in the semester, they were all familiar with the topic. The instructor explained that a search for news articles about computer translation had yielded such quantity and divergence of opinions in results that it might be interesting to go through a sampling and evaluate them together. They would be asked to consider the positions presented in the articles and develop and share their own opinions, since they had already shared the experience of testing software. The class again was small; with students assisting each other, reading and then comparing articles in discussion would be challenging but manageable within one ninety-minute class session.

The instructor's goal was again to scaffold critical thinking and evaluation, but this time focusing on business news presented in the media. Much of the business news the students found, they questioned primarily regarding concerns about new vocabulary or overall comprehension. This was understand-able given the wide scope of business news published during a semester, and with distant, unfamiliar topics especially difficult to examine with critical confidence. The near-future professional lives of these students, however, could well involve substantive business decisions and English information would likely factor in those decisions. The personal experience these students had developed with computer translation online presented an opportunity to practice taking a comparative and critical look at business news on the topic together with their peers, hopefully also offering an empowering approach they might call on to use in future deliberations.

All members first read through an exemplary article in which the reporter had clearly made efforts toward balance and which included expert, reputable sources and opinions on computer translation from across a spectrum, despite the limited resources of an American university's student-run newspaper (Bradshaw, 2013). Class members counted the sources and noted viewpoints and backgrounds, noticing also how the breadth of inclusions made for an article that was journalistically strong and would be considered reliable by readers.

The class members then re-arranged themselves into close pairs for collaborative work. Each pair collected a "comparing sources" discussion worksheet prepared for the session (Appendix B). Key terms and questions to keep in mind for analysis were introduced, particularly those important to both journalism and business. The task was then set: every member would read a different article and explain it to their partners. Together, partner teams would fill out their worksheets, comparing their two articles by briefly noting each article's main points, intended messages, and some possible reasons.

The instructor arranged that each pair of students read contrasting articles: one "pro-machine translation" and one "skeptic, pro-human," and provided a resource sheet to each team with links to profiles of some of the writers and quoted figures in the articles. Student-pairs first worked individually and soon assisted one another, sorting out difficult sections. There were audible gasps and then laughter as points were clarified and connections clicked; particularly one-sided articles tended to match with a business close to the writer. The information-organizing and paraphrasing called for in the "comparing sources" worksheets also served to create a set of speaking notes, and upon completion, each member and pair briefly presented the articles they had read and their analysis of their contrasts to the full class.

After the initial article-reading warm up and discussion, followed by their reading and pairwork, these reports were done comfortably in English. Possibly because each article was different, attention between peers at this stage seemed noticeably sharper than in other classroom speaking tasks as members took in the disparate messages. Vocal reactions were common as they listened to the incidents reported, promotions or words of caution, and the affiliation statuses of various sources and writers.

Students' comments (anonymously written and collected at the end of the class) to the questions "What do you think about this exercise and group

work/discussion? Were there any surprises? Was it useful – will you use these skills again? Or not?" are recorded below:

> "Good exercise! Even though it was only one topic, there were a bunch of sources and opinions, it was worth discussion. I really like this exercise. It involved reading, scanning, paraphrasing skills which are what I want to get."

> "To read a lot of article is difficult, but useful to improve my skill."

> "I like this exercise. I thought this various source checking is useful skill not only for business but also in academic situations."

> "I was surprised to know (some) write ... unrelyable article with no source!"

> "I learned how to read articles critically through this exercise. I want to use and practise these skills again."

The session concluded with members discussing the value of getting multiple sources, and remembering that important further information on an issue is likely to be available with a quick Internet search. Some commented verbally that they now care about learning who writers or sources are and why they might choose to express the opinions that they do. The instructor shared the opinion that for both media literacy and for making good decisions in business, such searching is likely to be time well-spent.

Conclusion

While class-sizes were small for the reported activities and therefore not amenable to generalizations or firm conclusions, this instructor feels strongly encouraged that as Adams, Carlson and Hamm (1990), Gokhale (1995), and Murphey and Jacobs (2000) have written, collaborative activities are effective for stimulating critical thinking and evaluation. Through hands-on, cooperative activities, issues with and about language-related information technologies were grasped and communicated between students and in their feedback to the instructor. Students' class performance and feedback also indicated gains in both their language confidence and their consequent willingness to critically examine claims put before them, as was observed and reported in Yang and Gamble's research (2013).

Murphey and Jacobs (2000) stated: "As teachers of autonomy we have to be open to the fact that, in developing autonomy, learners will in turn develop their courses and their lives in ways that we cannot

completely foresee." The rapidly transforming technologies and media that students worked with in the activities discussed above would lead this instructor to concur with that open approach. Considering the speed of the changes around them, developing critical thinking skills and confidence to use those skills autonomously in the future, in ways we as L2 instructors "cannot foresee," would be precisely the most hoped-for and appropriate outcome for our learners.

* "Free" online dictionaries, for instance, are recently drawing the investigation of journalists concerned about web-privacy (see Angwin, 2010).

** In Gokhale's experiment, after the same initial instruction, forty-eight students were divided into two groups of twenty-four, with one group set to complete subsequent tasks individually and the second group to be divided into smaller, collaborative-task teams to complete work together. The two groups had the same amount of time to complete their set tasks, then both groups were given a post-activity test which had factual questions and questions requiring critical thinking. Both groups produced similar results on the factual questions, but the group that had done their work in the collaborative activities produced measurably superior results in the questions that required critical thinking skills. (Please see Gokhale, A.A. 1995, at: http://scholar.lib.vt.edu/ejournals/JTE/v7n1/gokhale.jte-v7n1.html?ref=Sawos.Org)

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Appendix A

Worksheet for students in a physical therapy program:

Hi, I'm your physical therapist. I'm going to be helping you recover from your knee injury. We will meet every week, here, and I will run you through a series of exercises. We will get you some exercise equipment so you can practice every day at home, too. At home also you'll use heating packs and cooling packs every day to help the healing along. From your MRI results and examining you now, I expect it will take about six months of work, if it goes well, for your full recovery.

1. Memo the above in your natural conversational Japanese.

2. With your partners, test some computer translation programs.

   A. Take the English you understand, above, and set it to Japanese translation.
   Does it say the same thing? Memo what you notice – good or bad points.

   B. Then COPY the JAPANESE and translate it back into English.
   Is it the same as the original? Does it make sense? Memo what you notice now.

I will ask groups to read aloud their results. Have fun!

Appendix B

Before we start reading our articles, let's discuss together some of the questions and key terms we will be thinking about in our pair and group work today:

What does "disclosure" mean?
What is the publication?
How does the magazine/news site's name sound?
Who wrote the article?
What was the person's goal or purpose?
Who is quoted in the article?
Can we see what their jobs are?
How many sides are asked for opinions or information in the article?

If the writer or quoted people made a statement that sounds like fact or a big claim, what reliable sources do they use to support (back up) their claim?

Comparing sources discussion questions:

source 1: _____ by _____

source 2: _____ by _____

1. What is the topic?

2. What is the main idea or argument of source 1?

3. What is the main idea or argument of source 2?

4. What are some possible reasons for each article's view?
source 1:

source 2:

Appendix C

Feedback questions:

What do you think about this exercise and group work/discussion?

Were there any surprises? Was it useful – will you use these skills again? Or not?

Bio:

Anna Husson Isozaki has been teaching and translating in Japan for twenty years. Her co-translations of bestsellers クロスファイア:

Crossfire by Miyuki Miyabe and 花埋み:

Beyond the Blossoming Fields by Junichi Watanabe were well received by critics; more recently she has been editing translations (*Building Waves* by Taeko Tomioka) and teaching reading and listening, journalism, media studies and critical media literacy, translation, business and other courses at universities in northwestern Kanto.