# Examining the File Renaming Errors Made by Japanese University EFL Students During the First Year of Emergency Remote Teaching

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**Abstract**

The move to emergency remote teaching (ERT) in 2020 due to the COVID-19 pandemic forced instructors worldwide to necessarily include components of information and communication technology (ICT) in their lessons. However, this move proved particularly challenging in Japan, for the country has long lagged behind others in its implementation of ICT for educational purposes. While many university instructors in Japan were able to successfully provide ERT courses that utilized new or heretofore rarely used ICT (e.g., Zoom, learning management systems), students' general lack of basic personal computer skills remained a persistent concern. Aware of both Japan's ICT shortcomings and students' anxiety and confusion regarding the transition to online learning, an instructor/researcher (I/R) teaching English as a foreign language at three Japanese universities opted to make heavy use of email – a standard digital tool widely used for decades – for assignment submission and student-teacher communication purposes. In spite of email's many inherent advantages, the I/R unexpectedly received a large number of email attachments that were not renamed according to the repeatedly-explained file renaming convention established for all emailed documents. The current paper presents analyses of the file names of a subset of emailed documents the I/R received during academic year 2020, with the research goal being to categorize the file renaming errors so that their likely sources could be determined. Because the errors arose from multiple and varied sources, explanations about and recommendations for pedagogical practices (e.g., the giving of instructions, typing in a foreign language) are proffered.

Keywords: COVID-19, Emergency Remote Teaching, Japanese University, ICT, Computer File Names, Errors, Mistakes

**Introduction**

With the move to remote teaching and learning (RTL) due to the novel coronavirus (COVID-19) pandemic, instructors were forced to alter their typical teaching methodologies and find ways to present their course material and conduct their classes remotely in an online format. Although many information and communication technology (ICT) tools like university learning management systems (LMSs) and video conferencing applications (e.g., Zoom) were widely available to aid in this transition, which teachers were generally willing and able to adopt (Wen & Tan, 2020; Winter et al., 2021), there were nevertheless concerns that students would be unprepared and ill-equipped to make this unexpected yet necessary transition to mandatory online learning (Bettinger & Loeb, 2017).

These concerns were particularly strong in Japan, due in no small part to the country's rankings in ICT implementation in educational settings being considerably lower than those of other nations (Maita, 2020; Nae, 2020; O'Donoghue, 2020; OECD, 2020). To address this concern in the face of time constraints brought on by the move to what Hodges et al. (2020) termed *emergency remote teaching* (ERT), some instructors essentially followed others' advice (e.g., Czerniewicz, 2020; Heuvel, 2020) of relying upon well-established existing systems to keep things as simple and understandable for the students as possible.

In line with such thinking, the author of the current article (who is also the instructor/researcher, or I/R) designed his Japanese university-level ERT English courses for academic year 2020 (hereafter, AY2020) such that students were to use, as much as possible, well-known standard digital methods to engage in their coursework. To this end, the I/R requested students to submit all course-related documents[1] for grading and feedback purposes in Microsoft Word or PDF format as email attachments instead of sending them by other means (e.g., by use of the university's LMS).

Although course participants generally regarded the use of email and email attachments to be simple, easy to understand, and effective during ERT (Rubrecht, forthcoming), there was one component of this method that was unexpectedly problematic: many students failed to rename their submitted files in the manner requested by the I/R. Unfortunately, due to the sudden and unforeseen nature of the commencement of ERT in response to the pandemic, it was impossible to predict that file renaming would become the issue that it became during ERT. As such, a pre- and post-ERT-commencement research study on file renaming could not be planned. However, this did not preclude the possibility of ad hoc analyses being conducted to determine the types of file renaming mistakes[2] students made in order to pinpoint their likely sources. The results of such analyses could lead to suggestions for improved pedagogical practices (possibly including those regarding the use of ICT and other digital tools during ERT and beyond) as well as indicate future research directions.

**Background**

Much like ERT itself, the present research study was not planned prior to 2020. Its purpose was to categorize, tally, and analyze the *types* of renaming mistakes students made with their

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[1] Most such documents were available as answer sheets downloadable from the I/R's website.
[2] In the field of second and foreign language teaching and learning, distinctions are made between the terms "error" and "mistake." However, because it was impossible to definitively classify all incorrectly renamed file names as being made from students making either one or the other (as "errors" and "mistakes" are defined within the field), no distinction between these terms is made here.

digital document files during ERT so that the sources of those mistakes may come to be identified, that is, to possibly determine *why* the mistakes had been made. In order to ground the results of analyses, four interrelated areas deemed relevant to the study's context will first be relayed. These areas are (a) the following of instructions, (b) students engaging in mandatory remote learning for the first time, (c) students' use of personal computers, and (d) typing (or "keyboarding"). Each of these areas ultimately had bearing on the results of the study. Each will now be briefly discussed in turn.

**Area 1: The Following of Instructions**

The ability to follow instructions is a skill required for the successful navigation of and participation in everyday life. Yet as simple as the act of following instructions may appear to be, it is actually rather complicated, as numerous conditions (e.g., one must comprehend the syntax of the instructions, the instructions must be held in memory until task completion) must be fulfilled and other issues (e.g., those of attention to and motivation for task completion) must be dealt with (Gill et al., 2012). As such, there is much interest in finding ways to keep students from ignoring instructions (Linsin, 2012) and have them follow them accurately (Waterman et al., 2017).

The consequences of not following instructions run the gamut from mild (e.g., annoyance) to severe (e.g., serious bodily harm or death). Generally speaking, academic settings are low-risk/ low-consequence environments, which is why some students ignore instructions by not completing those tasks that they deem trivial (see Iivari et al., 2020). Nevertheless, a student's ability to follow instructions can ultimately impact their grades, their learning or mastery of subject matter, and their ability to correctly execute actions (Dunham et al., 2020), not to mention the overall pace of instruction and classroom participant frustration levels should instructions constantly need repeating.

The student participants in the present study made numerous mistakes with their file renaming, even after explicit instructions were given and repeated through various modes (see below). It is therefore suspected that in at least a few cases (particularly at the start of ERT) mistakes arose because the students had trouble processing the information presented them or understanding the language used for the instructions (Morin, 2021). In other cases, students may have forgotten parts of the instructions, failed to realize that the instructions existed, or failed to internalize or actually follow the instructions. These are the most common type of instruction-following mistakes and indicate limited working memory problems, missteps related to social and historical effects (e.g., peer pressure), and metacognitive limitations, respectively (Dunham et al., 2020).

**Area 2: Engaging in Mandatory Remote Learning for the First Time**

Alvarez (2020) conducted a study with university students at the beginning of the pandemic to determine the lived experiences of learners forced to engage in ERT. All four themes that emerged from this research (i.e., poor or no internet access, financial constraints, lack of technological devices, and the need for emotional support) could be said to have an *affective* component to them, that is, facets of all four themes could induce stress or anxiety in students as they endeavored to make sense of their new situation, engage in their courses remotely, and, ultimately, not be left behind, either in their present courses or as they prepared themselves for job hunting and entry into the workforce after graduation. Given that other researchers have found similar themes (e.g., Iivari et al., 2020) and have identified ERT as a

time of extreme anxiety, uncertainty, depression, and isolation (Aguilera-Hermida, 2020; Huckins et al., 2020; Jean-Baptiste et al., 2020; Koetsier, 2020), it is speculated that the student participants of the current study often had many pressing matters and areas of concern that occupied their thoughts over and above that of file renaming.

**Area 3: Using Personal Computers**

An examination of nearly any metric in the Organisation for Economic Co-operation and Development's (OECD's) PISA (Programme for International Student Assessment) results (PISA, 2018) finds Japan's ICT-use rankings far from enviable. Because technology has continually failed to become normalized in Japanese educational settings (see Bax, 2011, as cited in Mehran et al., 2017; Nae, 2020), students in Japan have generally had less access to – and thus are generally less familiar with – ICT than their counterparts in other countries (Maita, 2020; O'Donoghue, 2020). In fact, according to data collected two years before the onset of the pandemic and the commencement of RTL, only 61% of students in Japan were found to have a personal computer that could be used for schoolwork (which is a figure considerably lower than the OECD average of 89%), and of the 30 countries surveyed, Japan ranked last in terms of how frequently students used computers outside of school to engage in and complete school-related tasks (PISA, 2018).

From a technological standpoint, many so-called "digital native" (Prensky, 2001) Japanese university students appear to not have been sufficiently prepared to begin remote learning. A general lack of access to personal computers coupled with extraordinarily high smartphone use rates among Japanese youth (nippon.com, 2019) suggests that students are far more cognizant of and versed in smartphone *tapping and swiping* gestures when interacting with digital web devices and not *mouse clicks and typing on a physical keyboard* (see below). Also, smartphones function well as devices for accessing or uploading web content (e.g., videos, photos) but are suboptimal for word-processed document creation or manipulation (Dhoray, 2020), which may explain why Japanese students tend to see smartphones more as personal rather than as educational devices (White & Mills, 2014). Because downloading files onto smartphones is typically less common than it is on personal computers, the need to recognize and manipulate file names on such devices is generally less important and inconsequential. Additionally, heavy smartphone users typically rely on dedicated apps (e.g., Line, Messenger) for communication purposes rather than email. Although there were cogent reasons for the I/R selecting email as the mode of communication during ERT (see Rubrecht, in print), smartphone users typically only view rather than download and organize email attachments.

**Area 4: Typing**

Related in part to personal computer use as explained above, it was expected that students would rename their files by typing (or "keyboarding") on physical personal computer keyboards[3]. However, there were several areas of concern here. First, if students indeed lacked general proficiency with personal computers, as suggested above, then typing on a physical personal computer keyboard would have likely been a *pecking* rather than a *touch-type* affair with no smartphone predictive text algorithm assistance to aid in file renaming. The result: typing would become a more cognitively-intensive task for them.

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[3] Students were generally expected to gain access to and use personal computers for the completion of most if not all of their remote assignments for all of their university courses.

Second, the act of keyboarding may have been particularly difficult for some students. Text generation, be it by typing or handwriting, essentially requires three things: working memory, an activation of executive functions, and a physical component (Berninger & Winn, 2006), but all three require distinctly different skillsets (Rogers & Case-Smith, 2002). Students with low keyboarding skills would have been far more likely to focus their attention and resources on the *physical act of typing* rather than on *higher-order processes* like planning or revising, with the result being poor-quality text (Barkaoui, 2014). Third, because RTL stifled students' growth as self-regulated learners (Biwer et al., 2021), especially when there was no intervention (Cai et al., 2020), the students in the present study may have been further disadvantaged, as the skills required for self-regulated learning (i.e., the ability to work independently, self-evaluate, and become motivated for task engagement) are precisely those "typical and necessary for the successful mastering of keyboarding skills" (Lubbe et al., 2006, p. 285).

Finally, in cases of second or foreign language (L2/FL) learning, there has long been concern that typed output (e.g., words, sentences, paragraphs) mixes displays of both L2/FL proficiency as well as keyboarding skills (Taylor et al., 1998). There are indications that such proficiency and skills are not necessarily related (Barkaoui, 2014), but this may not be the case for all learners in all contexts.

**Participants, Courses, and Methodology**

The participants in the current study were 144 students of varying years and majors from eight different courses at three separate Japanese universities in the Tokyo metropolitan area. They were enrolled in a mix of English grammar/communication, lecture, and seminar courses with the I/R throughout AY2020, and all had agreed to participate in this study.

Due to the different courses having a different number of homework assignments to be emailed, the submitted documents analyzed in this study consisted solely of students' weekly Attendance Record Sheets (ARSs). The ARS is discussed in greater detail elsewhere (Rubrecht, 2020, 2021, in press), but in brief, it is a document that was created by the I/R that was meant to be used during RTL to simultaneously take student attendance as well as act as a student-teacher communication tool, as students were instructed to submit an ARS as an email attachment each week of lessons.

On the ARS they were to (a) indicate that they were on target with engaging in and completing their remote lessons and (b) provide comments or ask questions about lessons or their remote learning if they had any. Due to being physically distanced, students being metacognitively aware of their own learning and progress was thought key to their following instructions remotely (see Dunham et al., 2020), so the role and importance of the ARS was repeatedly stressed, particularly how ARS completion allowed students the opportunity to assess, monitor, and evaluate their own performance and learning behaviors (Agran et al., 2005; Sitzmann & Ely, 2011).

The I/R established the *proper file renaming convention*, or PFRC, for all submitted documents (i.e., for both the ARS and all emailed assignments) in order to streamline the grading, organizing, and possible future retrieval of students' many emailed documents. In the case of the ARS, students were to download the ARS template in either Microsoft Word or PDF format from the I/R's website, complete it, and then change its generic file name on the personal computer from "Attendance Record Sheet (ARS)" to that which had identifying

information in the following order (with single spaces separating all words and numbers):
- first and last name
- lesson day and period
- month and day of that week's lesson
- document identification information

Thus, an ARS renamed in accordance with the PFRC would look like the following example (excluding file extensions):

Taro Tanaka Wednesday 1 May 13 ARS

Both prior to and throughout AY2020, students were told repeatedly by download handouts, on-demand videos, synchronous Zoom session explanations, and LMS announcements[4] about the PFRC, the importance of the order and type of information in the PFRC, and the reasons why renaming was required. Similar to others' suggestions regarding the creation and dissemination to students of digital plans that detail procedures and establish expectations for remote course engagement (e.g., Koehler & Farmer, 2020), nearly all of the I/R's students were provided Weekly Schedules prior to the commencement of each semester[5]. These Weekly Schedules explained the semester's activities week-by-week. They also provided links to all on-demand videos and download handouts, including the ARS template. Students were also provided examples of the renamed PFRC document file names to be submitted each week.

Because so many students submitted improperly renamed files in the first (i.e., spring) semester, the I/R added a small grading component to file renaming from the fall semester. It was hoped that this would (a) focus students' awareness on renaming, (b) increase their sense of purpose for the task (see Watson, 2021), (c) show that renaming was something within their control[6], (d) increase student accountability (see Dunham et al., 2020), and (e) ease the I/R's workload.

The file names of each ARS submitted during AY2020 were examined to see if they conformed to the PFRC. Deviations were noted, categorized, and tallied by use of a spreadsheet application. In some instances, ARS file names contained multiple mistakes, with each individual mistake being counted.

**Results**

Prior to presenting the details and results of analyses, some background information must first be relayed. The total number of expected ARS submissions in the 12-week-long spring semester (hereafter, AY2020-S) was 1,728. For the 14- to 15-week-long fall semester (AY2020-F), the total was 2,056, making AY2020's total 3,784. Ultimately, 3,586 ARS files were submitted: 1,674 and 1,912 each semester, respectively. In AY2020-S, 616 (37%) of ARS documents had file names with at least one mistake. In AY2020-F, the number of file names with mistakes made that semester dropped significantly but were still conspicuous: 206 (11%). This improvement can likely be attributed to the grading component placed on

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[4] Explanations were occasionally given in Japanese.
[5] Weekly Schedules were not used in the I/R's seminars, which had 24 students enrolled in total.
[6] It was not uncommon for students to experience technical problems (e.g., poor internet connections, Zoom or computer crashes) that were outside of their control.

PFRC adherence and students having become used to RTL and the I/R's requirements. There was an AY2020 total of 822 (23%) incorrectly renamed ARS attachments, which amounted to nearly one-fourth of all ARS submissions[7].

For analysis purposes, the file renaming mistakes were first categorized by placing them into one of three categories: *instruction-based mistakes* (e.g., when students failed to rename an ARS at all or did so without apparent reference to the PFRC), *detail-based mistakes* (e.g., mistakes with the order of PFRC information in file names), and *typographical mistakes* (e.g., incorrect capitalization, word misspelling, missing or extra spaces between file name words). The specific types of mistakes were given unique identifier numbers and number/letter combinations in brackets (see below). The mistakes were then tallied[8].

**Instruction-Based Mistakes**

There were relatively few mistakes of the first category type. Tally and calculation results are presented in the following example manner:

A (B%, C%), D (E%, F%), G (H%)

A = AY2020-S tally total
B = percentage of this type of mistake made in AY2020-S
C = percentage of this type of mistake in AY2020
D = AY2020-F tally total
E = percentage of this type of mistake made in AY2020-F
F = percentage of this type of mistake in AY2020
G = AY2020 tally total
H = percentage of this type of mistake made in AY2020

[1]  ARS not renamed at all
    18 (2.9%, 2.2%), 0 (0%, 0%), 18 (2.2%)
[2]  ARS renamed but without any reference to the PFRC (e.g., "My sheet for today's class")
    26 (4.2%, 3.2%), 4 (1.9%, 0.5%), 30 (3.6%)

Mistake totals for this category type are:
44 (7.2%, 5.4%), 4 (1.9%, 0.5%), 48 (5.8%)

**Detail-Based and Typographical Mistakes**

The mistakes in these categories are fundamentally different from instruction-based mistakes because the students had apparently attempted to follow the PFRC but either failed to do so completely (e.g., by not including information) or included typing errors (e.g., misspellings or improper capitalization). Thus, the mistakes in the remaining 774 AY2020 ARS file names were considered to be *PFRC-aberrant mistakes*. Because each file name could evince multiple such mistakes, the number of total mistakes within the file names required tallying rather than simply tallying the number of erroneously renamed ARS documents. There were

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[7] Many of the file names of students' thousands of submitted homework assignments and reports in AY2020 were also renamed incorrectly.
[8] Some calculations evince rounding error.

867 and 255 PFRC-aberrant mistakes in the spring and fall semester ARS file names, respectively, making a total of 1,122 for AY2020. Calculation presentations consequently required inclusion of I through M:

A (I%, J%), D (K%, L%), G (M%)

I = percentage of this type of mistake made in AY2020-S
J = percentage of this type of mistake made in AY2020
K = percentage of this type of mistake made in AY2020-F
L = percentage of this type of mistake made in AY2020
M = percentage of this type of mistake made in AY2020

**Detail-Based Mistakes**

There were considerably more mistakes of this type compared to instruction-based mistakes. Calculations of several subcategories are also given.

[3]  Order of information
     23 (2.7%, 2.0%), 0 (0%, 0%), 23 (2.0%)
     [3A] Japanese name order (e.g., "Tanaka Taro" instead of the English order of "Taro Tanaka")
          4 (0.5%, 0.4%), 0 (0%, 0%), 4 (0.4%)
     [3B] Order of information to be included (e.g., "1 Wednesday" instead of "Wednesday 1")
          19 (2.2%, 1.7%), 0 (0%, 0%), 19 (1.7%)
[4]  Incorrect information
     10 (1.2%, 0.9%), 10 (3.9%, 0.9%), 20 (1.9%)
     [4A]  Wrong class day
           0 (0%, 0%), 0 (0%, 0%), 0 (0%)
     [4B]  Wrong class period
           1 (0.1%, 0.1%), 0 (0%, 0%), 1 (0.1%)
     [4C]  Wrong lesson day
           8 (0.9%, 0.7%), 7 (0.4%, 0.6%), 15 (1.3%)
     [4D]  Wrong lesson month
           1 (0.1%, 0.1%), 3 (1.2%, 0.3%), 4 (0.4%)
[5]  Missing information (e.g., lesson day)
     28 (3.2%, 2.5%), 6 (2.4%, 0.5%), 34 (3.0%)
[6]  Unrequested characters or information (e.g., student number)
     149 (17.2%, 13.3%), 55 (21.6%, 4.9%), 204 (18.2%)
[7]  Abbreviated words (e.g., "Oct." for "October")
     20 (2.3%, 1.8%), 11 (4.3%, 1.0%), 31 (2.8%)
[8]  Use of Japanese font (e.g., for numbers, use of wide Japanese *zenkaku* spaces instead of slimmer English character spaces)
     52 (6.0%, 4.6%), 9 (3.5%, 0.8%), 61 (5.4%)

Mistake totals for this category type are:
282 (32.5%, 25.1%), 91 (35.7%, 8.1%), 373 (33.2%)

**Typographical Mistakes**

Students made more mistakes of this type than any other.
[9]    All caps
         110 (12.7%, 9.8%), 4 (1.6%, 0.4%), 114 (10.2%)
         [9A]    For first name
                    46 (5.3%, 4.1%), 2 (0.8%, 0.2%), 48 (4.3%)
         [9B]    For family name
                    46 (5.3%, 4.1%), 2 (0.8%, 0.2%), 48 (4.3%)
         [9C]    For day
                    2 (0.2%, 0.2%), 0 (0%, 0%), 2 (0.2%)
         [9D]    For month
                    16 (1.8%, 1.4%), 0 (0%, 0%), 16 (1.4%)
[10]    Incorrect caps
         90 (10.4%, 8.0%), 18 (7.1%, 1.6%), 108 (9.6%)
         [10A]  In first name (e.g., "TAro")
                    27 (3.1%, 2.4%), 1 (0.4%, 0.1%), 28 (2.5%)
         [10B]  In family name (e.g., "tanaka")
                    45 (5.2%, 4.0%), 4 (1.6%, 0.4%), 49 (4.4%)
         [10C]  In day
                    4 (0.5%, 0.4%), 4 (1.6%, 0.4%), 8 (0.7%)
         [10D]  In month
                    11 (1.3%, 1.0%), 9 (3.5%, 0.8%), 20 (1.8%)
         [10E]  Of ARS
                    3 (0.3%, 0.3%), 0 (0%, 0%), 3 (0.3%)
[11]    Misspelling
         26 (3.0%, 2.3%), 39 (15.3%, 3.5%), 65 (5.8%)
         [11A]  Of first name
                    11 (1.3%, 1.0%), 0 (0%, 0%), 11 (1.0%)
         [11B]  Of family name
                    9 (1.0%, 0.8%), 15 (5.9%, 1.3%), 24 (2.1%)
         [11C]  Of day
                    5 (0.6%, 0.4%), 6 (2.4%, 0.5%), 11 (1.0%)
         [11D]  Of month
                    1 (0.1%, 0.1%), 18 (7.1%, 1.6%), 19 (1.7%)
         [11E]  Of ARS
                    0 (0%, 0%), 0 (0%, 0%), 0 (0%)
[12]    Spacing
         359 (41.4%, 32.0%), 103 (40.4%, 9.2%), 462 (41.2%)
         [12A]  No spacing (e.g., "Monday3")
                    271 (31.3%, 24.2%), 18 (7.1%, 1.6%), 289 (25.8%)
         [12B]  Extra spacing (e.g., "Monday   3")
                    88 (10.1%, 7.8%), 85 (33.3%, 7.6%), 173 (15.4%)

Mistake totals for this category type are:
585 (67.5%, 52.1%), 164 (64.3%, 14.6%), 749 (66.8%)


**Discussion**

With the tallies and calculations presented above, the scale of students' renaming mistakes –

and the reason for conducting the present study – should now be apparent. While to err is human, nearly a quarter of all ARSs received were not renamed properly, *even after students received repeated instructions, reminders, and examples for renaming their files*. While there are patterns evident in the particulars of their mistakes, as revealed above (e.g., that there was a general decrease in incorrectly renamed ARS files between semesters, that the longer fall-semester month names were misspelled more often than their shorter spring-semester counterparts), due to space limitations, the current paper must be restricted to analyzing students' mistakes with respect to the background areas discussed above, as they were all interrelated and had bearing on the research finding interpretations.

**Area 1: The Following of Instructions**

Since so many file renaming mistakes were made, it appears that these mistakes resulted from students simply not following instructions. Although the relatively infrequent instruction-based mistakes evinced their ability to follow *global* instructions on renaming (i.e., that files must be renamed), the large number of detail-based and typographical mistakes – particularly those made by unrequested character inclusion and incorrect spacing – shows that students were failing to follow the *specific* instructions outlined by the PFRC. Specifically, considering (a) the existence of the Weekly Schedules given to a majority of students and (b) the I/R's reminders included explanations of common student renaming mistakes as well as calls for students to double-check file names for PFRC adherence, it can be surmised that students not following instructions came less from any information processing difficulties, language-based barriers, or working memory problems, but rather, from students failing to engage in the necessary and oft-requested *proofreading* of their typed file names prior to submission.

Proofreading, as both a task and a skill in its own right, is about writers ensuring the accuracy of their written work at the surface/mechanical level rather than at the deeper *editing* level of content and meaning (Pagel & Norstrom, 2011). Considering their many previous years of English study and the short length of ARS file names (i.e., names that did not require students to consider either grammar or cohesiveness), had they simply followed instructions and proofread their work, these Japanese university students should have been able to catch a vast majority of these surface English mistakes.

**Area 2: Engaging in Mandatory Remote Learning for the First Time**

Being engaged in RTL for the first time in AY2020 might have made the following of instructions a more formidable task than it otherwise might have been. Both the practice of enactment (i.e., having learners act immediately on received information) and the providing of instructions in varied modes (i.e., both verbal and written) have been found to assist students in the following of instructions (Dunham et al., 2020), but the I/R's students were essentially only provided the latter, which is not surprising given the newness of RTL for instructors as well as students (Barron et al., 2021). Because ARS (and other document) submission was to occur *after* lesson time (e.g., after a Zoom session), students could not realistically be expected to rename their files as instructed *at the moment they were reminded to do so* and, relatedly, were unable to get helpful *immediate feedback* about their renaming accuracy (see Kogo, 2018).

Like other instructors, the I/R expected his physically-distanced and novice RTL students to be (or soon become) self-regulated learners (Lubbe et al., 2006), which many clearly were

not. Coupling all these recognized problems with the fact that synchronous digital spaces (e.g., Zoom) were likely insufficient to produce the presence effect (see Guerin, 1986, for a lengthy review on this phenomenon by which human behavior changes when another human is present) means that students were possibly *even more isolated* – and therefore less in a position to actively and accurately follow instructions – during ERT than either they or their instructors consciously realized.

## Areas 3 and 4: Using Personal Computers and Typing

It is suspected that not a few students made numerous detail-based and typographical mistakes because they were not familiar with personal computer operation (e.g., the process by which computer users may go about renaming computer files[9]) or with the physical aspects of typing, including keyboarding as well as mouse cursor movement. As explained above, if the participants in this study were typical Japanese university students, then they would have had limited exposure to and practice with personal computers and their associated physical accessories. Were this the case, no one (including the I/R) should have expected them to be even moderate-level typists. Keyboarding is a skill (Donica et al., 2019), and such beginner-level keyboarders would have likely concentrated mostly on *key location* and not *text composition* (van Weerdenberg et al., 2019) when typing. Without engaging in the oft-requested aforementioned proofreading, any typographical errors made would have simply gone unnoticed – and uncorrected.

Additionally, typing in English may have imposed additional and unique challenges, particularly because changing character input method between Japanese and English *must be done manually by the user*. Students failing to change the character input method – or accidentally switching the method from English back to Japanese when typing – would have led to mistakes. Furthermore, many students may have assumed that typed Japanese *zenkaku* spaces are no different from English spaces, which is definitely not the case.

Incidentally, as the ARS was in part a remote student-teacher communication tool, several students used it to explain their difficulties with typing:
- "It took a very long time to finish the homework because I'm not used to typing words in English. But it's good training for me!"
- "It took 3 hours to fill out all the blanks by typing…I need to keep practicing."
- "It is difficult for me to type [in] English."
- "Sorry I'm late. I'm not good at typing. So, today's lesson takes very [sic] long time."

In one instance, a student indicated that their typing skills were so poor that they would rather not type and would take pictures of their documents and submit photos as email attachments:
- "It is difficult for me to type fast, so I will write on paper."

## Recommendations

Although this was an admittedly ad hoc study conducted because it was noticed that students were making what appeared to be easily avoidable mistakes for what was originally thought to be a relatively simple task, the results as presented and analyzed above lead to the proffering of both pedagogical and research suggestions.

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[9] Several students told the I/R directly via the ARS that they did not know how to use personal computers or how to rename files.

On the pedagogical side, because it appeared that many mistakes were made largely because students failed to double-check their typed work, students should be allowed opportunities to practice and be given feedback on both proofreading and editing. Because of the many calls for consciousness-raising in second and foreign language teaching (Celce-Murcia, 2001; Ellis, 2002), just making students aware of the need and value of proofreading might eliminate unnecessary mistakes, especially those that arise from students' specific difficulties (see O'Brien, 2015).

Also, as ERT has shown us, the younger generation in Japan needs to build up its digital technology competencies. Calls for the need to increase keyboarding competency are not new (Barkaoui, 2014). Because *training* with digital technology is just as important as *access* to and *support* with it (Johnson et al., 2016), students should be required to enroll in and pass keyboarding courses prior to university enrollment. By doing so, students would necessarily be given time to acclimate themselves with personal computers and learn the ways in which personal computers differ from – and in many ways surpass – smartphones in educational spheres (Dhoray, 2020). Lessons and practice typing in both English and Japanese would be recommended.

On the research side, should ERT continue (which it is for a considerable number of university courses in Japan as of this writing) or should educational institutions opt to rely more on remote learning once the pandemic has passed, a call can be made for research that compares how different groups of students follow instructions, for instance, those in classroom-based lessons and those learning online. By doing so, educators could better determine the source of skillset deficiencies extant in the non-compliant students (Gill et al., 2012) and devise pedagogical practices to improve or otherwise mitigate them.

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