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Une image vaut mille prononciations: Using Twitter to Support the Acquisition of Hard-to-Pronounce Words in L2 French

Amanda Dalola♦

Language educators have long sought to use the latest social media platforms to not only encourage students to interact with their second language (L2) outside of the classroom, but also to build community within the learning group, and target the delivery and rehearsal of certain linguistic skills. This desire to bring language learners L2 exposure on social media platforms is motivated by the reality that online spaces afford new and different realms of interaction for participants (even for those in regular face-to-face contact) and the reality that the average college student spends between 1-2 hours in these spaces daily for recreational purposes (Educause, 2018). Twitter, an online microblogging tool, popular for news and networking, is of particular interest to many educators because its unique format restricts the length of its messages (to 140 characters from 2006-2017 and to 280 characters beginning in 2017), making the passive observation and active production of such texts manageable for learners of all levels studying different types of content and form. Even before Twitter, the efficacy of other written/visual shortform media in teaching linguistic structures was well documented. In particular, several studies reported on the successful use of SMS (Short Message Service, i.e. text messages) and MMS (Multimedia Messaging Service, i.e. a text message with any type of attached file) to teach vocabulary to learners of Italian (Kennedy & Levy, 2008; Levy & Kennedy, 2005) or learners of English (Li & Cummins, 2019; Li, Cummins & Deng, 2017;

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Saran, Seferoglu, & Cagiltay, 2009; Thornton & Houser, 2001; 2005). The success of this media type, the authors argued, was likely due to the high accessibility and concise content of SMS and MMS, given the availability of mobile phones worldwide and the limited size of text messages to 140-160 characters (Hassall, 2017). More than a decade later, the evolution of mobile phones into smartphones has given individuals round-the-clock access to the internet and the various social media applications that live there, including Twitter. If the high accessibility and concise content is indeed what made SMS/MMS successful at delivering bite-sized vocabulary lessons directly to an individual at any hour, and Twitter shares in these features, then it stands to reason that it, too, should be successful at dispensing this kind of miniature instruction, on similar and related linguistic topics. The present study explores this question, by examining the efficacy of Twitter in delivering extracurricular pronunciation instruction to L2 learners of French on canonically hard-to-pronounce words.

Twitter in L2 Instruction

The research on Twitter in the L2 classroom is divided according to the various functionalities it offers its users. While some studies have focused on how Twitter can be leveraged for collaborative learning and community building (Antenos-Conforti, 2009; Lomicka & Lord, 2012; Newgarden, 2009) or to train students in communicative competencies (Borau, Ullrich, Feng & Shen, 2009), others have examined if it can be a useful forum for observing and generating input, output, and interaction among students, instructors and native speakers (Antenos-Conforti, 2009; Blattner & Dalola, 2018; Blattner, Dalola & Lomicka, 2015; 2016; Castro, 2009; Hattem, 2012; Ullrich, Borau & Stepanyan, 2010).

On the front of collaborative learning and community building, Antenos-Conforti (2009) found that the use of Twitter among university-level L2 Italian students expanded the space limitations of the physical classroom, by inviting more routine interaction and establishing a more defined sense of community. In a similar endeavor, Lomicka & Lord (2012) reported notable cultural and linguistic gains in a community of university L2 French learners using Twitter with each other and native francophones, a culturally authentic addition that they argue adds an established social presence to the community that learners can directly benefit from.

In the area of authentic language observation, Blattner, Dalola & Lomicka (2015, 2016) examined to what extent Twitter could cultivate learners' ability to analyze and understand rhetorical norms. Beginning and intermediate French learners interpreted the tweets of native francophone celebrities on Twitter every week via the use of a guided questionnaire that focused on various linguistic forms (greetings, salutations, English borrowings, abbreviations). Learners

at both levels showed difficulty in making sense of English borrowings and abbreviations (acronyms, truncations, SMS speak) that they had not seen prior to the task, but a majority demonstrated being able to decode their meaning thanks to the focused context presented by the tweet. The authors concluded that Twitter, therefore, represents an authentic, dynamic, and effective platform for exposing language learners to elements of invisible L2 culture that build their intercultural competence. Blattner & Dalola (2018) carried out a similar study with high-intermediate ESL learners following anglophone celebrities on Twitter. Despite their real-world immersion context (i.e., living in the US at the time of English instruction), the ESL learners still showed gaps in their comprehension of linguistic variables with cultural, pragmatic, or figurative components (i.e., puns, idiomatic expressions, cultural/social/historical references to life in the US, etc.), but their skill at identifying and making sense of these elements was measurably better following participation in the task. The authors argue that Twitter is an openly accessible platform that can and should be used in L2 classrooms of all types to provide authentic, non-traditional input that complements the poor selection of pragmalinguistic choices presented in most L2 textbooks.

In the investigation of Twitter as an additional space for L2 production, Hattem (2014) invited ESL learners to write 10 sentences a week for 7 weeks using the grammatical structures presented in class in a context of participants' choosing from their class or personal life. Learners then received corrective feedback on their tweets from the instructor, which encouraged them to re-engage with their posts in the dynamic style of an instant messaging chat room, rather than the static style of a blog, a process which moved the target production of the participants from the level of the sentence to the level of the utterance. The author concluded that the use of Twitter allowed learners to take ownership of their learning by causing them to create their own learning contexts via the framing and reframing of their activities.

Pronunciation Instruction

The Communicative Approach to Language Teaching, the predominant method of foreign language instruction in the Americas and Europe since the 1980's which emphasizes interaction as both the means and the goal of study, has not consistently focused on the development of phonetic or phonological awareness in foreign language instruction, resulting in several generations of learners who have received little to no explicit instruction on the phonetic trends that characterize their language of study (Morley, 1991; Burgess & Spencer, 2000, among others). Despite the strong prescriptivist forces attempting to set the tone for the use of localized varieties of Normative French in France and in Quebec, e.g., *l'Académie française* and *l'Office québécoise de la langue française (OQLF)*, respectively, most 21st-century students of the language outside of these spaces

will not have access in their curricula to a designated course in French Phonetics/Phonology/Pronunciation that focuses on the development of phonetic skills unique to the L2. Combined with a dwindling number of foreign language classes being offered at American universities (Stein-Smith, 2019), a rise in the number of foreign language autodidacts (Blanco, 2020), and the French language's notoriously opaque orthography (i.e., an idiosyncratic relationship between what is written and what is pronounced) (Ziegler et al., 2010), the need for additional pedagogical methods that explore novel formats and content in the area of French pronunciation is significant.

Twitter in L2 Pronunciation Instruction

A few applied linguists have already identified this gap in the literature and set about measuring the efficacy of Twitter in foreign language pronunciation instruction. The first, Mompean & Fouz-González (2016), report on a group of 16 L1 Spanish EFL students' acquisition of three kinds of canonically hard-to-pronounce words in English: silent letters, e.g., *aisle*, unusual grapheme-phoneme correspondences, e.g. ***s**ugar*, and stress in underived lexical items, e.g. ***CA**-tho-lic*. 27 testwords were selected from the results of a pretest—only words that had been mispronounced by 95%+ in the group were eligible to be a testword. Then participants received one tweet a day for 27 days that contained instruction on how to pronounce the testword, either within the body of the tweet or in a link to an audio or visual resource that contained the testword. Following the 27 tweets/days, participants engaged in a posttest that elicited their pronunciation of the testwords. Results reported a high level of interaction with the instructional tweets and significant improvement in the pronunciation of participants who had completed all phases of the task. Plutino (2017) took a different approach to combining Twitter with pronunciation instruction, by encouraging her group of 35 second-semester university-level Italian students to use the speech-to-text function on their cellphones to compose tweets in Italian. Although this method slowed down the process of tweeting and, in turn, the resulting interactions, 75% of participants reported finding the process useful for assessing their pronunciation and identifying accuracy errors.

The following research investigates the efficacy of Twitter in instructing university-level learners of French on six different types of canonically hard-to-pronounce words in French. More specifically, it will examine the role of testword type, lexical frequency, and type of supporting media to determine which factors, if any, play a significant role in the method's efficacy.

Methods

Participants

Twelve L1-American English L2-French learners (7 men, 5 women), ranging in age from 18-67 years ($\bar{x}$=23.92, SD=13.62) and enrolled in an intermediate third-year oral French class at a large public American university, participated in the study.

Procedure & Stimuli

In the style of Mompean & Fouz-González (2016), participants were first audio-recorded playing a game focused on adjectival agreement that required them to speak aloud 108 commonly mispronounced adjectives and nouns in French (hereafter, pretest). This set of target words was divided into six different categories depending on the nature of the pronunciation difficulty they presented for learners: 1) unusual sound-spelling correspondences (e.g., ***poêle, chandail***), 2) silent final consonants (e.g., ***tronc, œufs***), 3) silent non-final consonants (e.g., *com**p**toir*), 4) pronounced final consonants (e.g., *la**ps**, fi**l***), 5) English-French cognates with unexpectedly pronounced letters (e.g., ***p**sychiatre*), and 6) English-French cognates with globally different pronunciations (e.g., ***x**ylopho**n**e*). An examination of the recordings found that 33 of the 108 words were mispronounced by every participant; these 33 words were then redistributed into a smaller set of 24 testwords, via the selection of four words from each of the six difficulty categories, and balanced for lexical frequency (Leipzig Corpora Collection, 2012) (see Table 1 for complete set of stimuli).

Unusual sound-spelling correspondences (Un So-sp)	*corail, hall, secondaire, poêle*
Silent final consonants (SFC)	*joug, escroc, porc, croc*
Silent non-final consonants (SNFC)	*comptoir, comptabilité, baptême, sculpture*
Pronounced final consonants (PronFC)	*os (sg.), as, chips, abject*
English cognates with different pronunciations (EngCogwDiffPr)	*dessert, version, exercice, xénophobe*
English cognates with silent letters in English that are pronounced in French (EngCogwSLsFr)	*psychique, psychose, psychologue, pseudonyme*

Table 1: The set of 24 testwords (four in each of the six pronunciation difficulty types).

Participants then followed the handle @GamecoqGaspard and the hashtag #17Fronetics on Twitter and received a tweet containing overt pronunciation

instruction targeting one of the testwords once a day for 24 days. Of the 24 total tweets participants received during this part of the task, half contained an attached image illustrating the testword, while the other half contained a link to an external video that prominently displayed the testword, e.g., in the title and the clip's main content. The image and video clip tweets were presented to participants in alternation, so as to not have several of the same type on consecutive days. Search #17Fronetics on Twitter to see the full set of posts from the experiment.

During this task, participants were asked to check their Twitter at least once per day for the instructional tweet, and to interact with the tweet and its contents fully, including looking at any attached images and watching any linked video clips. Following their interaction with the tweet, they were instructed to reply *J'ai vu* 'I've seen it' to the original tweet. Participants were also encouraged to post comments or questions on the tweet, although only two participants of the total twelve added additional comments and reactions at some point during the task.

One week after the final tweet was sent, participants were audio-recorded playing a different adjective matching game (hereafter, posttest) that elicited their pronunciations of each of the 24 testwords aloud. Recordings were inspected for the pronunciation of the 24 testwords and coded binarily (incorrect or correct) for their pronunciation, in terms only of the realization of the difficult element of the word. At the close of their participation in the experiment, participants completed an exit survey that asked them to reflect on various aspects of the task and provide satisfaction and involvement ratings via quantitative and qualitative methods.

Participants were audio-recorded during the pretest and posttest via a Marantz Omnidirectional XLR Microphone connected to a Marantz PMD660 flash recorder at a sampling rate of 44.1 kHz with 16-bit quantization.

Statistical Analyses

To determine if the Twitter task had been effective at providing meaningful pronunciation instruction, pretest and postest pronunciation accuracy scores were submitted to a repeated-measures ANOVA using the *rstatix* package (Kassambara, 2020) in R (R Core Team, 2019), with *time* (categorical (2 levels): pretest, posttest) as the independent variable.

To determine if tweet type, testword type or lexical frequency played a role in conditioning participants' pronunciation accuracy, binary measures of pronunciation correctness were submitted to a factorial logistic regression using the *lme4* package (Bates et al., 2014) in R (R Core Team, 2019), with *tweet type* (categorial (2 levels): accompanying image, accompanying link to external video), *testword type* (categorical (6 levels): unusual sound-spelling

correspondence (Un So-sp), silent final consonants (SFC), silent non-final consonants (SNFC), pronounced final consonants (PronFC), English cognates with different pronunciations in French (EngCogwDiffPr), English cognates with silent letters that are pronounced in French (EngCogwSLsFr)), and *lexical frequency* (continuous) as independent variables.

Analysis and descriptive statistics of the quantitative and qualitative data collected during the exit survey were carried out in Microsoft Excel.

Results

Pretest-Posttest Gain

Participants' pretest and posttest pronunciation accuracy scores are presented in Table 2.

Participant	Pretest score (%)	Posttest score (%)
P1	0/0 (0%)	13/24 (54.2%)
P2	0/0 (0%)	13/24 (54.2%)
P3	0/0 (0%)	13/24 (54.2%)
P4	0/0 (0%)	11/24 (45.8%)
P5	0/0 (0%)	14/24 (58.3%)
P6	0/0 (0%)	12/24 (50.0%)
P7	0/0 (0%)	11/24 (45.8%)
P8	0/0 (0%)	13/24 (54.2%)
P9	0/0 (0%)	14/24 (58.3%)
P10	0/0 (0%)	14/24 (58.3%)
P11	0/0 (0%)	14/24 (58.3%)
P12	0/0 (0%)	12/24 (50.0%)

Table 2: Pretest and posttest pronunciation accuracy scores listed by participant.

The results of a repeated-measures ANOVA report significantly different pronunciation accuracy scores across time #1 (pretest) and time #2 (posttest) ($F(1, 552) = 191215.61$, $p<0.0001$). Post-hoc analyses with a Bonferroni adjustment revealed that all pairwise differences between time points were statistically significant ($p<0.0001$). Since the testwords were comprised of items that participants all mispronounced in the pretest (therefore scoring a 0), this finding documents a significant improvement in participants' pronunciation accuracy following the instruction task via Twitter, indicating its efficacy.

Predictor Variables

The results of a factorial logistic regression are visualized in Table 3.

	Odds Ratio	Std. Error	z value	p value	
(Intercept)	0.412	0.449	-1.976	<0.050	*
tweettype=Image	5.898	0.635	2.794	<0.010	**
testwordtype=SFC	2.055	0.608	1.185	0.236	
testwordtype=SNFC	2.429	0.607	1.462	0.144	
testwordtype=PRONFC	0.810	0.651	-0.325	0.746	
testwordtype=EngCogwDiffPr	0.810	0.651	-0.325	0.746	
testwordtype=EngCogwSLsFr	0.810	0.651	-0.325	0.746	
tweettype=Image* testwordtypeSFC	1.403	0.976	0.347	0.729	
tweettype=Image* testwordtypeSNFC	0.143	0.859	-2.260	<0.050	*
tweettype=Image* testwordtypePronFC	3.561	1.000	1.266	0.206	
tweettype=Image* testwordtypeEngCogwDiffPr	1.933	0.659	0.703	0.482	
tweettype=Image* testwordtypeEngCogwSLsFr	1.235	0.211	0.232	0.816	

Table 3: Factorial logistic regression output table. Estimates are displayed in odds ratios.

The best-fit model selected *tweet type* and *testword type* as relevant predictor variables but not *lexical frequency*, suggesting that frequency may not play a significant role in conditioning participants' pronunciation accuracy. A significant interaction was found between tweet type and testword type, such that words containing silent non-final consonants (SNFC) (e.g. *comptoir*) did not exhibit significantly higher pronunciation accuracy rates when presented in tweets containing an image, as did all other testword types ($p<0.05$), as shown in Figure 1.

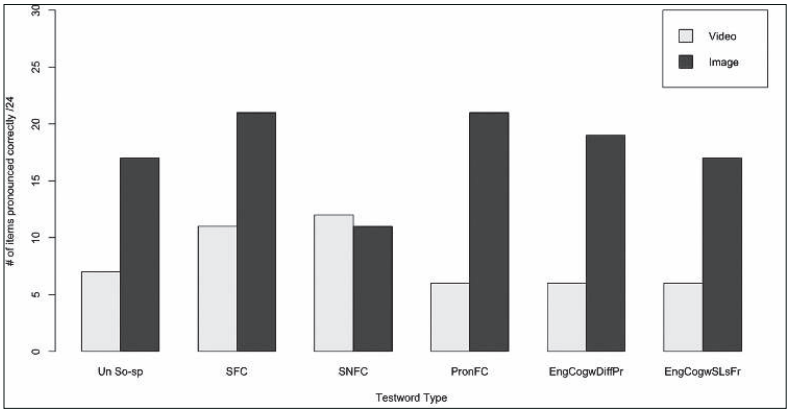


Figure 1: Pronunciation Accuracy by Tweet Type and Testword Type.

A main effect was also found for tweet type, in which words presented in tweets containing images were 5.9 times more likely to be pronounced correctly than those presented in tweets containing links to external videos ($p<0.01$), as shown in Figure 2.

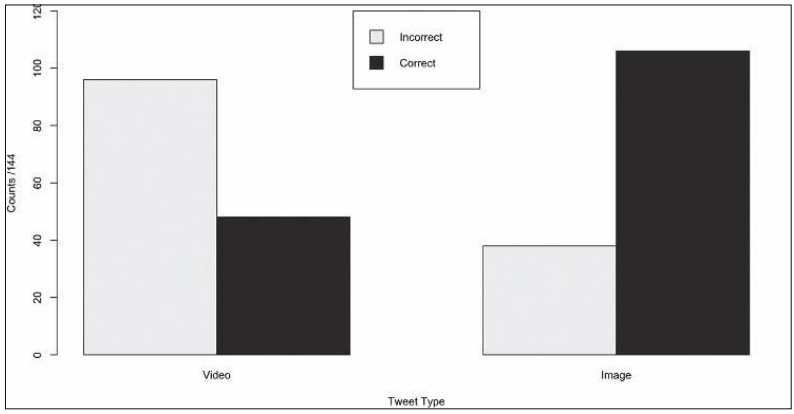


Figure 2: Pronunciation by Tweet Type.

Participant Reactions

In the exit survey, participants were asked to rate on a scale of one to ten how satisfied they were with the experience, how likely they would be to participate in a similar task again, and how much they felt their own pronunciation in French had improved as a result of their participation in it. The results from these questions are visualized in Table 4. All twelve participants completed the exit survey.

	Average/Max (Std.Dev.)
Satisfaction with the experience	6.25/7 (1.482)
Likeliness to participate in similar task again	10/12
Self-rated pronunciation improvement score	5.67/7 (1.37)

Table 4: Exit survey participation and satisfaction feedback.

The results from these questions suggest that the vast majority of the twelve-person test group found their participation in the task to be satisfying, worthwhile and effective for improving their pronunciation in French. These trends were also echoed in the free-response reflective feedback, displayed in Table 5.

Positive reflections	Negative reflections
1a. "I thought it was fun and funny."	1b. "I didn't like having to check Twitter every day. I only get on a few times a week normally."
2ab. "I wish we could have spent more time doing it. I need help with pronunciation!"	
3a. "Some of the tweets were hilarious and made me excited to see what was next."	3b. "If I didn't like the song in the link, I didn't want to wait for the chorus to hear the word I was supposed to be listening for."
4a. "It was educational but fun."	4b. "I don't like social media, so I didn't like having to use it for a class."
5a. "I liked that it was short and to the point."	

Table 5: Free-response reflections from the exit survey.

The positive aspects cited by participants included the entertaining nature of the task, its educational value, and the concision of each of the pronunciation lessons, while the negative aspects focused on the use of social media (at all or on a daily basis) and the amount of time necessary to engage with the linked videos. One comment (2ab) was categorized along both positive and negative lines because it was not possible for the researcher to deduce how it was intended from its written form, i.e., the method by which this data was collected.

Discussion

Twitter, a Useful Platform for Pronunciation Instruction

The finding that participants scored significantly higher in pronunciation accuracy during the posttest than during the pretest suggests that the Twitter platform, even with its constrained context of 140 characters (at the time of this experiment), lends itself well to microlessons on (French) pronunciation. This result is particularly meaningful here, given the low rate of supplemental interaction with the tweets that was cited among this sample population (beyond the posting of confirmation messages that the tweet had been seen). Mompean & Fouz-González (2016) also cite significant improvement in the pronunciation of testwords across pre- and posttests but do so in the context of high levels of participant interaction with the tweets. The finding here then suggests that participant interaction beyond the passive reception of and engagement with the tweet's contents is not necessary for a positive effect to result. Future research should aim to assess the interaction of different participation types and varying lengths of time between the posttest and the Twitter activity to determine if the same positive results remain constant in the long term. A more robust sample and

the inclusion of a control group (i.e., a group not participating in the Twitter task that participates in both the pre- and posttests) should also be targeted in future work, as the results reported here are based on a group of twelve participants without a control group for comparison.

A Picture Is Worth 1,000 Words But Not for SNFCs

That tweets containing images were more likely to yield correct pronunciations than those containing links to external video clips suggests that learners on Twitter may show a preference for media types that are quickly consumed while scrolling, without the need to pause, click on and wait for external links. This finding elaborates previous research on mobile learning in the 21st century that identifies language learners' preference for "opportunistic, bite-sized learning" over that which requires more time and a deeper attention (Kenning, 2007:192). This noted lack of engagement with the links to external videos may be caused by any number of reasons: lack of time, of interest, of headphones, of ability to understand what is being said/sung in the clip or of being in a location where media can be played aloud. The one exception to this finding seemed to be the case of SNFCs (e.g., *com**p**toir*), which was the sole testword type that did not exhibit significantly higher pronunciation accuracy rates when presented with images versus links to external videos. This may suggest that some pronunciation difficulty types are more difficult for learners to master than others. In this case, a difficulty with SNFCs could indicate that learners have a harder time extending the more general phonological behavior of final consonant non-realization to other positions in the word than they do mastering idiosyncratic sound-spelling correspondences on a case-by-case basis. This finding runs contra Mompean & Fouz-González (2016) who reported the greatest amount of pretest-posttest accuracy gain in their silent letters category, however, their testword types did not distinguish between final and non-final position as they did in this study, so the comparison is not equal. Another possibility for why SNFCs did not exhibit significantly higher pronunciation accuracy rates when presented with images versus links to external videos is the fact that most of the testwords in this category (*com**p**toir, com**p**tabilité, ba**p**tême, scul**p**ture*) also have cognate status in English and French, which may confound participants since these words exist in their native language with internal consonants that are unquestionably pronounced. A third possibility to explain the exceptional case of SNFCs is that the images chosen to support the items in this category may have been comparatively less engaging or less catchy than the images used for the other categories. As "catchiness" is a subjective determination, future studies would do well to elicit engagement ratings from a small but representative sample to control for any unforeseen variation in appeal ahead of the experiment.

Fun If You Can Stand Being on Twitter

In the post-task reflection, participants commented on the entertainment and educational value of the task but not on its success at building community within the learning group, a positive outcome of Twitter use in the classroom cited by several previous studies (Antenos-Conforti, 2009; Lomicka & Lord, 2012; Newgarden, 2009). This difference is likely due to the task being carried out largely as a passive task in which participants received their daily tweet but did not need to interact with it or with each other beyond posting confirmation that they had seen it. Mompean & Fouz-González (2016), who followed the same method, suggest that asking participants to confirm their reception of the tweets may be viewed as overbearing on the part of the researchers, to the point that it inhibits any less formal and/or more spontaneous participation. The following comment from our exit survey adds additional insight to the question: *"I had never seen many of these words before. Sometimes I wanted to say something in the comments about them but I wasn't sure what I could say that wouldn't make me look dumb."* Although lexical frequency was not selected as part of the best-fit model for predicting pronunciation accuracy, it may very well play a meaningful role in conditioning participants' ease of engagement.

Conclusions

The microblogging tool, Twitter, has inspired a full range of activities in L2 instruction since its 2006 inception—from community building and passive tweet observation to active tweet composition by learners in their L2. This study explored Twitter's effectiveness in dispensing bite-sized pronunciation lessons on different types of hard-to-pronounce words to intermediate L2 learners of French, through an examination of the role of testword type, tweet type and lexical frequency on pronunciation accuracy. The results found Twitter to be overwhelmingly successful in delivering micro pronunciation lessons, but not equally across different testword types and tweet types. A significant increase in pronunciation accuracy was reported for all testword types when the tweet contained an attached image versus a link to an external video, except for SNFCs. As such, this study has implications for both phonology and applied linguistics. It appears that learners experience varying degrees of difficulty with different types of irregularly pronounced words, inviting instructors to redistribute course attention accordingly. Additionally, while Twitter has been found to be a generally useful tool for delivering micro pronunciation instruction in L2 language classes, it is important to acknowledge that a tweet's supporting media may make or break its effectiveness, particularly if that media counteracts the

tweet's highly digestible shortform by requiring prolonged attention from rapidly scrolling learners.

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