



Tsunemoto, A., Trofimovich, P., & Kennedy, S. (2020). Pre-service teachers' beliefs about second language pronunciation teaching, their experience, and speech assessments. *Language Teaching Research*. Published online 2 July 2020. <https://doi.org/10.1177/1362168820937273>

**Pre-service teachers' beliefs about second language pronunciation teaching, their experience, and speech assessments**

Aki Tsunemoto, Pavel Trofimovich, and Sara Kennedy

Concordia University, Montreal, Canada

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

Teacher cognition has attracted increased attention among second language (L2) researchers and practitioners, likely because of its potential consequences for classroom practices, such as teaching and assessment. Prior research has revealed links between teacher beliefs about pronunciation teaching and teachers' own experience (e.g., amount of teacher training and teaching experience). However, no research has to date focused on how teachers' experience and their beliefs are intertwined, possibly affecting teacher assessments of L2 speakers' pronunciation. For this study, 77 Japanese pre-service teachers of English completed an online questionnaire examining their beliefs about the teaching of English pronunciation and eliciting details about their L2 teaching and learning experience. Additionally, pre-service teachers assessed 40 Japanese secondary school students performing an extemporaneous speech task, rating these speakers for comprehensibility, accentedness, and fluency. Results showed that pre-service teachers could be categorized into two distinct profiles, defined by joint contributions of pre-service teachers' experience (a mixture of language learning/teaching experience and pronunciation-related instruction) and their beliefs (teachability of L2 pronunciation and approaches to its teaching). Pre-service teachers with more experience appeared to be more skeptical about how (easily) L2 pronunciation can be learned and taught and also provided harsher accentedness ratings, compared to pre-service teachers with less experience, revealing links between experience, beliefs, and speech assessments. Taken together, the findings reveal how pre-service teachers' experience might shape their beliefs and assessments, implying that teacher educators must encourage future teachers to hold positive views about the teachability of L2 pronunciation by shifting their attention toward communicatively oriented dimensions of L2 speech and by providing teachers with pedagogical skills to target these dimensions.

*Keywords:* beliefs, pre-service teachers, experience, EFL, Japanese, pronunciation, assessment, comprehensibility, accent, fluency

### **Introduction**

Teacher beliefs, which broadly refer to teachers' opinions and ideas about the learning and teaching of languages (e.g., Nishino, 2012), play a significant role in foreign and second language (L2) learning because they can impact teachers' classroom practices, including teaching and assessment (e.g., Borg, 2003). This may be particularly the case in contexts where students' L2 experience is restricted to language classrooms (e.g., Wach & Monroy, 2019). If the goal of teacher training programs is to equip teachers with appropriate knowledge and practical expertise to use in their teaching, then it is important to explore the experience and beliefs of pre-service teachers and to understand how those could affect teachers' practice. For instance, pre-service teachers frequently hold strong beliefs about teaching based on their own learning experience (e.g., Peacock, 2001), and such beliefs are often difficult to change (e.g., Holt-Reynolds, 1992). Therefore, understanding the origins of pre-service teachers' beliefs, especially those that stem from their own teaching and learning background, is essential to improving the effectiveness of teacher training and ultimately also the practice of L2 instruction.

Despite being an important component of successful L2 communication, pronunciation is one of the least explored skills with respect to the relationship between teachers' beliefs and practices. Prior research has uncovered links between teachers' beliefs about pronunciation instruction and their learning and teaching background (e.g., Burri et al., 2017; Nagle et al., 2018), such that teachers with more experience in pronunciation pedagogy often express stronger beliefs about the importance of teaching pronunciation (e.g., Uchida & Sugimoto, 2020). However, researchers have not revealed strong or consistent associations between teachers' pedagogical beliefs and their actual classroom practices (Foote et al., 2011; Huensch, 2019b), including teacher assessments of L2 speakers' performance. In fact, to our knowledge, very little is known about the potential role of pre-service teachers' beliefs in

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

their assessments of L2 pronunciation, which is an important aspect of teachers' practice. Therefore, with the overall goal of clarifying the origins of pre-service teachers' beliefs and relating these beliefs to L2 practice, this study examined whether pre-service teachers' experience and beliefs about L2 English pronunciation instruction are associated with their assessments of L2 pronunciation.

### **Teachers' Beliefs and L2 Pronunciation**

Conceptualized within the umbrella term of teacher cognition, which encompasses teachers' beliefs, knowledge, perceptions, and attitudes (Baker, 2014), research on teachers' beliefs has explored how beliefs inform classroom practices, which typically refer to what teachers do as part of instruction (e.g., activities, tasks, assessments). Considering the potential consequences of teachers' beliefs for classroom practice, beliefs have been examined in relation to various constructs, including teaching method (Nishino, 2012), learner autonomy (Borg & Alshumaimeri, 2019), language use (Wach & Monroy, 2019), and feedback (Kamiya, 2016; Kartchava et al., 2020), or with respect to specific aspects of language, such as grammar (Nishimuro & Borg, 2013; Polat, 2009), reading (Kuzborska, 2011), and writing (Lee, 2010). However, to date, still relatively little is known about teachers' beliefs about the teaching and learning of L2 pronunciation.

Despite researchers' efforts to reorient the teaching and learning of L2 pronunciation to include a focus on attaining intelligible, comprehensible speech as an alternative to nativelike, non-accented production (Derwing & Munro, 2015; Levis, 2005), many teachers are yet to embrace this focus as a teaching and learning goal (Huensch, 2019a; Nagle et al., 2018; Uchida & Sugimoto, 2020). Similarly, although teachers often believe pronunciation instruction to be important (Breitkreutz et al., 2001; Buss, 2016; Foote et al., 2011; Henderson et al., 2012; Huensch, 2019a; Nagle et al., 2018), they nevertheless lack training and/or confidence in pronunciation teaching, which may also explain their skepticism about

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

the effectiveness of pronunciation instruction (Baker, 2014; Georgiou, 2018; MacDonald, 2002; Murphy, 2014).

Teachers' beliefs about L2 pronunciation likely develop through diverse experiences, including their participation in teacher training programs (e.g., coursework) and their own L2 teaching or learning history. For instance, Nagle et al. (2018) surveyed 100 L2 Spanish teachers in the United States, examining teacher beliefs about the teaching of L2 Spanish pronunciation as a function of teachers' experience, which included varying amounts and kinds of pronunciation-related coursework. Teacher beliefs were targeted through an online questionnaire, with 15 items focusing on specific empirical findings in recent L2 pronunciation research (e.g., extent to which L2 pronunciation is teachable, potential focus of pronunciation teaching). Teachers' experiential background was categorized into seven categories, based on how extensively pronunciation-specific topics were covered in coursework (e.g., coursework with no specific information on pronunciation teaching vs. coursework that explicitly featured pedagogical activities and techniques). Among other findings, Nagle et al. (2018) reported that teachers who had completed coursework with a greater content focusing on pronunciation pedagogy attributed more value to instruction and were more willing to consider pronunciation instruction a priority, compared to teachers with less training in pronunciation pedagogy. In another study, exploring the link between teachers' beliefs and their personal experience as language learners, Uchida and Sugimoto (2020) showed that Japanese teachers' overseas experience (i.e., living abroad for at least a month) was associated with different confidence levels in their self-perceived pronunciation. Those who were more confident were also more likely to value pronunciation teaching and believe in its effectiveness. In contrast, teachers' teaching experience or background in phonetics was not associated with their beliefs. Thus, teachers may gain confidence in their own pronunciation and develop beliefs about the effectiveness of pronunciation instruction

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

not only based on their experience in teacher training but also through personal experience of living abroad and using the target language for communication.

With respect to the relationship between teachers' beliefs and their classroom practices, Huensch (2019b) showed that teaching assistants with previous experience in pronunciation teaching most frequently mentioned pronunciation-related issues in their classrooms, revealing a link between experience and practice. Burri et al. (2017) investigated how teachers' participation in pronunciation-focused courses (e.g., learning phonetics, practicing teaching techniques, observing classroom teaching) was related to their teaching practices. They showed that teachers were able to translate recently acquired knowledge about specific teaching techniques (e.g., kinesthetic/tactile activities) into classroom practice. Nonetheless, teachers' beliefs do not always reflect their behaviors. For example, Huensch (2019b) reported that the teachers in her study believed pronunciation instruction to be important and were prepared to teach pronunciation frequently. Yet only 2% of these teachers' class time was devoted to pronunciation.

The least explored aspect of research on teacher cognition is the role of teachers' beliefs in their assessment of L2 pronunciation. In a rare example, Bøhn and Hansen (2017) asked Norwegian teachers of English with varying lengths of teaching experience (1–32 years) to express their attitudes toward pronunciation teaching goals (i.e., intelligibility vs. nativeness) and to prioritize specific pronunciation features (e.g., individual sounds, stress) when assessing L2 speakers' oral performance. Most teachers commented that they would penalize speakers if they had experienced difficulty in understanding their speech, highlighting comprehensibility (ease of understanding) as an assessment criterion. For these teachers, more extensive teaching experience was also associated with increased concern for pronunciation accuracy. Nevertheless, these findings must remain speculative as it remains

unclear precisely which types of experiences, besides teachers' pedagogical practice, and which teacher beliefs might feed into their assessments of L2 pronunciation.

### **Rater Profiles and L2 Speech Assessment**

Prior research focusing on various rater variables in L2 speech research complements work on teacher cognition because this research helps identify specific rater background profiles relevant to teachers' assessments. L2 pronunciation assessment can be affected by various rater characteristics, including raters' language background (Winke et al., 2013), familiarity with the target language (Foote & Trofimovich, 2018), teaching experience (Fayer & Krasinski, 1987; Kang, 2012; Kang & Rubin, 2009), linguistic training (Isaacs & Thomson, 2013), and L2 learning experience (Harding, 2012; Saito et al., 2019). For instance, raters from the same linguistic background as L2 speakers have been shown to be more lenient than those without a shared background (e.g., Winke et al., 2013). Similarly, L2 raters often (but not always) enjoy an intelligibility benefit when evaluating L2 speakers from their own language background, possibly because these raters' knowledge of language-specific pronunciation issues enables them to understand L2 speech more easily (e.g., Harding, 2012; Kang et al., 2020). However, L2 raters have also been found more severe when assessing L2 pronunciation accuracy, compared to native speakers (e.g., Fayer & Krasinski, 1987). Thus, although L2 raters may upgrade fellow L2 speakers in their evaluations, they may also be critical about these speakers' accuracy.

Prior work on L2 speech assessment focusing directly on teachers as raters has similarly revealed that teachers' experience in language training or teaching and their own language proficiency underlie their judgements of L2 speech. On the one hand, teachers are often more lenient in assessing L2 oral performance than non-teachers (e.g., Kang, 2012; Kang & Rubin, 2009), but teachers might also be more severe in their assessments compared to raters with no teaching background (Galloway, 1980). On the other hand, raters with

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

different amounts of linguistic or teaching experience sometimes do not differ in their L2 assessments (Huang, 2013; Isaacs & Thomson, 2013), although those with a background in linguistics provide more elaborate justifications for their assessments (Isaacs & Thomson, 2013). Possible explanations for these discrepancies include compassion, such that raters with more teaching experience might be more sympathetic to L2 speakers' pronunciation difficulties (e.g., Kang, 2012), and experience as being L2 learners' themselves, which could make raters more critical about linguistic accuracy (Galloway, 1980). These explanations aside, there is currently no clear understanding of how teachers' background and experience profiles are associated with their L2 speech assessments.

### **The Current Study**

Prior work on teachers' beliefs regarding L2 pronunciation learning and teaching has shown that teachers' beliefs may have their origins in teachers' experience, either through linguistic exposure or participation in pedagogy coursework (Burri et al., 2017; Nagle et al., 2018), but that teachers' beliefs are not always reflected in their practice (Huensch, 2019b). However, there is presently little knowledge about how teachers' beliefs, coupled with various experiences, might shape teachers' L2 pronunciation assessment. Indeed, as discussed previously, prior investigations of how raters' background profiles contribute to their L2 pronunciation assessments have revealed conflicting findings (e.g., Fayer & Krasinski, 1987; Isaacs & Thomson, 2013; Winke et al., 2013), and the three-way relationship between teachers' beliefs, experience, and L2 pronunciation assessments has remained underexplored. This is particularly the case for pre-service teachers (a generally underexplored group of language professionals), whose beliefs and practices could ostensibly be shaped through tailored pedagogy in teacher training programs. Therefore, the goal of this study was to examine whether and how pre-service teachers' experience and beliefs about L2

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

pronunciation instruction are associated with their judgements of L2 speech, focusing on the dimensions of comprehensibility, accentedness, and fluency.

Two of the target dimensions (comprehensibility, accentedness) have a long history in L2 speech assessment (Derwing & Munro, 2015). Whereas comprehensibility refers to listeners' perception of how easily they understand L2 speech, accentedness captures listeners' judgments of how closely the speaker approximates the target language variety. Considering the importance of successful communication, many researchers have actively promoted comprehensible L2 speech (rather than non-accented, nativelike performance) as the main goal of L2 teaching and learning (e.g., Levis, 2005). Nevertheless, many L2 speakers (and their teachers) aspire to reach nativelike pronunciation (e.g., Tokumoto & Shibata, 2011), which means accentedness is also a key dimension for research. The final dimension (fluency), which captures listeners' perceptions of how smoothly or fluidly L2 speech is produced (i.e., without undue pauses and hesitations), is an important component of L2 speech because it contributes to listener engagement (Derwing et al., 2004). Often targeted in high- and low-stakes assessments (Derwing & Munro, 2015), the dimensions of comprehensibility, accentedness, and fluency thus capture the essential aspects of L2 speakers' pronunciation performance which should also be of relevance to teachers.

Investigating teachers' experiences and beliefs in relation to their pedagogical practices is particularly crucial in contexts like Japan (among other similar settings), where the L2 is rarely used outside educational institutions and where teachers receive little focused training in pronunciation pedagogy (Uchida & Sugimoto, 2020). Similarly, in contexts like Japan, the impact of university entrance exams, which include only written and listening components, is often so powerful that L2 speaking, let alone pronunciation, is rarely targeted in classrooms (Uchida & Sugimoto, 2018). The ongoing education reform, which prioritizes the development of communicative competence, has also introduced additional pressures on

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

educational institutions and individual teachers in that they are required to start L2 English instruction from Grade 3 (to learners aged 8–9) and to use commercially available instruments for assessment of all language skills, including speaking and pronunciation (e.g., TOEFL, IELTS) (Ministry of Education, Culture, Sports, Science and Technology, 2018, 2019). A focus on pre-service teachers' beliefs and experiences in relation to their pronunciation assessments is of critical importance in contexts such as Japan because the teachers currently undergoing teacher training will soon be required to meet the challenges of integrating L2 pronunciation in both teaching and assessment.

The specific objective of this study was therefore to examine the relationship between Japanese pre-service teachers' beliefs about teaching L2 English pronunciation, their previous language learning and teacher training experience, and their assessment of comprehensibility, accentedness, and fluency of L2 speech. The following two research questions guided this study:

1. What are the experience and belief profiles for Japanese pre-service teachers of English?
2. Do ratings of comprehensibility, accentedness, and fluency differ across pre-service teachers with different experience and belief profiles?

### **Method**

#### **Participants**

The initial sample of participants included 85 Japanese pre-service teachers of L2 English enrolled in postsecondary teacher education programs across five universities. Because eight participants' data were excluded (see below), the final sample comprised 77 pre-service teachers (44 females, 33 males), all native speakers of Japanese ( $M_{age} = 19.96$  years,  $range = 18–25$ ). Participants were recruited across the four years of a typical undergraduate teacher training program, with comparable numbers across Year 1 (23), Year 2

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

(17), Year 3 (17), and Year 4 (18); an additional two participants were attending MA-level programs in education. All but two participants had taken a standardized English exam (e.g., TOEIC, IELTS) and self-reported L2 English scores corresponding to the Common European Framework of Reference (CEFR) “independent user” or B1 level (*range* = A1–C1). Participants had started learning English at a mean age of 9.7 (*range* = 1–16), generally as part of regular school instruction, and four reported some knowledge of another language (Russian, Korean, French, Spanish) in addition to Japanese and English.

A total of 17 participants reported having prior experience of studying abroad ( $M_{stay} = 17.3$  months, *range* = 1–186), predominantly in English-speaking countries including Australia (5), Canada (4), United Kingdom (3), United States (4), and Hong Kong (1). Practice teaching is mandatory in Japanese teacher education programs, and pre-service teachers normally visit schools for 2–5 weeks observing experienced teachers’ classes and performing practicum teaching under their supervision. Of the 77 participants, 21 had reported experience of practice teaching ( $M_{length} = 4.5$  weeks, *range* = 2–5) across elementary schools (11), junior high schools (9), and senior high schools (1). Although linguistic courses, such as phonology and phonetics, are not required for obtaining a teaching license in Japan (Ministry of Education, Culture, Sports, Science and Technology, 2017), 39 participants had reported taking at least one course in linguistics, including phonology (29), syntax (26), phonetics (22), semantics (23), pragmatics (17), and morphology (16). In addition, 19 participants reported participating in pronunciation-specific activities, such as university courses focused on pronunciation teaching (12), coursework at foreign universities (3), extra-curricular English conversation lessons (2), courses at a senior high school (1), or standalone pronunciation workshops (1).

### Materials

The main research instrument was an online questionnaire (see Appendix A) targeting three sets of information: (a) participants' experience and background in L2 learning and teaching, (b) their beliefs about the teaching of L2 pronunciation, and (c) their speech assessments. For participant background, the questionnaire elicited participants' past and current experiences, including their language learning history (e.g., age of onset of L2 learning, context, length of study) and specific language learning or teacher training activities. Participants also indicated whether their experience involved practice teaching, pronunciation-specific training opportunities, or linguistics coursework, and recorded both the length and the type of these activities. Additionally, those who had resided abroad for more than one month reported the length, location, and purpose of the visit.

Participants' beliefs about pronunciation teaching were elicited using a 15-item teacher beliefs questionnaire adapted from Nagle et al. (2018) by changing any wordings related to L2 Spanish to fit the context of teaching English in Japan. The items collectively focused on the timing and effectiveness of pronunciation teaching, teachers' pedagogical goals, importance of pronunciation teaching, and approaches to addressing pronunciation issues (see Appendix A). Seven other items targeted issues unrelated to this study and are not discussed further. The experience and beliefs questionnaire items were first developed in English, then translated into Japanese by the first author, a native speaker of Japanese, and subsequently back-translated into English by another native Japanese speaker with knowledge in applied linguistics to check for consistency. Finally, the updated Japanese version was checked for readability by another native Japanese speaker to ensure that the wording was appropriate for pre-service teachers.

For speech assessment, participants evaluated short audios by 40 Japanese secondary school students ( $M_{age} = 16.1$  years,  $range = 16-17$ ) recorded as part of an earlier study

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

(Tsunemoto & Isaacs, 2020). The audios featured only male speakers (to control for possible gender effects on rating) describing a job they would like to do in the future. The speaking prompt was modeled after an IELTS long-turn task (Jakeman & McDowell, 2008) and was considered appropriate for Japanese pre-service teachers familiar with standardized exams. The 40 speakers represented a range of L2 speaking ability, as estimated through 9-point scalar ratings of comprehensibility ( $M = 4.88$ ,  $range = 2.7-7.7$ ) and accentedness ( $M = 4.0$ ,  $range = 2.0-6.8$ ) by native-speaking English raters from the UK (4 males, 2 females) in the earlier study. Although the recordings were approximately 1 minute in duration ( $M = 65.7$  seconds,  $range = 37.9-159.6$ ), only the first 30 seconds were extracted from each and used as the target audios, which is consistent with common practice in L2 speech research (Derwing & Munro, 2015).

### **Procedure**

The questionnaire was administered through LimeSurvey (<https://www.limesurvey.org>). Participants accessed the questionnaire via an invitation sent by a university instructor. They were advised to answer the questionnaire in a quiet location, budgeting up to 2 hours for completion. Participants first completed the questions targeting their language background and experience, followed by statements focusing on teachers' beliefs. Each of the 15 belief statements, organized in two online pages and presented in unique random orders, was accompanied by a 1,000-point sliding scale eliciting participants' agreement with each statement. The scale contained no numerical markings, but the endpoints were clearly labeled (*strongly disagree*, *strongly agree*). The initial slider position was always in the middle of the scale (corresponding to the rating of 500).

For speech assessment, participants first read the descriptions of the three target dimensions (comprehensibility, accentedness, fluency) and then practiced assigning the ratings using three practice recordings before proceeding to rate the 40 target audios. The

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

audio samples, which were presented in a unique random order for each participant and organized in sets of five across eight online pages, appeared as embedded audio files with three 1,000-point sliding scales (one per dimension) under each file (for validation of sliding scales in speech research, see Saito et al., 2016). Again, the scales contained no numerical markings (to capture impressionistic judgments of speech), but the endpoints were clearly labelled with a frowning face (on the left) and with a smiling face (on the right) to cue the directionality of the scale. The initial slider position was always in the middle. Participants could not assign any rating until they played the entire file, and only one listening per file was allowed (see Appendix B for a screenshot of the rating interface).

Although online questionnaires, compared to instruments administered in an individual session, might arguably limit researchers' control over specific aspects of data collection (e.g., timing), online elicitation tools have been shown to be associated with high internal consistency, yielding datasets comparable to those obtained in a lab (Nagle, 2019). Nevertheless, several additional controls were implemented here to increase data quality. For all questionnaire items, participants were not allowed to return to previous pages, change their answers, or skip questions, and their progress was time tracked. For speech assessment, participants were strongly encouraged to use headsets or earbuds, and the majority (73%) reported using them for rating; the remaining participants listened to the audios using built-in speakers on smartphones/tablets (17%) or computers (10%). Finally, in response to the question asking about any noise or interruptions interfering with speech assessments, 65% of participants reported no noise or disturbance; 31% reported occasional noise that did not disturb their rating; and 4% reported some interruptions. No participant cited any major issues influencing their responses and listed any concerns (in response to an open-ended question) relevant to speech ratings.

### **Data Analysis**

#### **Preliminary Checks**

The first data check involved analyzing the duration of participants' questionnaire responses, on the assumption that too brief or excessively long total completion times might indicate inattentive or careless responding. This check identified eight participants whose total completion times were either too short (e.g., 17.6 minutes) or too long (e.g., 750.9 minutes); these participants' data were therefore excluded. The remaining 77 participants completed the entire questionnaire within about 59.8 minutes, which was considered reasonable based on pilot testing.

#### **Experience**

Responses to experience questions were tabulated separately per participant, recording participants' study abroad and practice teaching experience, as well as their linguistic coursework and pronunciation-specific classes, such as workshops or seminars. Because these data displayed great variability and were distributed non-normally, with many responses falling in one modal category (e.g., length of study abroad experience varied between 0 and 186 months, with only 17 participants reporting such experience), all coding was categorical, involving either the presence or absence of a particular experience. Categorical coding was also consistent with our assumption that, at minimum, it was the presence of a given experience, rather than its length, that might define a particular teacher profile. Altogether, four experience variables were derived: studying abroad, practice teaching, pronunciation workshop, and phonetics/phonology coursework. Table 1 summarizes these experience variables, illustrating each with representative examples from participants' short-answer questionnaire responses.

Table 1 *Summary of Experience Variables*

| Experience type                | Representative examples  |
|--------------------------------|--|
| Studying abroad                | Taking English language or English for academic purposes courses abroad; acting as a Japanese teaching intern abroad; living in a homestay environment                                       |
| Practice teaching              | Performing classroom observations; developing lesson plans; teaching practice classes with assigned materials  |
| Pronunciation workshop         | Using phonetic transcription to pronounce segments and words; engaging in oral presentations; participating in conversational activities (in pairs and groups)                               |
| Phonetics/phonology coursework | Becoming familiar with conventions of phonetic transcription; learning about specific segmental and suprasegmental features of English (e.g., individual segments, word and sentence stress) |

*Note.* Although the knowledge of phonetics and phonology may not have the same impact on teachers, we made no distinction between phonetics versus phonology coursework for lack of a more refined understanding of the content of specific courses.

### **Beliefs**

Responses to belief statements were recorded as numerical values (out of 1,000). Following Nagle et al. (2018), the 15 items were thematically grouped under six categories to capture pre-service teachers' beliefs about L2 pronunciation teaching and learning. Table 2 summarizes descriptive statistics for each theme, computed across all items contributing to it, along with individual item statistics, as in Nagle et al. (2018), except importance of pronunciation, which was based on a single item.

TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

Table 2 *Descriptive Statistics for Pre-Service Teachers' Beliefs (N = 77)*

| Theme and contributing items  | <i>M</i> | <i>SD</i> |
|---|----------|-----------|
| <i>Importance of pronunciation</i>  |          |           |
| 1. Pronunciation is one of the most important aspects of language for successful communication  | 545      | 282       |
| <i>How pronunciation develops</i>   |          |           |
| 2. Pronunciation tends to develop naturally in English even for learners who don't care about improving it  | 401      | 214       |
| 1. With effort, learners can modify their English pronunciation even if they've been pronouncing things a certain way for a long time   | 700      | 189       |
| 2. Learners' improvement in pronunciation has more to do with what they experience outside the classroom than it has to do with the instruction they receive                              | 585      | 224       |
| 3. English pronunciation can be taught  | 717      | 177       |
| <i>When to teach pronunciation</i>  |          |           |
| 4. In first- and second- year English language courses, pronunciation can be skipped to focus on other skills or areas of language  | 293      | 238       |
| 5. Teachers should avoid an early focus on pronunciation as a way of preventing learners from reinforcing mistakes  | 339      | 207       |
| 6. Since pronunciation is a sensitive issue, teachers should only address it once students feel more confident in their ability to speak English  | 458      | 233       |
| <i>What pronunciation features to teach</i>   |          |           |
| 7. Even if a class is made up of learners with different backgrounds, it's possible to identify a core set of English pronunciation features that students would benefit from focusing on | 649      | 186       |
| 8. People who speak the same native language will face similar challenges in learning to pronounce a foreign language such as English   | 628      | 208       |
| 9. Learners' pronunciation issues that don't interfere with communication   | 536      | 242       |

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

|  |     |     |
|--|-----|-----|
| should be a lower priority for teachers to address   |     |     |
| <i>How to teach pronunciation</i>  | 639 | 169 |
| 10. Teachers should develop objectives and activities for pronunciation like they do for other aspects of language   | 710 | 172 |
| 11. Pronunciation is something teachers should address on the spot in response to students' problems   | 569 | 248 |
| <i>Who can teach pronunciation</i>   | 553 | 162 |
| 12. In helping learners to improve their pronunciation of English, it's more important to have a nativelike accent than it is to have training in teaching pronunciation | 428 | 212 |
| 13. I think anyone who teaches pronunciation should have a nativelike accent   | 678 | 220 |

*Note.* Several items were reverse-coded and their wording adjusted to achieve comparable directionality for all items contributing to each theme.

To illustrate broad patterns, for importance of pronunciation, the score (545) implied that pre-service teachers were relatively divided as a group regarding the importance of L2 pronunciation teaching. The score under how pronunciation develops (601) indicated that they generally tended to believe that L2 pronunciation can develop over time and/or with pedagogical intervention. For when to teach pronunciation, the score (363) suggested that pre-service teachers strongly disagreed with delaying a focus on pronunciation until later stages of L2 learning. For what pronunciation features to teach, the score (604) implied that at least some teachers were moderately supportive of the idea that L2 pronunciation instruction should target a specific feature. For how to teach pronunciation, the score (639) indicated that they also were generally in favor of providing focused pedagogical interventions targeting pronunciation. Finally, the score under who can teach pronunciation (553) indicated that, as a group, pre-service teachers were generally divided as to whether or

not having nativelike pronunciation is essential for teachers.

### **Speech Assessments**

Speech assessments were first tabulated for each participant, separately per dimension (comprehensibility, accentedness, fluency), and then checked for internal consistency (Cronbach's  $\alpha$ ). This analysis yielded high values for comprehensibility ( $\alpha = .94$ ), accentedness ( $\alpha = .97$ ), and fluency ( $\alpha = .97$ ), all in excess of the benchmark indexes of .70–.80 (Larson-Hall, 2009). The speech assessments were then averaged across the 40 speakers, separately for each participant, to enable participant-based comparisons.

All analyses targeting pre-service teachers' experience and background variables were carried out using chi-square contingency tests for frequency data. Because all beliefs and speech assessment responses were ordinal data obtained through Likert-type ratings, analyses of beliefs and speech assessments were conducted using non-parametric Mann-Whitney  $U$  tests. All effect sizes are reported as  $r$  and interpreted as .25 (small), .40 (medium), .60 (large), following the field's specific guidelines (Plonsky & Oswald, 2014).

## **Results**

### **Pre-Service Teachers' Experience and Belief Profiles**

The first research question asked whether the sample of 77 pre-service teachers included distinct profiles based on a combination of participants' experiences and beliefs. To address this question, a hierarchical cluster analysis was conducted to group participants based on their experience and background in L2 learning and teaching and their beliefs about L2 pronunciation teaching. A cluster analysis allows for identifying participant groups in a bottom-up fashion through maximizing between-group differences while minimizing within-group variance (Staples & Biber, 2015; Yamamori et al., 2003), which was considered appropriate for uncovering distinct experience and belief profiles for pre-service teachers. For experience, there were four categorical variables (studying abroad, practice teaching,

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

pronunciation workshop, phonetics/phonology coursework). For beliefs, there were six mean scores derived from the thematically grouped items. Following Staples and Biber (2015), the cluster analysis was run using the Ward method, with the squared Euclidean distance technique and all values transformed into  $z$  scores.

A two-cluster solution was chosen through analysis of clustering distances (to ensure maximal separation between groups) and inspection of a dendrogram (shown in Appendix C): Group A ( $n = 57$ ) and Group B ( $n = 20$ ). As summarized in Table 3, which presents descriptive statistics and results of between-group comparisons, Group B included more pre-service teachers who had engaged in study abroad and practice teaching (but not phonetics/phonology coursework and pronunciation workshops), compared to Group A, with effect sizes ranging between strong to very strong. In addition, Group B included participants who held weaker beliefs about how pronunciation develops and how to teach pronunciation, compared to participants in Group A, with weak-to-moderate effect sizes. The two groups did not differ in the remaining four belief factors.

Table 3 *Frequencies for Experience Variables (Number and Percent of Participants) and Scores for Belief Variables (Means, Standard Deviations) by Group*

|                         | Group A    |      | Group B    |      | Comparison |      |     |
|-------------------------|------------|------|------------|------|------------|------|-----|
|                         | $(n = 57)$ |      | $(n = 20)$ |      | $\chi^2$   | $p$  | $r$ |
| Experience variables    | $n$        | %    | $n$        | %    |            |      |     |
| Studying abroad         | 4          | 7    | 13         | 65   | 28.93      | .001 | .61 |
| Practice teaching       | 1          | 2    | 17         | 85   | 52.28      | .001 | .82 |
| Pronunciation workshops | 13         | 23   | 6          | 30   | 0.41       | .521 | .07 |
| Phonetics/phonology     | 30         | 53   | 7          | 35   | 1.84       | .175 | .15 |
| Belief factors          | $M$        | $SD$ | $M$        | $SD$ | $z$        | $p$  | $r$ |

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

|                                      |     |     |     |     |       |      |     |
|--------------------------------------|-----|-----|-----|-----|-------|------|-----|
| Importance of pronunciation          | 567 | 273 | 483 | 306 | -1.06 | .288 | .12 |
| How pronunciation develops           | 620 | 122 | 546 | 113 | -2.24 | .025 | .26 |
| When to teach pronunciation          | 356 | 169 | 385 | 147 | 0.63  | .530 | .07 |
| What pronunciation features to teach | 576 | 130 | 593 | 110 | 0.69  | .493 | .08 |
| How to teach pronunciation           | 666 | 174 | 562 | 129 | -2.74 | .006 | .31 |
| Who can teach pronunciation          | 569 | 162 | 509 | 159 | -1.46 | .143 | .17 |

Thus, the two pre-service teacher profiles were distinguished through a combination of experience and belief dimensions. Participants in Group B were more experienced teachers than those in Group A. In fact, 6 of the 20 participants in Group B (or 30%) reported having had all four types of experience (study abroad, practice teaching, pronunciation workshop, and phonetics/phonology coursework). By contrast, the majority of the participants in Group A had no experience with studying abroad or practice teaching, meaning that experience (when present) was restricted only to pronunciation workshop and coursework. Additionally, participants in Group B articulated weaker beliefs about how pronunciation develops (i.e., whether L2 pronunciation is teachable) and about how to teach pronunciation (i.e., importance of focused teaching materials and role of feedback), compared to participants in Group A. Expressed on a scale, Group B's average belief responses for these factors were 74–104 points lower (on a 1000-point scale) than Group A's responses.

### **Speech Ratings and Pre-Service Teachers' Experience and Belief Profiles**

The second research question asked whether pre-service teachers' ratings of comprehensibility, accentedness, and fluency differ across pre-service teachers with different experience and belief profiles. To address this question, participants' assessments of comprehensibility, accentedness, and fluency were compared for the two groups of pre-service teachers using planned comparisons. As shown in Table 4, which summarizes

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

participants' speech assessments, these analyses yielded a statistically significant difference between the two groups' ratings of L2 accentedness, such that participants in Group A generally assessed L2 speakers as being less accented (i.e., assigning higher scores) than participants in Group B, with a non-trivial effect size. The two groups did not differ in their ratings of L2 speakers' comprehensibility or fluency. To summarize, participants with more experience and weaker beliefs about the teachability of L2 pronunciation and about approaches to pronunciation teaching were harsher in assessing L2 accentedness, downgrading L2 speakers in their ratings by an average of 51 points (on a 1000-point scale), compared to participants with less experience and stronger beliefs.

Table 4 *Descriptive Statistics for Speech Assessments and Results of Group Comparisons*

| Rated dimension   | Group A ( <i>n</i> = 57) |           | Group B ( <i>n</i> = 20) |           | Comparison |          |          |
|-------------------|--------------------------|-----------|--------------------------|-----------|------------|----------|----------|
|                   | <i>M</i>                 | <i>SD</i> | <i>M</i>                 | <i>SD</i> | <i>z</i>   | <i>p</i> | <i>r</i> |
| Comprehensibility | 585                      | 114       | 581                      | 119       | -0.47      | .642     | .05      |
| Accentedness      | 459                      | 108       | 408                      | 101       | -2.16      | .031     | .25      |
| Fluency           | 502                      | 109       | 488                      | 79        | -0.43      | .667     | .05      |

### Discussion

This study examined the relationship between Japanese pre-service teachers' beliefs about the teaching of L2 English pronunciation, their previous language learning and teacher training experience, and their assessments of L2 comprehensibility, accentedness, and fluency. The 77 pre-service teachers comprised two distinct profiles based on their experience and beliefs—those with relatively more and less experience who also differed in strength of their beliefs about L2 pronunciation. Importantly, compared to pre-service teachers with more experience, less experienced pre-service teachers seemed to hold stronger

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

beliefs about how pronunciation develops, namely, that learners can modify their pronunciation, that pronunciation can change over time, and that pronunciation develops as a function of experience outside language classrooms. Less experienced pre-service teachers also appeared to hold stronger beliefs about how to teach pronunciation, such that pronunciation is best learned through targeted activities and focused feedback. A novel finding was that the two experience and belief profiles were associated with distinct patterns of speech assessment for L2 accentedness. Compared to pre-service teachers with less experience and stronger beliefs, those with more experience and weaker beliefs assigned harsher (lower) scores for accentedness, revealing links between experience, beliefs, and speech assessments.

### **Teachers' Experience and Beliefs About L2 Pronunciation**

To the best of our knowledge, this study is the first to categorize pre-service L2 teachers into distinct profiles based on a combination of experience and belief variables, thus providing a nuanced view of how experiences and beliefs shape teacher cognition. The two profiles that emerged were defined by joint contributions of pre-service teachers' experience (a mixture of language learning/teaching experience and pronunciation-related instruction) and their beliefs (teachability and approaches to L2 pronunciation instruction). Compared to pre-service teachers in Group A, teachers in Group B had far more experience in studying abroad and practice teaching, with the magnitude of difference exceeding the benchmark for a large effect size; in contrast, between-group differences were negligible for pronunciation workshops and phonetics/phonology coursework (see Table 3). This implied that the key between-group difference (as captured here) pertained to pre-service teachers' language learning and teaching experience, not their pronunciation-related training. Notably, compared to pre-service teachers without experience in study abroad and practice teaching, the teachers

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

with such experience appeared to hold more skeptical views about how pronunciation develops and how to teach pronunciation, with weak-to-moderate effect sizes (see Table 3).

These findings for pre-service teachers are novel. They extend prior work focused on practicing (in-service) teachers, many of whom express confidence in the teaching of pronunciation (e.g., Buss, 2016; Nagle et al., 2018, but see Georgiou, 2018). However, the present findings contrast with those reported in Nagle et al.'s (2018) study, where (in-service) teachers who had previously engaged in pronunciation-related coursework (especially with greater content on pronunciation teaching methods) ascribed more value to pronunciation instruction, compared to teachers without such coursework. As illustrated in Table 1, in our sample of teachers, the activities covered in pronunciation-related instruction were not pedagogical but rather theoretical in nature (e.g., internalizing transcription conventions, understand articulatory or acoustic correlates of specific segmental and suprasegmental features of English). It is possible, then, that without hands-on instruction on how to teach pronunciation using various techniques, pre-service teachers would have little incentive to modify their beliefs (as shown here) and would also have difficulty translating their theoretical knowledge into practice (Burri et al., 2017). Another reason for the discrepancy in findings across the two studies could be that some early-career experiences of pre-service teachers, particularly in foreign language settings where L2 exposure is limited, might exacerbate their concerns about whether L2 pronunciation can be (easily) learned and taught.

Unlike Japanese in-service teachers (Uchida & Sugimoto, 2020), teachers in training do not have much teaching experience, beyond 2–5 weeks of mandated university-level practice teaching, and this teaching experience is likely associated for pre-service teachers with non-trivial amounts of anxiety about their speaking and teaching skills. It is therefore unsurprising that teachers in training might fall back on their personal language learning experience to formulate their beliefs about L2 pronunciation. Although studying abroad and

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

practice teaching could certainly enhance pre-service teachers' awareness of L2 pronunciation, these experiences might also emphasize its challenges, highlighting pronunciation as a highly technical skill (e.g., Müller, 2016) which might be difficult to change even after extensive immersion experiences, including study abroad (e.g., Martinsen et al., 2010). This sentiment was expressed in an informal interview with one Group B participant who stated that, despite a year-long stay in an English-speaking country, it was challenging for him to improve his L2 pronunciation, which made him doubt whether L2 pronunciation can be taught easily:

Even after going abroad for one year, I don't think I fully mastered English. In that sense, I think it is extremely difficult for Japanese people to teach Japanese people, especially teaching pronunciation. Of course, I can think positively because I understand how difficult it is to learn English as a second language, so it may be easier to teach some things. But focusing on English competence, I think although a person becomes better at speaking English after staying abroad for one year, teaching someone is still different thing and I think it's difficult. (ID 4)

In essence, focused L2 learning experiences—at least for the current sample of Japanese pre-service teachers—appear to promote at least some degree of skepticism among these teachers about the extent to which L2 pronunciation can be learned and taught. Faced with their own learning difficulty, pre-service teachers likely become less certain whether they could help their students with L2 pronunciation.

Apart from the items related to how pronunciation develops and how to teach it, there were few other differences in pre-service teachers' beliefs as a function of their experiential profile. All pre-service teachers ascribed similar value to pronunciation instruction, without strongly rejecting or endorsing its importance, which implied that they had not yet arrived at a conclusive view of pronunciation instruction. Similarly, for when to teach pronunciation

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

(see Table 2), all pre-service teachers generally disagreed with the statements that L2 pronunciation should be delayed in favor of other skills and that teachers should avoid an early focus on pronunciation in order to prevent persistent mistakes. These beliefs likely reflected pre-service teachers' awareness of the ongoing education reform, whose goal is to lower the starting age of L2 instruction and to emphasize the teaching and assessment of speaking skills (Ministry of Education, Culture, Sports, Science and Technology, 2018, 2019). Similarly, for what pronunciation features to teach, there were few differences between the two groups in their beliefs about targeting specific features of L2 pronunciation. Again, this similarity in beliefs expressed by pre-service teachers with different amounts of experience is unsurprising, given that all Japanese pre-service teachers are exposed to comparable pedagogical training and share similar experiences as future teachers and language learners in a foreign language setting. However, as shown through the items targeting who can teach pronunciation, all teachers in training expressed a strong endorsement for teachers to speak L2 English without a foreign accent, yet they also (moderately) preferred pedagogical training over lack of foreign accent when the two were compared. These partially conflicting views appear to reflect Japanese language learners' and teachers' overwhelming preference for nativelike, non-accented L2 speech as a learning and teaching goal and their belief in the value of their professional training (e.g., Tokumoto & Shibata, 2011; Uchida & Sugimoto, 2020).

### **Teachers' Profiles and L2 Pronunciation Assessments**

This study is also among the first to explore the relationship between pre-service teachers' beliefs and experience and their practice, in terms of assessments of L2 comprehensibility, accentedness, and fluency. Compared to pre-service teachers with less experience and stronger beliefs in the teachability of L2 pronunciation, those with more experience and weaker beliefs provided harsher ratings for L2 accentedness, rating L2

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

speakers as having stronger foreign accents. Although the effect size was relatively small, this finding is in line with prior work demonstrating that teachers with more extensive teaching experience show more severity in assessing pronunciation accuracy (Bøhn & Hansen, 2017; Galloway, 1980) but departs from previous research reporting teachers as being more lenient than non-teachers in their assessments (e.g., Kang, 2012; Kang & Rubin, 2009). For the current sample of pre-service teachers, it was a combination of study abroad and practice teaching that likely enabled them to be critical about L2 speech accuracy in terms of how accented they rated L2 speakers. One possibility, proposed previously (e.g., Kartchava et al., 2020), is that teachers in training, unlike practicing teachers, may generally draw more heavily on their personal language learning experience rather than on their professional experience. Similarly, compared to teachers with less extensive language learning and teacher training experience, pre-service teachers with more experience (as more proficient L2 speakers themselves) may also develop heightened sensitivity to L2 accent, which has been attested for more versus less proficient L2 learners (e.g., Eger & Reinisch, 2019). Such sensitivity might, for instance, enable pre-service teachers to more readily or clearly identify segmental and suprasegmental features of Japanese that contribute to speakers' L2 accent (Saito, 2014). Finally, in light of the association between pre-service teachers' experience and belief profiles, it is also plausible that teachers who are more skeptical about the teachability of L2 pronunciation tended to project their skepticism onto their ratings of L2 accent, notably, the very dimension of L2 speech which they themselves often aspire to master, with varying success (Tokumoto & Shibata, 2011; Uchida & Sugimoto, 2020). In short, the obtained three-way association between experience, beliefs, and L2 accentedness ratings is understandable. Pre-service teachers with more language learning and training experience were more skeptical about how easily L2 pronunciation can

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

be taught and were also more critical about L2 speakers' accent, something that they themselves might have struggled with as language learners.

It is perhaps unsurprising that pre-service teachers' experience and belief profiles were associated only with their ratings of L2 accentedness, not comprehensibility and fluency. As a speech dimension, accentedness appears to be particularly salient for Japanese teachers and learners (e.g., Tokumoto & Shibata, 2011; Uchida & Sugimoto, 2020), including pre-service teachers in this study who believed that anyone teaching pronunciation should have a natively-like accent. On the one hand, the distinction obtained for L2 speech ratings, with only accentedness linked to teachers' experience and belief profiles, lends support to the notion that pre-service teachers' understanding of the dimensions of L2 comprehensibility and fluency is generally unaffected by their personal or teaching experience. Because both listeners and speakers in this study shared the same language background, none of the pre-service teachers likely experienced much difficulty with comprehension of L2 speech or faced challenges with possible fluency issues, benefitting from a shared listener–speaker linguistic background in rating comprehensibility (Foote & Trofimovich, 2018) and fluency (Rossiter, 2009). On the other hand, it is also plausible that pre-service teachers had not yet developed clear-cut beliefs about L2 comprehensibility and fluency, with the consequence that these beliefs had little impact on their practice, in terms of their assessments of L2 comprehensibility and fluency. As shown in Table 2, pre-service teachers did not consider it a particularly high priority to target pronunciation issues that interfere with communication and were likely unaware that at least some of these issues are relevant to L2 comprehensibility and fluency. Instead, pre-service teachers expressed strong support for the importance of natively-like accent for teachers. Thus, it is not unreasonable to assume that strong opinions about the value of comprehensible and fluent L2 speech are not yet part of these pre-service teachers' belief system. The development of such beliefs is possible but

might require extensive and intensive experience, as shown by Saito et al. (2019) for the development of listeners' awareness of comprehensible L2 speech, and might need targeted instruction as part of teacher training programs.

### **Limitations and Future Work**

Although suggestive, the current findings must be revisited in future research, with the view of addressing some of this study's limitations. First, questionnaire items targeting participants' linguistic and teaching experience, no matter how detailed, ultimately fall short of revealing the complexity of their experiential profiles. Therefore, future work should rely on insights from participant interviews or think-aloud protocols while assessing L2 speech to determine how participants' experience and beliefs may affect their speech assessments. Second, teachers' beliefs may change over time, as teachers not only accumulate new experiences but more importantly intensify, deepen, and refine their experiential profiles (e.g., Burri et al., 2017). In this sense, as pointed out by an anonymous reviewer, our decision to capture pre-service teachers' experience as a dichotomous variable (presence vs. absence of a given experience) is certainly a limitation. Thus, in future research, it would be important to capture various, finer-grained characteristics of teacher experience (e.g., through interviews or reflective journals) so that these more detailed experiential profiles can be related to teachers' beliefs and practices. Third, future studies should target larger groups of participants to increase the power of analyses. To recruit participants for this study, all eligible pre-service teachers in several regions in Japan were contacted, and only a fraction of these individuals responded to the call for participation. Because the online procedure required about 1 hour of participants' time, researchers should make use of shorter and more focused questionnaires so as not to impose heavy demands on already busy pre-service teachers' schedules. Although matching listeners and speakers in terms of language background was valid for the context of Japan, where most teachers and learners share a

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

native language, future investigations of teachers' beliefs, experience, and speech assessments should manipulate shared versus non-shared listener–speaker background as a variable, both in Japan and in other foreign and second language contexts.

### **Conclusion**

By way of summary, the findings of this study suggest that Japanese pre-service teachers' experience and beliefs together were associated with these teachers' ratings of L2 accentedness. There were two distinct teacher profiles, characterized by pre-service teachers' experience (a combination of study abroad and practice teaching) and their beliefs (regarding how pronunciation develops and how to teach pronunciation). The findings suggested potentially negative effects of teachers' language learning and teacher training experience, such that teachers with more experience were more skeptical about how easily L2 pronunciation can be learned and taught and were also more critical of L2 speakers' accent.

These results highlight the crucial role of pre-service teachers' experience—both as language learners and as future teachers—in shaping their beliefs and practices. In some cases, teaching and learning experiences faced by pre-service teachers during their studies appear to exacerbate their concerns about the teachability of L2 pronunciation. In other cases, however, pre-service teachers' teaching and learning experiences appear unrelated to their beliefs, implying that other concerns (e.g., the need for teachers to speak the L2 natively, without a foreign accent) might be deeply rooted (Tokumoto & Shibata, 2011) and might be difficult to shift (Holt-Reynolds, 1992). While at least some of these concerns might get dispelled over time, as teachers accrue teaching experience and develop teaching confidence, it might be necessary to target these beliefs directly, as part of language pedagogy courses in teacher training programs.

With the view of the future, it would be essential for teacher educators to encourage future teachers to hold positive views about the teachability of L2 pronunciation by shifting

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

their attention away from L2 accent and toward communicatively oriented dimensions of L2 speech, including L2 intelligibility and comprehensibility (Derwing & Munro, 2015; Levis, 2005), and by providing teachers with pedagogical skills to target these dimensions. To address these goals in teacher training, teacher educators can use a sizeable knowledge base accumulated by researchers about how L2 pronunciation is learned and assessed (see Saito & Plonsky, 2019). The current findings are particularly relevant to other contexts where teachers (and members of the general public) may be oriented towards attaining nativelike pronunciation models but where L2 exposure outside the classroom is limited. Comparisons of findings across several teacher training contexts might further shed light on how pre-service teachers' experience and beliefs jointly shape their L2 assessment practice.

### **Acknowledgements and Open Materials Statement**

We are grateful to university instructors including Takumi Aoyama, Makoto Hotta, Kiwamu Kasahara, Wataru Suzuki, Yoshiki Yokoyama and Ryuichi Yorozuya who helped us recruit participants, to pre-service teachers who participated in this research, to Charles Nagle, Tracey Derwing, Yoko Uchida, and Larissa Buss who kindly shared their research instruments with us, to Shungo Suzuki and Ross Sundberg who helped us develop materials, and to the anonymous reviewers and the journal editors for their insightful comments and suggestions. An earlier version of this work was presented at the 2019 Pronunciation in Second Language Learning and Teaching (PSLLT) conference. This research was supported by grants from the Social Sciences and Humanities Research Council of Canada (SSHRC) to Pavel Trofimovich (435-2016-1406) and Sara Kennedy (430-2016-0441). All materials from this study are publicly accessible through the IRIS digital repository at <http://www.iris-database.org>.

## References

- Baker, A. (2014). Exploring teachers' knowledge of second language pronunciation techniques: Teacher cognitions, observed classroom practices, and student perceptions. *TESOL Quarterly*, *48*, 136–163. <http://doi.org/10.1002/tesq.99>
- Borg, S. (2003). Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do. *Language Teaching*, *36*, 81–109. <http://doi.org/10.1017/S0261444803001903>
- Borg, S., & Alshumaimeri, Y. (2019). Language learner autonomy in a tertiary context: Teachers' beliefs and practices. *Language Teaching Research*, *23*, 9–38. <http://doi.org/10.1177/1362168817725759>
- Breitkreutz, J., Derwing, T. M., & Rossiter, M. J. (2001). Pronunciation teaching practices in Canada. *TESL Canada Journal*, *19*, 51–61. <http://doi.org/10.18806/tesl.v19i1.919>
- Burri, M., Baker, A., & Chen, H. (2017). “I feel like having a nervous breakdown.” Pre-service and in-service teachers' developing beliefs and knowledge about pronunciation instruction. *Journal of Second Language Pronunciation*, *3*, 109–135. <http://doi.org/10.1075/jslp.3.1.05bur>
- Buss, L. (2016). Beliefs and practices of Brazilian EFL teachers regarding pronunciation. *Language Teaching Research*, *20*, 619–637. <https://doi.org/10.1177/1362168815574145>
- Bøhn, H., & Hansen, T. (2017). Assessing pronunciation in an EFL context: Teachers' orientations towards nativeness and intelligibility. *Language Assessment Quarterly*, *14*, 54–68. <http://doi.org/10.1080/15434303.2016.1256407>
- Derwing, T. M., & Munro, M. J. (2015). *Pronunciation Fundamentals: Evidence-based perspectives for L2 teaching and research*. John Benjamins.

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- Derwing, T. M., Rossiter, M. J., Munro, M. J., & Thomson, R. I. (2004). Second language fluency: Judgments on different tasks. *Language Learning, 54*, 655–679.  
<http://doi.org/10.1111/j.1467-9922.2004.00282.x>
- Eger, N. A., & Reinisch, E. (2019). The role of acoustic cues and listener proficiency in the perception of accent in nonnative sounds. *Studies in Second Language Acquisition, 41*, 179–200. <https://doi.org/10.1017/S0272263117000377>
- Fayer, J. M., & Krasinski, E. (1987). Native and nonnative judgments of intelligibility and irritation. *Language Learning, 37*, 313–326. <http://doi.org/10.1111/j.1467-1770.1987.tb00573.x>
- Foote, J. A., Holtby, A. K., & Derwing, T. M. (2011). Survey of the teaching of pronunciation in adult ESL programs in Canada, 2010. *TESL Canada Journal, 29*, 1–22. <http://doi.org/10.18806/tesl.v29i1.1086>
- Foote, J. A., & Trofimovich, P. (2018). Is it because of my language background? A study of language background influence on comprehensibility judgments. *The Canadian Modern Language Review, 74*, 253–278. <https://doi.org/10.3138/cmlr.2017-0011>
- Galloway, V. B. (1980). Perceptions of the communicative efforts of American students of Spanish. *The Modern Language Journal, 64*, 428–433. <https://doi.org/10.2307/325864>
- Georgiou, G. P. (2018). EFL teachers' cognitions about pronunciation in Cyprus. *Journal of Multilingual and Multicultural Development, 40*, 538–550.  
<http://doi.org/10.1080/01434632.2018.1539090>
- Harding, L. (2012). Accent, listening assessment and the potential for a shared-L1 advantage: A DIF perspective. *Language Testing, 29*, 163–180.  
<http://doi.org/10.1177/0265532211421161>
- Henderson, A., Frost, D., Tergujeff, E., Kautzsch, A., Murphy, D., Kirkova-Naskova, A., Waniek-Klimczak, E., Levey, D., Cunningham, U., & Curnick, L. (2012). The English

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- pronunciation teaching in Europe survey: Selected results. *Research in Language*, 10, 5–27. <http://doi.org/10.2478/v10015-011-0047-4>
- Holt-Reynolds, D. (1992). Personal history-based beliefs as relevant prior knowledge in course work. *American Educational Research Journal*, 29, 325–249. <https://doi.org/10.3102/00028312029002325>
- Huang, B. H. (2013). The effects of accent familiarity and language teaching experience on raters' judgments of non-native speech. *System*, 41, 770–785. <http://doi.org/10.1016/j.system.2013.07.009>
- Huensch, A. (2019a). Pronunciation in foreign language classrooms: Instructors' training, classroom practices, and beliefs. *Language Teaching Research*, 23, 745–764. <http://doi.org/10.1177/1362168818767182>
- Huensch, A. (2019b). The pronunciation teaching practices of university-level graduate teaching assistants of French and Spanish introductory language courses. *Foreign Language Annals*, 52, 13–31. <http://doi.org/10.1111/flan.12372>
- Isaacs, T., & Thomson, R. I. (2013). Rater experience, rating scale length, and judgments of L2 pronunciation: Revisiting research conventions. *Language Assessment Quarterly*, 10, 135–159. <http://doi.org/10.1080/15434303.2013.769545>
- Jakeman, V., & McDowell, C. (2008). *New insight into IELTS: Student's book with answers*. Cambridge University Press.
- Kamiya, N. (2016). What effect does reading academic articles on oral corrective feedback have on ESL teachers? *TESOL Journal*, 7, 328–349. <http://doi.org/10.1002/tesj.210>
- Kang, O. (2012). Impact of rater characteristics and prosodic features of speaker accentedness on ratings of international teaching assistants' oral performance. *Language Assessment Quarterly*, 9, 249–269. <http://doi.org/10.1080/15434303.2011.642631>

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- Kang, O., & Rubin, D. L. (2009). Reverse linguistic stereotyping: Measuring the effect of listener expectations on speech evaluation. *Journal of Language and Social Psychology, 28*, 441–456. <http://doi.org/10.1177/0261927x09341950>
- Kang, O., Moran, M., Ahn, H., & Park, S. (2020). Proficiency as a mediating variable of intelligibility for different varieties of accents. *Studies in Second Language Acquisition, 42*, 471–487. <http://doi.org/10.1017/S0272263119000536>
- Kartchava, E., Gatbonton, E., Ammar, A., & Trofimovich, P. (2020). Oral corrective feedback: Pre-service English as a second language teachers' beliefs and practices. *Language Teaching Research, 247*, 220–249. <http://doi.org/10.1177/1362168818787546>
- Kuzborska, I. (2011). Links between teachers' beliefs and practices and research on reading. *Reading in a Foreign Language, 23*, 102–128.
- Larson-Hall, J. (2009). *A guide to doing statistics in second language research using SPSS*. Routledge.
- Lee, I. (2010). Writing teacher education and teacher learning: Testimonies of four EFL teachers. *Journal of Second Language Writing, 19*, 143–157. <http://doi.org/10.1016/j.jslw.2010.05.001>
- Levis, J. M. (2005). Changing contexts and shifting paradigms in pronunciation teaching. *TESOL Quarterly, 39*, 369–377. <http://doi.org/10.2307/3588485>
- MacDonald, S. (2002). Pronunciation-views and practices of reluctant teachers. *Prospect, 17*, 3–18.
- Martinsen, R.A., Baker, W., Dewey, D.P., Bown, J., & Johnson, C. (2010). Exploring diverse settings for language acquisition and use: Comparing study abroad, service learning abroad, and foreign language housing. *Applied Language Learning, 20*, 40–69.

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- Ministry of Education, Culture, Sports, Science and Technology. (2017, April 1). Kyoiku shokuin menkyoho shiko kisoku [Regulation of the enforcement of teacher's certificate act]. MEXT. [https://elaws.e-gov.go.jp/search/elawsSearch/elaws\\_search/lsg0500/detail?lawId=329M50000080026\\_20161001\\_0000000000000000&openerCode=1](https://elaws.e-gov.go.jp/search/elawsSearch/elaws_search/lsg0500/detail?lawId=329M50000080026_20161001_0000000000000000&openerCode=1)
- Ministry of Education, Culture, Sports, Science and Technology. (2018, July). Shougakko gakushu sidou youryo (Heisei 29 nen kokuji) kaisetsu gaikokugo katsudo gaikokugohen [A commentary on the government curriculum guidelines of elementary schools: Foreign language activities/foreign languages]. MEXT. [http://www.mext.go.jp/component/a\\_menu/education/micro\\_detail/\\_\\_icsFiles/afieldfile/2019/03/18/1387017\\_011.pdf](http://www.mext.go.jp/component/a_menu/education/micro_detail/__icsFiles/afieldfile/2019/03/18/1387017_011.pdf)
- Ministry of Education, Culture, Sports, Science and Technology. (2019, October) Kodai setsuzoku kaikaku [Reformulation for connecting secondary and higher education]. MEXT. [http://www.mext.go.jp/a\\_menu/koutou/koudai/detail/1420229.htm](http://www.mext.go.jp/a_menu/koutou/koudai/detail/1420229.htm)
- Müller, M. (2016). Listening to learners' voices: Qualitative aspects of pronunciation learning during study abroad. *Journal of Second Language Pronunciation*, 2, 108–142. <http://doi.org/10.1075/jslp.2.1.05mul>
- Murphy, J. M. (2014). Intelligible, comprehensible, non-native models in ESL/EFL pronunciation teaching. *System*, 42, 258–269. <http://doi.org/10.1016/j.system.2013.12.007>
- Nagle, C. (2019). Developing and validating a methodology for crowdsourcing L2 speech ratings in Amazon Mechanical Turk. *Journal of Second Language Pronunciation*, 5, 294–323. <http://doi.org/10.1075/jslp.18016.nag>

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- Nagle, C., Sachs, R., & Zárata-Sández, G. Z. (2018). Exploring the intersection between teachers' beliefs and research findings in pronunciation instruction. *The Modern Language Journal, 102*, 512–532. <http://doi.org/10.1111/modl.12493>
- Nishimuro, M., & Borg, S. (2013). Teacher cognition and grammar teaching in a Japanese high school. *JALT Journal, 35*, 29–50.
- Nishino, T. (2012). Modeling teacher beliefs and practices in context: A multimethods approach. *The Modern Language Journal, 96*, 380–399. <https://doi.org/10.1111/j.1540-4781.2012.01364.x>
- Peacock, M. (2001). Pre-service ESL teachers' beliefs about second language learning: A longitudinal study. *System, 29*, 177–195. [https://doi.org/10.1016/S0346-251X\(01\)00010-0](https://doi.org/10.1016/S0346-251X(01)00010-0)
- Polat, N. (2009). Matches in beliefs between teachers and students, and success in L2 attainment: The Georgian example. *Foreign Language Annals, 42*, 229–249. <http://doi.org/10.1111/j.1944-9720.2009.01019.x>
- Plonsky, L., & Oswald, F. L. (2014). How big is “big”? Interpreting effect sizes in L2 research. *Language Learning, 64*, 878–912. <https://doi.org/10.1111/lang.12079>
- Rossiter, M. J. (2009). Perceptions of L2 fluency by native and non-native speakers of English. *The Canadian Modern Language, 65*, 395–412. <https://doi.org/10.3138/cmlr.65.3.395>
- Saito, K. (2014). Experienced teachers' perspectives on priorities for improved intelligible pronunciation: The case of Japanese learners of English. *International Journal of Applied Linguistics, 24*, 250–277. <http://doi.org/10.1111/ijal.12026>
- Saito, K., & Plonsky, L. (2019). Effects of second language pronunciation teaching revisited: A proposed measurement framework and meta-analysis. *Language Learning, 69*, 652–708. <http://doi.org/10.1111/lang.12345>

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- Saito, K., Tran, M., Suzukida, Y., Sun, H., Magne, V., & Ilkan, M. (2019). How do L2 listeners perceive the comprehensibility of foreign-accented speech? Roles of L1 profiles, L2 proficiency, age, experience, familiarity and metacognition. *Studies in Second Language Acquisition*, *41*, 1133–1149.  
<https://doi.org/10.1017/S0272263119000226>
- Saito, K., Trofimovich, P., & Isaacs, T. (2016). Second language speech production: Investigating linguistic correlates of comprehensibility and accentedness for learners at different ability levels. *Applied Psycholinguistics*, *37*, 217–240.  
<http://doi.org/10.1017/s0142716414000502>
- Staples, S., & Biber, D. (2015). Cluster analysis. In L. Plonsky, (Ed.), *Advancing quantitative methods in second language research* (pp. 243–274). Routledge.
- Tokumoto, M., & Shibata, M. (2011). Asian varieties of English: Attitudes towards pronunciation. *World Englishes*, *30*, 392–408. <http://doi.org/10.1111/j.1467-971x.2011.01710.x>
- Tsunemoto, A., & Isaacs, T. (2020). *Task effects in native teachers' judgments and Japanese speakers' self-assessments of their English pronunciation*. Manuscript in Preparation.
- Uchida, Y., & Sugimoto, J. (2018). A survey of pronunciation instruction by Japanese teachers of English: Phonetic knowledge and teaching practice. *Journal of the Tokyo University of Marine Science and Technology*, *14*, 65–75.
- Uchida, Y., & Sugimoto, J. (2020). Non-native English teachers' confidence in their own pronunciation and attitudes towards teaching: A questionnaire survey in Japan. *International Journal of Applied Linguistics*, *30*, 19–34.  
<http://doi.org/10.1111/ijal.12253>

## TEACHER BELIEFS, EXPERIENCE, AND L2 SPEECH RATINGS

- Wach, A., & Monroy, F. (2019). Beliefs about L1 use in teaching English: A comparative study of Polish and Spanish teacher-trainees. *Language Teaching Research*. Advance Online Publication. <http://doi.org/10.1177/1362168819830422>
- Winke, P., Gass, S., & Myford, C. (2013). Raters' L2 background as a potential source of bias in rating oral performance. *Language Testing*, 30, 231–252.  
<http://doi.org/10.1177/0265532212456968>
- Yamamori, K., Isoda, T., Hiromori, T., & Oxford, R. L. (2003). Using cluster analysis to uncover L2 learner differences in strategy use, will to learn, and achievement over time. *International Review of Applied Linguistics in Language Teaching*, 41, 381–409.  
<http://doi.org/10.1515/iral.2003.017>