

**Pre- and In-Service Teachers' Beliefs About Second Language Pronunciation Teaching,
Their Experience, and Speech Assessments**

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This study investigated whether and to what degree individual differences in teachers' experience and beliefs are associated with their judgements of second language (L2) speech. Participants included 50 in-service and 50 pre-service teachers who rated 40 audio-recorded speaking performances by Japanese secondary school students, evaluating these students' L2 English comprehensibility, fluency, and accentedness. The teachers also completed online questionnaires targeting their beliefs about L2 pronunciation instruction and recorded their professional and personal experiences related to language teaching and learning. Compared to pre-service teachers, in-service teachers appeared to hold stronger beliefs about L2 pronunciation instruction. Notably, in-service teachers' comprehensibility and fluency ratings were predicted only by their beliefs (importance of pronunciation, who can teach pronunciation), whereas pre-service teachers' accentedness ratings were predicted by a combination of variables, including their beliefs (how to teach pronunciation) and experience (living abroad). These findings demonstrate possible links between teachers' assessment practices and their professional experiences and beliefs relevant to L2 pronunciation instruction.

Keywords: accent, assessment, beliefs, comprehensibility, English as Foreign Language, fluency, in-service teachers, Japanese, pre-service teachers, pronunciation

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Despite being an important component of successful second language (L2) communication, pronunciation has often received little emphasis in language classrooms (Isaacs, 2009) and teacher training programs (Baker & Murphy, 2011). One reason that hinders the integration of pronunciation into classroom teaching includes teachers' beliefs about whether and how pronunciation should be taught. These beliefs are collectively referred to under the broader term of teacher cognition, defined as "what teachers know, believe, and think" (Borg, 2003, p. 81). Prior research focusing on pronunciation has uncovered several links between teachers' beliefs and their teaching practices (e.g., Burri, Chen, & Baker, 2017), such that teachers with more experience in pronunciation pedagogy, compared to those with less experience, express stronger beliefs about the importance of teaching pronunciation (Uchida & Sugimoto, 2020), feel more confident in using their knowledge and skills in pronunciation teaching (Nagle et al., 2020), and spend more time addressing pronunciation issues in classrooms (Huensch, 2019).

In addition to instruction, assessment is also an important component of student learning because teachers use assessment to provide students with feedback and create activities for students to develop the skills that they need (McMillan, 2003). However, to the best of our knowledge, little is known about the potential role of teachers' beliefs in their assessment of L2 pronunciation. For example, teachers who consider nativelylike pronunciation to be the ultimate goal of L2 learning might focus on so-called natiyelikeness in their evaluation criteria and might be particularly harsh at judging students' accented L2 pronunciation. Therefore, the goal of this study was to investigate whether and how teachers' beliefs about L2 pronunciation are associated with their assessment of L2 pronunciation for teachers who differ in their language training and

experience. In an initial study exploring this issue, Tsunemoto et al. (2023) examined pre-service teachers' experience and beliefs relevant to L2 pronunciation assessment. The present study extends this work by comparing pre-service and in-service teachers to investigate whether and how individual differences in teachers' experience and beliefs are relevant to their L2 speech assessment practice.

1. Literature Review

Teachers' beliefs about L2 pronunciation likely develop through diverse experiences, including their participation in teacher training programs (Burri, Chen, & Baker, 2017; Nagle et al., 2020), their L2 teaching practice (Huensch, 2019), and their own language learning history, such as prior experience studying abroad (Uchida & Sugimoto, 2020). For instance, Nagle et al. (2018) surveyed 100 teachers of L2 Spanish in the United States, examining their beliefs about L2 Spanish pronunciation instruction. Teachers who had completed coursework with a stronger emphasis 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, suggesting a possible link between teachers' experience in teacher training programs and their beliefs about L2 pronunciation instruction.

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. However, prior teaching experience and background in phonetics were not associated with teachers' beliefs. Thus, teachers may gain confidence in their own pronunciation and develop stronger beliefs

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about the effectiveness of pronunciation instruction not only through focused training but also through personal histories, such as residence abroad and using the target language for communication.

Pre-service teachers often hold strong, established beliefs about L2 learning and teaching based on their previous L2 learning experience, and such beliefs are often resistant to change, even after years of classroom teaching experience (Peacock, 2001). For instance, teachers who report having negative experiences in their own language learning (Nespor, 1987), such as when taking language classes or studying abroad (Youngs & Youngs, 2001), may continue to hold fixed beliefs about language teaching throughout their careers (Borg, 2003, 2018; Holt-Reynolds, 1992). However, teacher cognition can also evolve over time (Wyatt & Borg, 2011), such that in-service teachers may develop new or refine existing beliefs about language teaching. For instance, after 20 years of teaching English focusing on form (i.e., lexis and grammar), a teacher who had participated in a teacher training program abroad decided to focus more on content, as a reflection of his enhanced awareness of the importance of language for communication (Kurihara & Samimy, 2007).

When it comes to L2 pronunciation teaching, teachers' pedagogical experience might be particularly predictive of changes in their beliefs and practices. For instance, to explore how teachers' professional experience is related to teacher cognition, Burri, Baker, and Chen (2017) compared pre- versus in-service teachers' beliefs during a one-semester pronunciation-focused course. Although both pre- and in-service teachers held similar beliefs about preferred pronunciation teaching techniques (e.g., controlled activities), pre-service teachers continued to show uncertainty and lack of confidence in teaching pronunciation, compared to in-service teachers who gained greater self-efficacy after taking the course. That is, in-service teachers may

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be better at linking newly learned knowledge to their prior teaching experience and at understanding how they can integrate their knowledge and beliefs into practice (Basturkmen, 2012).

Teachers' experience and cognition can influence not only their teaching but also their assessment practices. For instance, Yin (2010) interviewed two experienced teachers of English about how they implement formative assessment in their classrooms. When assessing L2 oral performance, these teachers appeared to problematize their students' segmental errors based on their past experience teaching other L2 speakers. Focusing on the relationship between teaching experience and speech assessment, 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. For these teachers, more extensive teaching experience was associated with increased concern for pronunciation accuracy. Nevertheless, it remains unclear which types of experiences, besides teachers' pedagogical practice, and which teacher beliefs might be associated with their assessment of L2 pronunciation.

To address the issue, Tsunemoto et al. (2023) explored associations between teachers' experience and beliefs and their assessment of L2 speech in a sample of 77 Japanese pre-service teachers of English. These teachers completed an online questionnaire examining their beliefs about the teaching of English pronunciation and eliciting details about their L2 teaching and learning history (e.g., studying abroad, teaching experience, pronunciation-related coursework). Additionally, the teachers assessed 40 Japanese secondary school students performing an extemporaneous speaking task, rating these speakers for comprehensibility (ease of

understanding), accentedness (proximity to a first-language speaker variety), and fluency (utterance flow). The teachers' assessments appeared to reflect two distinct profiles (more vs. less experienced pre-service teachers), defined by joint contributions of their experience (a mixture of language teaching and study abroad experience) and their beliefs (regarding the teachability of L2 pronunciation and approaches to its teaching). Compared to pre-service teachers with less experience, those with more experience appeared to be more skeptical about how (easily) L2 pronunciation can be learned and taught and also provided harsher accentedness ratings, revealing potential links between experience, beliefs, and speech assessments.

2. The Current Study

As discussed previously, teachers' beliefs have their origins in their experience, either through linguistic exposure or coursework (Huensch, 2019; Nagle et al., 2018, 2020; Uchida & Sugimoto, 2020), and teachers' beliefs inform their L2 pronunciation teaching (Burri, Chen, & Baker, 2017; Nagle et al., 2018) and assessment (Tsunemoto et al., 2023). With respect to assessment, more experienced pre-service teachers (those with study-abroad and teaching experience) showed greater uncertainty about the teachability of pronunciation and provided more severe accentedness ratings, compared to teachers with less experience (Tsunemoto et al., 2023). However, those teachers' pedagogical experience was overall brief (2–5 weeks), which limits the degree to which these findings describe instructors with a more substantial professional track record. In fact, with respect to teachers' experience, previous research has either targeted only in-service teachers (e.g., Huensch, 2019; Uchida & Sugimoto, 2020) or only pre-service teachers (e.g., Tsunemoto et al., 2023), such that there is presently little knowledge about whether pre- and in-service teachers hold different beliefs about L2 pronunciation instruction (for a rare exception, see Burri, Baker, & Chen, 2017, discussed previously) and whether they

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assess L2 pronunciation differently. Therefore, what remains to be explored is how teachers' beliefs compare across cohorts of teachers who vary in L2 teaching experience, particularly when these cohorts are recruited from the same context.

Teacher beliefs may have tangible consequences for learning because they inform pronunciation assessment (Bøhn & Hansen, 2017; Tsunemoto et al., 2023), which determines the instruction and feedback given to students (McMillan, 2003) and impacts student motivation (Brookhart & Durkin, 2003). For instance, if a teacher believes that achieving nativelike pronunciation is important, the teacher might penalize accented L2 pronunciation and provide harsher ratings, compared to another teacher who prioritizes comprehensibility, which is presumably a more important dimension for successful L2 communication (Derwing & Munro, 2015). In addition, if teachers' assessments vary as a function of their beliefs and experience, students may miss opportunities to receive adequate feedback for their strengths and weaknesses or might feel discouraged if their pronunciation is deemed unsatisfactory in light of whichever standard the teacher has in mind. Indeed, it is still largely unknown how teachers' professional and personal experiences and beliefs inform their L2 pronunciation assessment.

The goal of this study was therefore to investigate the degree to which Japanese pre-service teachers differ from in-service teachers in terms of their beliefs about teaching L2 English pronunciation and their previous language learning and teaching experience. In addition, this study aimed to examine whether individual differences in teachers' beliefs and experience profiles predict their judgements of comprehensibility, accentedness, and fluency as key global dimensions of L2 speaking performance. Comprehensibility refers to a listener's perception of how easy it is to understand L2 speech. Accentedness captures a listener's judgment of how close the speaker's pronunciation is to a variety spoken by first-language speakers (Munro &

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Derwing, 1995). Fluency denotes a listener's perception of how smoothly (i.e., without excessive pauses or hesitations) L2 speech is produced (Derwing et al., 2004). Although researchers have actively promoted comprehensible and fluent speech as a primary goal of L2 teaching and learning, on the assumption that these dimensions are critical to L2 speakers' success in oral communication (Derwing & Munro, 2015), many L2 speakers and their teachers, especially those in foreign language settings, nevertheless aspire to attain natively-like, non-accented pronunciation (Tokumoto & Shibata, 2011; Uchida & Sugimoto, 2020). Therefore, comprehensibility, accentedness, and fluency together illustrate key aspects of L2 speakers' pronunciation performance that are also relevant to teachers.

Examining the relationship between teachers' experience, beliefs, and assessment is particularly important in contexts like Japan, where L2 exposure is limited outside the classroom. In such settings, individual teachers with their specific beliefs and experience profiles could determine the quality of L2 pronunciation teaching and assessment. In fact, with L2 English instruction recently introduced in primary schools and with English oral proficiency testing included in entrance exams across several jurisdictions (e.g., Tokyo Metropolitan Board of Education, n.d.), teachers are facing increased pressures to teach and assess L2 English speaking skills. However, to obtain a teaching licence, teachers are currently not obligated to complete phonology or phonetics as compulsory subjects, and teachers often lack training in pronunciation pedagogy (Uchida & Sugimoto, 2018). Against this backdrop, a comparison of pre-service and in-service teachers might offer critical insights into how their beliefs and experience profiles are related to their assessment practice, with consequences for enhancing the quality of teacher training in Japan and in other similar contexts. The following research questions guided this study:

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1. To what extent do Japanese in-service teachers of English differ from pre-service teachers in their experience and beliefs about L2 pronunciation?
2. To what extent do Japanese in-service teachers differ from pre-service teachers in their ratings of secondary school students' English comprehensibility, fluency, and accentedness?
3. Do teachers' beliefs about teaching L2 pronunciation and their experience predict their assessment of comprehensibility, fluency, and accentedness?

3. Method

3.1. Teachers

Participants included 100 Japanese teachers of L2 English, all first-language speakers of Japanese and all residents of Japan at the time of the study. Half of the teachers were in-service teachers recruited specifically for this study; the other half were drawn randomly from the pool of 77 pre-service teachers participating in a previous project (Tsunemoto et al., 2023) to enable direct comparisons between in-service and pre-service teachers. All teachers were recruited through pre-existing social media groups, email lists, or snowball sampling using the first author's contacts. The in-service teachers were teaching English at six junior high schools (7), nine junior-senior high schools (12), and 11 senior high schools (12), with the remaining employed at 16 universities (19). The majority of pre-service teachers were pursuing a teacher-training program at six universities and were relatively evenly distributed across Year 1 (10), Year 2 (11), Year 3 (11), and Year 4 (16) of each program, while two teachers were enrolled in a MA-level teaching program at one university. All but three had taken a standardized English exam (e.g., EIKEN, IELTS, TOEFL, TOEIC), reporting L2 English scores at A1 (2), A2 (6), B1 (28), B2 (26), and C1 (35) levels of the Common European Framework of Reference (CEFR),

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where A indicates “basic user,” B indicates “independent user,” and C indicates “proficient user” according to the Ministry of Education, Culture, Sports, Science, and Technology guidelines (Ministry of Education, Culture, Sports, Science and Technology, 2019). The teachers had started learning English at a mean age of 10.14 ($SD = 3.31$). The teachers' background characteristics are summarized in Table 1.

Table 1. *Descriptive Statistics (Mean, Range) for Teachers' Background Variables*

Variable	In-service ($n = 50$)	Pre-service ($n = 50$)	All ($n = 100$)
Age (years)	36.8 (23–69)	20.4 (18–25)	28.6 (18–69)
Gender (f/m)	17/33	29/21	46/54
Age of English learning (years)	10.6 (2–13)	9.7 (1–15)	10.1 (1–15)
Teaching English (years)	10.8 (1–40)	0.3 (2–5 weeks)	5.6 (0–40)

Approximately half of the teachers ($n = 53$) reported having prior experience of living abroad for a mean of 15.57 months ($SD = 32.95$), predominantly in English-speaking countries including the United States (34), the United Kingdom (17), Canada (13), Australia (12), Singapore (3), New Zealand (2), and Hong Kong (1), with 20 teachers residing in more than two countries. In terms of teaching experience, in-service teachers had varying experience of teaching English ($M = 10.83$ years, $SD = 8.56$) at junior high schools (13), junior-senior high schools (7), senior high schools (21), vocational schools (3), and universities (17). In addition to teaching English in regular schools, some in-service teachers also had experience teaching English at cram schools (5), conversational schools (5), or private language schools (1). In contrast, pre-service teachers' teaching experience was generally limited to their practicum teaching (2–5 weeks) completed as part of their teacher training programs, although several pre-

service teachers had experience teaching English at cram schools (7) or as private language tutors (4).

3.2. 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). Participants also indicated whether their experience involved English teaching, pronunciation-specific training opportunities, or linguistic coursework (including phonetics and phonology), 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, and then translated into Japanese (Tsunemoto et al., 2023). The 15 items collectively focus on the importance of pronunciation teaching, its timing and effectiveness, teachers' pedagogical goals, and approaches to addressing pronunciation issues. As part of a larger project, teachers answered eight additional questions (not discussed here) about their L2 pronunciation teaching goals (Foote et al., 2011), ideal L2 pronunciation teaching models (Henderson et al., 2012), and self-estimated preparedness for teaching specific pronunciation features (Buss, 2016).

Short audios by 40 Japanese secondary school students ($M_{age} = 16.13$ years, $range = 16-17$) recorded as part of an earlier study (Tsunemoto, 2017) were used for the speech rating task.

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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 students familiar with standardized exams. The 40 speakers represented a range of L2 speaking skills, as estimated through 9-point scalar ratings of comprehensibility ($M = 4.81$, $range = 2.67-7.33$) and accentedness ($M = 3.95$, $range = 2.00-6.83$) by raters from the United Kingdom (4 males, 2 females) in the earlier study. Although the recordings were approximately one minute in duration ($M = 65.66$ seconds, $range = 37.89-159.57$), only the first 30 seconds from each audio were used for rating, which is consistent with common practice in L2 speech research (Derwing & Munro, 2015).

3.3. Procedure

All data collection took place online through LimeSurvey (<https://www.limesurvey.org>). At the beginning of the survey, participants read the consent form, and those who agreed to participate completed the questions targeting their language background and experience, followed by statements focusing on teacher beliefs. Each of the 15 belief statements, organized in two online pages and presented in unique random order, was accompanied by a 1,000-point sliding scale eliciting participants' agreement with each statement. Although Nagle et al.'s (2018) original questionnaire was accompanied by a 6-point Likert scale, in this study, we used a 1,000-point continuous sliding scale to make direct comparisons between the beliefs items and L2 speech ratings evaluated through the same sliding scale (Tsunemoto et al., 2023). The scale contained no numerical markings, but the endpoints were clearly labeled (*strongly disagree*—*strongly agree*), and the initial slider position was always in the middle of the scale (corresponding to the rating of 500). After completing the beliefs questions, participants

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provided their speech ratings and answered several short debrief items about their rating experience. For speech ratings, they first read the descriptions of the three target dimensions (comprehensibility, accentedness, fluency) and then practiced assigning the ratings using three unrelated practice recordings. The 40 target audios, which were presented in random order, 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., 2017). The scales did not contain numerical markings (to capture impressionistic judgments of speech), but the endpoints were clearly labelled with a frowning face (on the left) and a smiling face (on the right) to cue scale directionality (Tsunemoto et al., 2023). The initial slider position was always in the middle (corresponding to the rating of 500). Participants were asked to listen to the entire file, and only one listening per file was allowed (see Appendix B for a screenshot of the rating interface).

Participants completed the entire survey on average within 65 minutes, which was considered reasonable based on pilot testing (Tsunemoto et al., 2023). After the initial screening of survey data, eight pre-service teachers from the previous study (Tsunemoto et al., 2023) and 10 in-service teachers from the present dataset were invited to voluntarily attend a one-hour semi-structured interview with the researcher (in-person or online). The interviews were conducted in Japanese, and the interviewees were selected to include teachers who varied in their experience (e.g., with or without studying abroad or taking phonology/phonetics courses), who taught at different school levels, who expressed stronger or weaker beliefs about L2 pronunciation instruction, and who provided harsher or more lenient ratings than the average so as to capture possible links between their experiences, beliefs, and rating behaviors. During the interview, the researcher asked participants about their rating decisions, following a protocol to

elicit their justifications for speech assessments and to clarify their answers to the beliefs and experience statements (Appendix C).

3.4. Data Analysis

All questionnaire responses and speech ratings collected in LimeSurvey were entered into spreadsheets. The open-ended survey responses were first coded for participants' experience living abroad, pronunciation-specific training, and pronunciation-related coursework, which were the three broad categories emerging from the questionnaire. Table 2 summarizes these categories, illustrating each with representative examples from participants' responses. Because participants' experiences displayed great variability within each category, particularly for pre-service teachers, and were distributed non-normally, all coding was categorical, involving either the presence or absence of a particular experience.

Table 2. *Summary of Experience Variables*

Experience type	Representative examples
Living abroad	Taking English language courses abroad; acting as a Japanese teaching intern abroad; living in a homestay environment; pursuing degrees in foreign universities; business; parent's relocation abroad
Pronunciation training	Using phonetic transcription to pronounce segments and words; learning about mechanisms underlying articulation of segments; learning about teaching methods and sequences; engaging in oral presentations; participating in conversational activities

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Phonetics/phonology coursework	Becoming familiar with conventions of phonetic transcription; learning about specific segmental and suprasegmental features of English
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Participants' responses to beliefs statements were coded as numerical values (0–1,000). Following Nagle et al. (2018), the 15 items were grouped under six categories, with internal consistency of the items per category examined using Cronbach's alpha: (a) importance of pronunciation (single item), (b) how pronunciation develops ($\alpha = .40$), (c) when to teach pronunciation ($\alpha = .46$), (d) what pronunciation features to teach ($\alpha = .09$), (e) how to teach pronunciation ($\alpha = .34$), and (f) who can teach pronunciation ($\alpha = .46$), with 2–4 items per category. Items 11 and 14 (see Appendix D) were dropped due to very low corrected item-total correlations, resulting in improved values for (c) when to teach pronunciation ($\alpha = .55$), and (d) what pronunciation features to teach ($\alpha = .31$). Although the reliability of the original items from the L2 Spanish teacher sample was unknown (Nagle et al., 2018) and the present values were below the commonly-accepted benchmark of .70 (Larson-Hall, 2010), they were similar to the .34–.43 reliability indexes reported previously for short, newly-developed surveys targeting teachers' beliefs about L2 pronunciation (e.g., Baran-Łucarz, 2016; Huensch & Thompson, 2017). Recognizing low item reliability as a limitation, mean scores for each category were computed, separately for pre-service and in-service teachers, to capture participants' beliefs about L2 pronunciation instruction.

Speech assessments were first tabulated for each participant, separately per dimension (comprehensibility, fluency, accentedness), and then checked for internal consistency using two-way mixed, average measures, absolute agreement, intraclass correlation (ICC). This analysis yielded high values for comprehensibility ($ICC_{in-service} = .97$, $ICC_{pre-service} = .92$), fluency (ICC_{in-

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service = .93, ICC_{pre-service} = .91), and accentedness (ICC_{in-service} = .96, ICC_{pre-service} = .93). The ratings were therefore averaged across the 40 speakers, separately for each participant, to enable teacher-based comparisons. Interview data were transcribed by a research assistant and checked by the first author. Although interview responses were not analyzed in detail because they fall outside the immediate scope of this quantitative study, teachers' comments were thematically grouped (e.g., within broad beliefs categories encompassing importance of pronunciation, who can teach pronunciation) and were consulted to provide qualitative explanations for the obtained quantitative findings.

Because participants' experience and background variables were coded categorically, between-group comparisons of these variables were carried out using chi-square contingency tests for frequency data. In terms of teachers' beliefs and their speech ratings, visual inspection of data, indexes of skewness and kurtosis, and tests of normality showed that these data were normally distributed, except for importance of pronunciation, which showed a negative skew. Therefore, all beliefs variables and speech ratings were analyzed using parametric statistics (independent-samples *t* tests), except for importance of pronunciation, which was analyzed through non-parametric statistics (Mann-Whitney *U* tests). To examine relationships between participants' speech ratings and their experience and beliefs profiles, correlation and regression analyses were performed, where each rated category (comprehensibility, fluency, accentedness) served as the outcome variable and the three experience and six beliefs variables were entered as predictors. Only the predictors that reached the benchmark for a weak association ($\pm.25$) were selected for inclusion in a regression model (Plonsky & Oswald, 2014). Effect sizes were interpreted based on previous literature (Cohen, 1988; Plonsky & Ghanbar, 2018; Plonsky & Oswald, 2014), using Cohen's *d* for between-group contrasts (0.40, 0.70, and 1.00), Cramer's *V*

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for categorical comparisons (.07, .21, and .35), r for correlation strength (.25, .40, and .60), and R^2 for proportion of variance explained (.10, .32, and .51), where each value designates small, medium, and large effects, respectively.

4. Results

The first research question asked whether in-service teachers differ from pre-service teachers in terms of their experience and beliefs relevant to L2 pronunciation instruction. As summarized in Table 3, whereas more than half of in-service teachers had resided abroad (72%), received training in pronunciation pedagogy (58%), and taken phonology/phonetics courses (78%), the proportion of pre-service teachers who reported these experiences never reached 50% (22–48%). In-service teachers predictably differed from pre-service teachers in all these experience categories, as shown through between-group comparisons (Bonferroni-corrected $\alpha = .017$), with medium-to-large effects (Table 3).

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Table 3. *Descriptive Statistics for Experience Variables (Number, Percentage of Participants) and Beliefs Variables (Mean, Standard Deviation) by Group*

Teacher profiles	In-service		Pre-service		Comparison		
	<i>n</i>	%	<i>n</i>	%	χ^2	<i>p</i>	<i>V</i>
Experience							
Living abroad	36	72	17	34	14.49	< .001	.38
Pronunciation training	29	58	11	22	13.50	< .001	.37
Phonetics/phonology	39	78	24	48	9.65	.003	.31
Beliefs	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Importance of pronunciation	665	313	513	282	2.59	.010	.51
How pronunciation develops	576	131	597	134	-0.79	.429	.16
When to teach pronunciation	388	121	466	117	-3.29	.001	.66
What pronunciation features to teach	739	173	643	149	2.99	.002	.60
How to teach pronunciation	630	177	607	160	0.67	.503	.13
Who can teach pronunciation	417	222	554	159	-3.54	< .001	.71

Note. Importance of pronunciation was examined using Mann-Whitney *U* test, with *z* value reported instead of *t* value.

Table 3 also shows descriptive statistics for participants' beliefs, separately for in-service and pre-service teachers, where 0 indicates strong disagreement, 1,000 indicates strong agreement, and 500 implies no strong opinion. In terms of the importance of pronunciation, whereas in-service teachers tended to value pronunciation as an important aspect of successful communication (665), pre-service teachers did not have a strong opinion about this (513). For the category of how pronunciation develops, both in-service teachers (576) and pre-service teachers

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(697) tended to believe that L2 pronunciation can develop over time and/or with pedagogical intervention. In terms of when to teach pronunciation, both in-service teachers (388) and pre-service teachers (466) tended to disagree with delaying a focus on pronunciation until later. Concerning which pronunciation features to teach, in-service teachers (739) were more supportive of the idea that L2 pronunciation instruction should target a specific feature, compared to pre-service teachers (643). Regarding how to teach pronunciation, both in-service teachers (630) and pre-service teachers (607) were generally in favour of providing focused pedagogical interventions targeting pronunciation. Finally, whereas in-service teachers tended to disagree with the idea that nativelike pronunciation is essential for teachers (417), pre-service teachers were more inclined to agree with this idea (554).

Statistically speaking, the two groups were significantly different for three of the six beliefs categories (Bonferroni-corrected $\alpha = .008$), with small-to-medium effects. Compared to pre-service teachers, in-service teachers were more supportive of the idea that L2 pronunciation instruction should target a specific feature ($p = .002$). Unlike pre-service teachers, in-service teachers were also more likely to reject the statements that pronunciation instruction should be postponed until students gain greater L2 proficiency ($p = .001$) and that nativelike pronunciation is essential for teachers ($p < .001$). In-service teachers also tended to show stronger beliefs about the importance of pronunciation instruction, although this difference missed significance after a Bonferroni correction ($p = .010$).

The second research question examined whether in-service teachers differ from pre-service teachers in their ratings of L2 comprehensibility, fluency, and accentedness. As summarized in Table 4, in-service teachers tended to provide higher (more generous) ratings than pre-service teachers, evaluating secondary school students as more comprehensible and fluent

and as less accented. However, only the ratings of comprehensibility were statistically significant between in-service teachers (651) and pre-service teachers (581), with a small-to-medium effect. In terms of the relationships between the ratings, comprehensibility showed a strong association with fluency ($r_{\text{in-service}} = .60$, $r_{\text{pre-service}} = .71$) but a weak-to-moderate association with accentedness ($r_{\text{in-service}} = .32$, $r_{\text{pre-service}} = .44$), while fluency and accentedness were moderately correlated with each other ($r_{\text{in-service}} = .56$, $r_{\text{pre-service}} = .49$).

Table 4. *Descriptive Statistics for Speech Ratings by Group*

Rated dimension	In-service		Pre-service		Comparison		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Comprehensibility	651	137	581	106	2.90	.005	.58
Fluency	505	110	494	104	0.51	.609	.10
Accentedness	473	130	438	116	1.42	.158	.29

Note. All ratings are based on 1,000-point scales, and higher ratings indicate more generous (positive) responses (i.e., more comprehensible, fluent, less accented).

The final research question examined whether teachers' experience and beliefs predict their L2 speech ratings. As summarized in Table 5, for in-service teachers, only comprehensibility and fluency ratings showed weak negative associations with two beliefs variables (importance of pronunciation, who can teach pronunciation), and no ratings were correlated with any experience variables. In contrast, for pre-service teachers, only accentedness ratings revealed a weak negative association with one experience variable (living abroad) and one beliefs variable (how to teach pronunciation). Consequently, only the predictors that

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exceeded the benchmark for a weak relationship with the speech ratings ($r \geq |.25|$) were included in the subsequent regression analyses.

Considering the pattern of obtained associations, the regression analyses targeted in-service teachers' comprehensibility and fluency ratings and pre-service teachers' accentedness ratings as the outcome variables. In light of a small sample size ($n = 50$), all models were considered exploratory, with predictors entered using a backward-deletion method and the best fitting model determined by comparing the F statistics across models (Field, 2018). All predictors were examined to detect strong intercorrelations among them, but no r value exceeded $|.80|$ (see Appendix E for the full correlation matrix).

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Table 5. *Pearson Correlation Analyses Between Speech Ratings and Participants' Experience and Beliefs Variables*

Teacher profiles	Comprehensibility		Fluency		Accentedness	
	In-service	Pre-service	In-service	Pre-service	In-service	Pre-service
Experience						
Living abroad	.22	.04	-.06	-.06	-.02	-.28
Pronunciation training	.08	-.02	.08	-.12	-.13	-.15
Phonetics/phonology	.14	.15	-.03	-.02	-.11	-.16
Beliefs						
Importance of pronunciation	-.25	-.11	-.30	-.16	-.19	-.09
How pronunciation develops	.06	.16	.12	.13	.22	.05
When to teach pronunciation	-.07	-.01	.05	-.16	.16	.13
What pronunciation features to teach	-.01	.21	-.10	.20	.17	-.16
How to teach pronunciation	-.07	-.11	-.07	-.20	-.13	-.28
Who can teach pronunciation	-.27	-.13	-.01	.11	.07	.08

Note: Values in bold indicate $r \geq |.25|$.

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For in-service teachers (see Table 6), comprehensibility ratings were predicted by teachers' beliefs about the importance of pronunciation and who can teach pronunciation, for a total of 16% of variance explained ($R = .40$, $R^2 = .16$), $F(2, 47) = 4.34$, $p = .019$, which corresponds to a small effect. In turn, fluency ratings were predicted by teachers' beliefs about the importance of pronunciation, with 9% of variance explained ($R = .30$, $R^2 = .09$), $F(1, 48) = 4.81$, $p = .033$. In all cases, the relationships were negative, such that stronger beliefs were associated with students assessed as being less comprehensible and less fluent.

Table 6. *Summary of Regression Models for In-Service Teachers*

Predictors	<i>B</i>	<i>SE B</i>	β	95%CI	<i>t</i>	<i>p</i>
Comprehensibility						
Constant	817.37	59.38		[697.90, 936.83]	13.76	< .001
Who can teach pronunciation	-0.19	0.08	-0.31	[-0.36, -0.03]	-2.30	.026
Importance of pronunciation	-0.13	0.59	-0.30	[-0.25, -0.01]	-2.18	.035
Fluency						
Constant	575.43	35.60		[503.86, 647.01]	16.17	< .001
Importance of pronunciation	-0.11	0.50	-0.30	[-0.20, -0.01]	-2.19	.033

Finally, for pre-service teachers (see Table 7), accentedness ratings were predicted by teachers' experience living abroad and their beliefs about how to teach pronunciation, with 16% of variance explained ($R = .40$, $R^2 = .16$), $F(2, 47) = 4.34$, $p = .019$, which corresponds to a small effect. Again, all relationships were negative, meaning that pre-service teachers with experience

living abroad and those with stronger beliefs assigned lower ratings, evaluating students as being more accented.

Table 7. *Summary of Regression Model for Pre-Service Teachers*

Predictors	<i>B</i>	<i>SE B</i>	β	95%CI	<i>t</i>	<i>p</i>
Accentedness						
Constant	583.77	62.01		[459.03, 708.51]	9.42	< .001
Living abroad	-67.87	32.44	-0.28	[-133.13, -2.61]	-2.09	.042
How to teach pronunciation	-0.20	0.10	-0.28	[-0.40, -0.01]	-2.07	.044

5. Discussion

This study examined the relationship between Japanese in-service and pre-service teachers' beliefs about L2 English pronunciation instruction, their previous experience in language learning and teacher training, and their assessments of L2 comprehensibility, fluency, and accentedness. Overall, in-service and pre-service teachers illustrated distinct profiles relevant to L2 pronunciation instruction. Compared to pre-service teachers, in-service teachers had significantly more language learning and teaching experience, and they held stronger beliefs about what pronunciation features to teach and who can teach pronunciation. Compared to pre-service teachers, in-service teachers also provided significantly higher (more lenient) comprehensibility ratings to Japanese speakers of L2 English, with a similar trend for fluency and accentedness ratings. Finally, with respect to the relationship between teachers' profiles and their L2 speech assessments, in-service teachers' comprehensibility and fluency ratings were predicted by their beliefs (but not experience) variables (importance of pronunciation, who can

teach pronunciation), whereas pre-service teachers' accentedness ratings were predicted by a combination of beliefs and experience variables (how to teach pronunciation, living abroad). This study appears to be among the first to demonstrate differences between in-service and pre-service teachers in terms of their experience and beliefs profiles relevant to L2 pronunciation instruction and to show that teachers' L2 speech assessments vary as a function of these profiles.

5.1. Teachers' Beliefs: Between-Group Differences

The present analyses revealed several instances in which pre-service and in-service teachers hold distinct beliefs that seem to be related to a difference in the amount of accumulated professional experience. For example, in-service teachers demonstrated stronger beliefs than pre-service teachers about when to teach pronunciation, what pronunciation features to teach, and who can teach pronunciation. In terms of the timing of instruction, in-service teachers tended to disagree with the statement that pronunciation instruction should be postponed, which is congruent with documented benefits of early phonetic and articulatory instruction for pronunciation development (Darcy et al., 2012) and with previous reports of experienced teachers supporting an early, explicit focus on pronunciation for L2 learners (Nagle et al., 2018). Consistent with a societal trend of promoting an early onset of English education, this belief also likely reflects teachers' first-hand experience seeing their students and colleagues struggle to improve pronunciation as they get older. For example, one teacher (P41) described a colleague with severe pronunciation problems, attributing his difficulty to learning the language in adulthood: "I think it's partly because [he] learned English late... The older we get, no one would point out mistakes."

When it comes to specific features to focus on, in-service teachers were in agreement that L2 speakers' first language creates a specific set of pronunciation challenges to address. In

support of this sentiment, one teacher (P30), for example, commented that “[his students] all share and face problems with vowel insertion,” while another teacher (P12) noted that “[his students] don’t know how to pronounce /ɪ/ and /l/... [and that] such errors are common to a certain extent.” Thus, in-service teachers seem to have developed some awareness of their students’ pronunciation needs, where their initial expectations created through personal experience and teacher training likely got refined and adjusted in light of first-hand, daily experience dealing with students’ strengths and weaknesses.

In addition, in-service teachers, similar to experienced teachers in previous work (Nagle et al., 2018), tended to reject the idea that pronunciation is best taught by first-language (native) speakers. For instance, one teacher (P44) commented that a native-speaking assistant teacher working with him is not the best person to teach pronunciation because “those who have not learned how to teach [pronunciation] cannot understand why [students] cannot imitate [them].” By contrast, pre-service teachers generally held the opposite view, namely, that nativelike pronunciation is essential for teachers, which is in line with prior research showing that nativeness is a preferred goal for many Japanese learners and teachers (Tokumoto & Shibata, 2011; Uchida & Sugimoto, 2020). At least some of these pre-service teachers’ beliefs might stem from their own (often negative) experience with language learning (Nespor, 1987), as illustrated in the following comment by one pre-service teacher (P59):

“I used to think why this person is teaching me English even though they cannot speak English. So, even if a teacher has good way of teaching English, I think it’s no good if the person themselves cannot speak [it].”

Taken together, the obtained between-group differences in teacher beliefs imply that professional experience enables practicing teachers to develop new or refine existing beliefs

about pronunciation instruction, likely minimizing the role of personal (negative or positive) experiences in their beliefs system. For instance, teachers who are initially reluctant to use kinesthetic approaches to the teaching of pronunciation may realize the effectiveness of these approaches by using newly learned techniques in their classroom practice (Burri & Baker, 2021). Teaching experience thus anchors teachers in the pedagogical reality of their profession (Polat, 2010), so they can recognize their students' needs and feel reasonably competent addressing those.

5.2. Teachers' Beliefs: Between-Group Similarities

Other teachers' beliefs seemed to be less susceptible to change (e.g., Holt-Reynolds, 1992), in the sense that, despite differences in professional experience, both pre-service and in-service teachers expressed similar views. Even though all teachers tended to agree that pronunciation can develop with time and/or through instruction, which is a belief supported by empirical findings (e.g., Derwing & Munro, 2013), they were generally ambivalent about the effectiveness of instruction, giving preference to language experience outside classrooms. This is surprising, considering that most teachers must be aware that naturalistic exposure to L2 English is limited in a context such as Japan. In addition, although all teachers generally perceived value in developing focused activities targeting pronunciation, which is in line with previous work (Nagle et al., 2018), they were uncertain as to whether they should provide feedback on their students' pronunciation errors. Teachers' concerns about corrective feedback are well-documented, where even those teachers who are fully aware of the value of feedback avoid providing it for lack of time or fear of making students unnecessarily anxious or uncomfortable (e.g., Couper, 2019).

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Teachers' beliefs about the effectiveness of L2 pronunciation instruction and the value of pronunciation-focused feedback might be particularly resistant to change, even after considerable teaching experience. This is because teachers' beliefs center on the core principles of pronunciation pedagogy that can be internalized only through dedicated pedagogical training. Indeed, a positive impact of pronunciation-focused pedagogical training, such as through classroom observation, cannot be overstated, because it can act as a catalyst for a change in teacher cognition (Burri, Baker, & Chen, 2017). Burri and Baker (2021) further showed that teacher cognition continues to develop after training in pronunciation pedagogy and that at least some teachers consistently apply in their classroom practice the conceptual knowledge (e.g., regarding the importance of teaching suprasegmentals) and the pedagogical techniques (e.g., kinesthetic activities) learned through training, which underscores the importance of professional development in pronunciation instruction. However, both pre-service and in-service teachers in this study were unlikely to have received extensive, dedicated training in pronunciation pedagogy. The majority of teacher preparation programs in Japan prioritize teacher trainees' theoretical knowledge in phonetics and phonology (e.g., focusing on phonetic transcription, articulatory system) over practical, pedagogical techniques of classroom management, materials development, and instructional delivery, with the consequence that many teachers do not know what effective pronunciation instruction might look like (e.g., Orii, 2015). Therefore, from this vantage point, it appears reasonable for teachers to continue attributing pronunciation development to factors outside their classrooms (e.g., naturalistic exposure) and to remain reluctant to address pronunciation issues through focused techniques (e.g., corrective feedback).

Among all beliefs categories, the question regarding the importance of teaching pronunciation yielded the greatest variability in teacher responses, with a trend for in-service

teachers to place a greater value on instruction, as in Nagle et al. (2018). On the one hand, as teachers strive to meet their curricular needs, they may downplay the value of pronunciation, which is a skill frequently neglected in Japan in both high-stakes tests (e.g., university entrance exams) and low-stakes assessments (e.g., classroom performance quizzes) in favor of other aspects of language such as vocabulary and grammar. On the other hand, many teachers, and especially those with experience living or studying abroad, may have accumulated personal experiences (both positive and negative) highlighting the significance of fluent, intelligible, and comprehensible speech for L2 communication (Derwing, 2003). Teachers might therefore draw on multiple sources of evidence, which may sometimes conflict, while formulating their beliefs about the value of pronunciation instruction. This would result in teachers developing diverse, variable beliefs. Thus, even after years of professional experience, in-service teachers may continue to hold fixed beliefs or to express ambivalent or highly variable views about L2 pronunciation unless they are exposed to the state-of-the-art in pronunciation research and pedagogy, for instance, in terms of the effectiveness of pronunciation instruction (Saito & Plonsky, 2019) or the value of corrective feedback (Saito & Lyster, 2012), through pre-service teacher training or in-service professional development.

5.3. Teachers' Experience and Beliefs as Predictors of L2 Speech Ratings

A novel finding of this study concerns the association between teachers' experience and beliefs and their assessment of L2 comprehensibility, fluency, and accentedness. Compared to pre-service teachers, in-service teachers tended to upgrade Japanese students' comprehensibility, rating them as easier to understand. This finding is in line with previous literature, where expert raters with teaching experience and/or expertise in linguistics (Kang, 2012) and those with familiarity with accented L2 speech (Saito & Shintani, 2016) were shown to provide more

lenient speech ratings. Just as linguistically trained and untrained raters attend to different linguistic dimensions when evaluating L2 speech (e.g., Tavakoli & Hunter, 2017), more versus less experienced teachers might focus on different combinations of speech cues (e.g., word stress, pausing, segmental substitutions) relevant to comprehensibility (Isaacs et al., 2018). However, only comprehensibility ratings, not teacher-assessed fluency or accentedness, differed as a function of teacher experience. This implies that teachers with more pedagogic experience may have become skilled at understanding their students' L2 English, with the consequence that the same performance might sound more comprehensible, but not necessarily less accented and more fluent, to a more than less experienced teacher.

It is particularly noteworthy that in-service teachers' assessments of comprehensibility and fluency (but not accentedness) were predicted by their beliefs profiles, notably, the same beliefs that distinguished them from pre-service teachers (i.e., importance of pronunciation, who can teach it). If teachers' beliefs in fact reflect the dimensions that they consider particularly relevant to L2 pronunciation, then this finding implies that teachers rely on their pedagogic experience to calibrate their beliefs (i.e., pronunciation is important; successful teachers need not be first-language speakers) with their teaching and learning goals, which presumably include the attainment of comprehensible and fluent L2 speech. As shown in previous research which elicited raters' justifications for their assessments, experienced teachers develop knowledge about, and sensitivity to, various dimensions of L2 speech at the levels of phonology (e.g., sound substitutions, misplaced word and sentence stress), fluency (e.g., speed, pausing location and frequency), as well as lexis and grammar (e.g., sophisticated use of vocabulary, accurate use of grammar), which they use to guide their assessments (Isaacs et al., 2018; Tavakoli & Hunter, 2017). Therefore, compared to pre-service teachers who lack extensive teaching experience, in-

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service teachers likely align their beliefs and assessment practices through becoming more knowledgeable about the specific dimensions of L2 speech that correspond to what they believe to be important for L2 pronunciation (in this case, comprehensible and fluent L2 speech).

In contrast, accentedness ratings were associated with teacher profiles for pre-service teachers only. Pre-service teachers who felt uncertain about which pronunciation features to teach and who felt unsure whether they themselves, as L2 speakers, could address pronunciation tended to evaluate Japanese students as being more accented, likely demonstrating an excessive focus on the dimensions of speech that give rise to an L2 accent (Foote & Trofimovich, 2018). For individuals with little pedagogic experience, a focus on the specific phonetic features contributing to the perception of an L2 accent (e.g., vowel epenthesis, /ɪ/–/i/ contrast) might be especially pronounced in contexts such as Japan, where the proportion of English-speaking residents is small, English is generally taught through classroom-based instruction, and the majority of teachers share a language background with their students (Uchida & Sugimoto, 2020). For pre-service teachers, a focus on accentedness may have also been amplified through studying or living abroad, as it highlights for teachers the specific ways in which their L2 speech differs from the performance of first-language speakers (e.g., Eger & Reinisch, 2019). Thus, when evaluating L2 accentedness, pre-service teachers who are yet to accumulate classroom teaching experience seem to rely on their developing beliefs about L2 pronunciation and on their personal histories (e.g., studying abroad), revealing their emphasis on the very dimension that they themselves desire to master. An interim broad conclusion emerging from these findings is that teachers' beliefs and experiences may have consequences for their behavior, in this case, in terms of their assessment of L2 speech, and that these beliefs (and presumably their consequences) change as a function of classroom teaching experience.

5.4. Pedagogical Implications

The present findings offer several implications, particularly for teacher education in Japan. Considering that all teachers in this study appeared to ascribe a greater role in pronunciation development to naturalistic experience than to classroom-based instruction, it might be beneficial for teacher trainees to be exposed to research evidence highlighting the effectiveness of pronunciation instruction (e.g., Saito & Plonsky, 2019). Because teachers have limited time to teach pronunciation, teacher trainees should also be introduced to the idea of functional load, as a way of deciding which pronunciation features they should focus on, in relation to error gravity in communication (e.g., Suzukida & Saito, 2021). For instance, even though the often-discussed /ɪ-/I/ contrast is notoriously difficult for Japanese speakers (Flege et al., 1995), other contrasts (e.g., /v-/b/, /s-/ʃ/) might be even more consequential for speaker intelligibility (Suzukida & Saito, 2021), yet many teachers are unaware of this. Although both pre-service and in-service teachers tended to consider nativelike pronunciation to be essential for teaching pronunciation, teacher educators should continue to promote intelligible and comprehensible L2 speech as a learning goal (Levis, 2020), to highlight the value of professional expertise over nativeness (Levis et al., 2016), and to encourage teachers to confidently act as role models for their students. Finally, whereas the majority of in-service teachers (78%) and half of pre-service teachers (48%) had taken phonology/phonetics courses, only 58% of in-service teachers and 22% of pre-service teachers had reported training in pronunciation instruction. Thus, teacher education should incorporate training in the teaching and assessment of L2 pronunciation while emphasizing pronunciation-focused activities (e.g., visual aids, kinetic approaches, technology-based tools) and corrective feedback techniques shown to be effective for the development of L2 pronunciation (e.g., Iizuka et al., 2020; Saito & Lyster, 2012). As part

of such training, teachers should be encouraged to participate in classroom observations because observing experienced colleagues may highlight for novice teachers how the conceptual knowledge they develop through training relates to teachers' classroom behaviors, which might serve as a catalyst for change in teacher cognition (Burri, Baker, & Chen, 2017). Preferably, this training should also be well-situated within a given context, for example by taking class size, national curriculum, and learner needs into account, to help teachers continue refining their knowledge and skills (Burri & Baker, 2021).

5.5. Limitations and Future Directions

The findings of this study must be interpreted in light of its several limitations. First, participating teachers were treated as part of two dichotomous groups. Although a group-based comparison is in line with most studies examining teacher cognition (e.g., Burri, Baker, & Chen, 2017), it may have been overly simplistic to reveal the complexity of teachers' experiences and beliefs and their relationship with speech assessments. Similarly, following from our previous work (Tsunemoto et al., 2023), teachers' experience was also treated as a binary variable, to determine if the presence or absence of a given experience, such as residence abroad, was relevant to teachers' assessments. While this methodological decision allowed for direct comparisons between pre-service teachers with limited experience and in-service teachers with a more diverse experiential toolkit, future work may wish to employ continuous measures of teachers' experience and beliefs, in relation to their assessments, preferably in a longitudinal or a mixed-methods design, to reveal subtle relationships among these dimensions. Researchers might also wish to conduct longer-term studies examining how the same teachers' beliefs and practices change as a function of their experience (Burri & Baker, 2021) and how these beliefs and practices are associated with teachers' assessment practice, with qualitative evidence (e.g.,

through interviews, classroom observations, or reflective journals) used to complement quantitative data. In addition, teachers' beliefs about pronunciation instruction were captured in this study through a brief questionnaire which revealed low internal consistency across thematically grouped items, suggesting that the present findings must be interpreted with caution. Therefore, future work should revisit these findings by using a different, context-specific instrument to tap into teachers' beliefs (for an example, see Foote & Thomson, 2021), in order to validate the thematic groupings in Nagle et al.'s (2018) questionnaire and to explore how scale resolution (i.e., Likert scales vs. continuous sliding scales) impacts item reliability.

6. Conclusion

This study examined how Japanese teachers' experience and beliefs profiles are associated with their assessment of L2 English comprehensibility, fluency, and accentedness. In terms of experience, in-service teachers reported more L2 pronunciation-relevant experience (residence abroad, training in pronunciation pedagogy, phonetics and/or phonology coursework) compared to pre-service teachers. As for teachers' beliefs about L2 pronunciation instruction, in-service teachers tended to hold stronger beliefs than pre-service teachers, where some beliefs emerged as more susceptible to change, likely as a function of teachers' professional experience, compared to other beliefs. Notably, in-service teachers' comprehensibility and fluency ratings and pre-service teachers' accentedness ratings were predicted by their beliefs and experiences, which provided some of the first direct evidence for a relationship between teachers' assessment practice and their professional experience and beliefs relevant to L2 pronunciation instruction.

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11. Learners' pronunciation issues that don't interfere with communication should be a lower priority for teachers to address. *
12. Teachers should develop objectives and activities for pronunciation like they do for other aspects of language. *
13. Pronunciation is something teachers should address on the spot in response to students' problems. *
14. In helping learners to improve their pronunciation of English, it's more important to have training in teaching pronunciation than it is to have a natively like accent. *
15. It may not be politically correct, but I think anyone who teaches pronunciation should have a natively like accent. *
16. Pronunciation instruction is only effective for highly motivated learners.
17. Some individuals resist changing their pronunciation in order to maintain their identity.
18. Pronunciation teaching should help make students comfortably intelligible to their listeners.
19. The best person to teach pronunciation is a native speaker.
20. The goal of a pronunciation teaching should be to eliminate, as much as possible, foreign accent.
21. I wish I had more training in teaching pronunciation.
22. A heavy accent is a cause of discrimination against non-native speakers.
23. Where I live, there are few pronunciation training opportunities available.

Note. The 15 beliefs items analyzed in this study are marked by an asterisk.

24. Ideal English pronunciation model to teach is (check all that apply)

- American
- British
- Other English varieties (e.g., Australian, New Zealand, Canadian, Scottish, Irish)
- International English (e.g., Indian, Singaporean)

25. How would you describe your own English pronunciation?

- Heavily accented and impede communication
- Heavily accented but does not impede communication
- Moderately accented but no communication problems
- Slightly accented but can communicate easily
- Native-like and can communicate easily

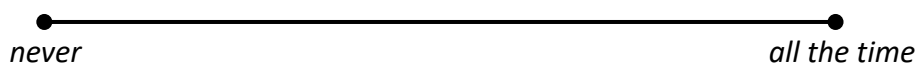
26. Please tell us about your thoughts relevant to speaking and pronunciation

On a scale of 0–100...

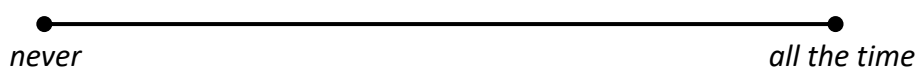
I wish to acquire native like pronunciation:



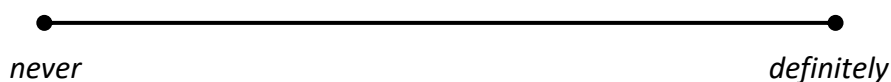
How much time of class should be dedicated for teaching pronunciation at **junior** high schools?



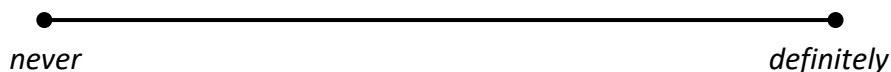
How much time of class should be dedicated for teaching pronunciation at **senior** high schools?



Do you think a **speaking** course should be offered as a required course in a university curriculum?



Do you think a **pronunciation** course should be offered as a required course in a university curriculum?



II. Experiences in Teaching and Phonology

1) Are you currently teaching English at educational institution(s)?

Yes / No

If yes, please describe the context:

School level: primary/junior high/senior high/university/other (please specify)

Place: _____ Year: _____ Length: _____ Subject: _____
(e.g., Tokyo) (e.g., 2017) (e.g., 2 years) (e.g., Oral communication)

2) How much time is usually spent on teaching pronunciation in your class?

I usually teach pronunciation (____) % of the time during class.

TEACHERS' BELIEFS, EXPERIENCE, AND L2 SPEECH ASSESSMENT

5) Do you have any linguistics background (i.e., linguistics major, classes)?

Yes / No

If yes, please describe the context:

Place: _____ Year: _____ Course: _____

What kinds of activities do you generally do (e.g., practicing speaking and presentation, free conversations)? What theories were presented? What materials did you use?)

6) Have you ever taken any English proficiency test (e.g., EIKEN, GTEC, TOEIC, TOEFL, IELTS, TEAP, etc.) before?

Yes / No

If yes, please write the name of the test and **the most recent** scores you got.

Test _____ Scores _____ Year _____

7) How much do you use English during your class as opposed to other languages (e.g., Japanese)?

I use English (____) % of the time during class.

8) How many hours do you voluntarily spend speaking English?

Approximately (____) hours per week with native speakers of English (from the USA, the UK, Australia etc.)

What kinds of activities do you generally do (e.g., practicing speaking and presentation, free conversations)?

Approximately (____) hours per week with non-native speakers of English (e.g., advanced-level Korean, Chinese and Japanese learners of English)

What kinds of activities do you generally do (e.g., practicing speaking and presentation, free conversations)?

【Previous English Learning Experience】

9) **When did you start learning English?** _____ years old

Where? (at elementary/junior high school, conversation school etc.) _____

10) Please tell us about your previous English learning experience

Preschool _____ hours per week in class; _____ hours per week outside class

Elementary school _____ hours per week in class; _____ hours per week outside class

Junior high school _____ hours per week in class; _____ hours per week outside class

Senior high school _____ hours per week in class; _____ hours per week outside class

University _____ hours per week in class; _____ hours per week outside class

11) Have you been abroad more than one month (other than short family trips)?

Yes / No

If yes, where did you visit and what did you do?

When? _____ years old Where? _____ (city, country)

How long? _____ days/months/years

Why (e.g., study abroad, homestay)? _____

III. Language use

1. What is your native language (from birth)? Japanese / Other: _____

2. Which other languages do you know? _____

Of these languages, which would you say you are proficient in? _____

3. Self-reported English skills

Please rate your level of English proficiency in each of the following areas:

	<i>Beginner</i>	<i>Advanced</i>
Speaking	●	●
Listening	●	●
Reading	●	●
Writing	●	●

IV. General background

1. Name _____

2. Gender: Male / Female / Other

3. Age: _____ (years)

4. Birthplace (City, Prefecture): _____

5. Is your hearing normal as far as you know? Yes / No

Appendix B

Screenshot of Online Speech Rating Interface

*Listen to the speech sample once and rate each speech measure.

▶ 0:00 / 0:30 == 🔊

📘 Only numbers may be entered in these fields.
📘 Each answer must be between 0 and 1000

How comprehensible was the speech?	😊	<input type="range"/>	😊
How fluent was the speech?	😊	<input type="range"/>	😊
How accented was the speech?	😊	<input type="range"/>	😊

Appendix C

Interview Prompt

Interview Prompt

Please look at the answers you gave in the previous belief and experience survey.

1. You gave XXX in the previous survey (tell their answer). Do you have any experiences or opinions that relate to this idea?
2. You answered that XXX (variety of English) is the ideal model for pronunciation instruction in the previous survey. Do you have any experience or opinions related to this idea? Could you please tell me why you selected (did not select) XXX (variety of English)?

Please listen to the speech sample again and review your rating.

1. Please tell me the overall impression of the speech (in terms of comprehensibility, fluency, and accentedness).
2. Were there any particular aspects of his speech that stuck out to you, or any problems you noticed?
3. If you were to give him guidance or advice about (comprehensibility, fluency, and accentedness), what would you say to him?

Please look back on the entire speech evaluation

1. Which of the three perspectives do you think is the most important for Japanese English learners, especially junior and senior high school students, to learn (and why)?
2. Is there one aspect of the three perspectives that you found more difficult/easy to grade than the others (if so, why?)

Appendix D

Descriptive Statistics for Teachers' Beliefs by Teacher Group ($n = 50$ each)

Theme and contributing items	In-service		Pre-service	
	<i>M</i>	<i>SD</i>	<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	665	313	513	282
<i>How pronunciation develops</i>				
2. Pronunciation tends to develop naturally in English even for learners who don't care about improving it	576	131	597	134
3. With effort, learners can modify their English pronunciation even if they've been pronouncing things a certain way for a long time	712	238	676	194
4. 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	514	236	593	241
5. English pronunciation can be taught	758	202	724	190
<i>When to teach pronunciation</i>				
6. In first- and second- year English language courses, pronunciation can be skipped to focus on other skills or areas of language	280	169	358	150
7. Teachers should avoid an early focus on pronunciation as a way of preventing learners from reinforcing mistakes	176	218	280	230
8. Since pronunciation is a sensitive issue, teachers should only address it once students feel more confident in their ability to speak English	376	253	348	206
	287	272	446	226

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<i>What pronunciation features to teach</i>	685	145	611	131
9. 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	699	236	643	185
10. People who speak the same native language will face similar challenges in learning to pronounce a foreign language such as English	796	197	643	230
11. Learners' pronunciation issues that don't interfere with communication should be a lower priority for teachers to address	576	302	546	246
<i>How to teach pronunciation</i>	630	177	607	160
12. Teachers should develop objectives and activities for pronunciation like they do for other aspects of language	739	208	704	157
13. Pronunciation is something teachers should address on the spot in response to students' problems	500	249	511	253
<i>Who can teach pronunciation</i>	417	222	554	159
14. In helping learners to improve their pronunciation of English, it's more important to have a nativelylike accent than it is to have training in teaching pronunciation	275	216	490	217
15. I think anyone who teaches pronunciation should have a nativelylike accent	547	318	684	222

Note. Items 7 and 14 were reverse-coded and their wording was adjusted to achieve comparable directionality for all items contributing to each theme.

TEACHERS' BELIEFS, EXPERIENCE, AND L2 SPEECH ASSESSMENT

Appendix E

Correlation Matrices for Teachers' Experience and Belief Profiles

In-service teachers' experience and belief profiles ($n = 50$)

	1	2	3	4	5	6	7	8	9
1. Living abroad	—	.10	.10	.06	.15	.19	.27	-.26	-.06
2. Pronunciation training		—	.33	.15	.23	-.21	-.04	.09	-.23
3. Phonetics/phonology			—	.13	.14	-.23	-.01	.15	-.05
4. Importance of pronunciation				—	.01	-.45	.24	.40	-.16
5. How pronunciation develops					—	.16	.25	-.26	-.06
6. When to teach pronunciation						—	-.04	-.67	.05
7. What pronunciation features to teach							—	-.09	-.08
8. How to teach pronunciation								—	-.21
9. Who can teach pronunciation									—

Pre-service teachers' experience and belief profiles ($n = 50$)

	1	2	3	4	5	6	7	8	9
1. Living abroad	—	.13	.33	.06	-.37	-.06	.17	.01	-.08
2. Pronunciation training		—	-.03	-.06	.15	-.19	.08	.13	.15
3. Phonetics/phonology			—	.18	-.01	-.07	.03	.01	-.13
4. Importance of pronunciation				—	.04	-.23	-.23	.16	.04
5. How pronunciation develops					—	.17	-.12	.01	.03
6. When to teach pronunciation						—	-.09	-.40	-.19
7. What pronunciation features to teach							—	-.01	-.06
8. How to teach pronunciation								—	.03
9. Who can teach pronunciation									—