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# Teachers' Perceptions of Home Language Practices in Chinese Language Education: Evidence from Dublin

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#### **Abstract**

This study examines how Chinese language teachers in Dublin interpret students' home language practices and how these judgments shape classroom moves. Using a sequential mixed-methods design, the study surveyed and interviewed teachers (n = 12) and families (n = 37). Alignment was operationalized with a Bias Index (BI = teacher oral proficiency rating - Home Input Index, both 1-5), based on a parent questionnaire on home Chinese use (frequency and domains) and a teacher 1-5 oral proficiency rating. Descriptive comparisons and thematic coding linked BI patterns to reported decisions on task difficulty and scaffolding. Results show limited alignment: teachers slightly overestimated home input for heritage families and underestimated it for mixedheritage families. Three classroom heuristics shaped these judgments: in-class oral fluency, handwriting quality, and participation. Overestimation was associated with premature removal of supports; underestimation led to prolonged simplification that narrowed practice opportunities. Teacher background mattered: locally raised heritage teachers were more accepting of hybrid practices than native-speaker teachers, producing different task progressions. Teacher perception therefore functions as an active mediator in the ideology-management-practice chain. The Bias Index provides a practical way to make this mechanism visible. The study suggests light-touch intake data, reversible checkpoints for scaffolding, and brief, practice-oriented parent communication to reduce systematic misclassification.

#### **Keywords**

Home language policy, teacher perception, teacher bias, Chinese language education, mixed-heritage learners

# 中文教育中教师对家庭语言实践的感知及课堂回应——以都柏林为例

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# 摘要

本研究考察都柏林的中文教师如何解读学生的家庭语言实践,以及这些判断如何影响 课堂中的教学决策。研究采用解释性顺序混合设计,对教师(n = 12)与家庭(n = 37) 开展问卷与访谈。研究将"对齐程度"操作化为偏差指数(Bias Index, BI = 教师口语等级 - 家庭输入指数(Home Input Index, HII), 二者量表均为 1-5 分)。其中, HII 基于家 长关于家庭中文使用频率与领域的问卷,教师口语等级为教师对学生口语能力的 1-5 分评级。通过描述性比较与主题编码,研究把 BI 模式与教师在任务难度与支架设置上 的报告性决策相连结。结果显示,对齐程度有限:教师对华裔学生的家庭输入略有高 估,对混血家庭学生的家庭输入则有低估。三条课堂判断线索影响这些判断:课堂口 语流利度、书写质量与课堂参与度。高估常导致过早撤除支架; 低估则带来过度简化 并收窄练习机会。教师背景也产生差异:本地成长的华裔教师对"混合型实践"更为接 纳,形成不同的任务推进路径。由此,教师感知在"意识形态—管理—实践"的链条中 充当了一个主动的中介。偏差指数为呈现并监测这一机制提供了可操作的工具。基于 此,研究建议:采用轻量化入学信息采集、设置可回退的支架检查点,并进行简短而 面向实践的家校沟通,以减少系统性误判。

# 关键词

家庭语言实践,教师感知,偏差指数(BI),中文教育,混血家庭学生

# Introduction

The family has long been recognized as a crucial domain for heritage language development, with research consistently showing that parental beliefs, management strategies, and everyday practices strongly shape children's bilingual trajectories (Curdt-Christiansen, 2016; Özfidan & Hos, 2023). Within the Chinese diaspora, this role is particularly salient, as the home often provides the primary exposure to Chinese in contexts where societal support is minimal. For both heritage and mixed-heritage families, decisions about when, how, and in what form Chinese is used at home significantly affect children's opportunities to acquire and sustain the language (Gorter & Berardi-Wiltshire, 2025; Nenonen, 2024). However, the family environment does not operate in isolation. Once children enter school, teachers' understandings of what happens at home—and the instructional responses these understandings generate become equally important in shaping learning outcomes. In this sense, family practices and teacher perceptions are not separate variables but parts of an interactive system of influence.

While family language policy (FLP) studies have shed light on ideology, management, and practice at the household level (Spolsky, 2004; Curdt-Christiansen & Huang, 2020), they often treat the school as a peripheral or secondary factor. The assumption is that teachers respond to students' observable proficiency without systematically incorporating knowledge of home input. Conversely, research on teacher cognition—including studies of teacher beliefs, agency, and judgment (Borg, 2003; De Houwer, 2017)—has rarely considered how teachers interpret students' home language experiences. This disconnection creates a conceptual gap: although home language practices are widely acknowledged to influence learning, their educational consequences depend heavily on how teachers perceive and act upon them. If perceptions are inaccurate or partial, the pedagogical strategies built on them may not match learners' actual needs. This risk is amplified in the teaching of Chinese as a foreign or heritage language, where teachers frequently work in fragmented educational settings and have limited access to systematic information about family practices.

The Irish context provides a distinctive case for examining this issue. Chinese language education in Ireland is delivered across a patchwork of weekend community schools, public primary schools, and private tuition programs, often staffed by teachers with diverse professional and linguistic backgrounds. In such settings, teachers rely on heuristic cues—such as oral fluency, handwriting quality, or classroom participation—to infer students' home input, but these cues may not accurately reflect family practices. Heritage families, for instance, may sustain strong ideological support but struggle with limited resources, whereas mixed-heritage families may display greater variability between symbolic identification with Chinese and functional use at home. Without reliable channels of information, teachers' judgments risk oversimplifying these complex realities. As a result, mismatches can arise between perceived and actual home input, with consequences for how instruction is targeted, scaffolding is allocated, and progress is evaluated.

This study responds to these challenges by investigating Chinese language teachers' perceptions of home language practices in Dublin and analyzing how these perceptions shape pedagogical decisions. Specifically, it aims to (1) integrate teacher perception into Spolsky's ideology-management-practice model, thereby positioning teachers as mediators in the homeschool interface; (2) compare the perceptions of heritage and mixed-heritage families to reveal how family type conditions both parental support and teacher interpretations; and (3) operationalize mismatches through a "Bias Index" that quantifies the divergence between teacher judgments and parental reports. By combining survey and interview data from twelve teachers and thirty-seven families, this study offers both empirical insights and methodological tools for understanding the dynamic interplay between family input and classroom practice.

Beyond its empirical findings, the study contributes to broader discussions of bilingual education and teacher cognition in three ways. Theoretically, it demonstrates the value of linking FLP with teacher perception research, showing how home and school function as mutually shaping domains rather than isolated environments. Methodologically, it advances a replicable approach for measuring perception accuracy in heritage and foreign language education. Practically, it offers insights for teacher training and curriculum design in multilingual contexts, emphasizing the importance of addressing mismatches between teacher assumptions and family realities. These contributions extend the relevance of the study beyond the Chinese language education community, speaking to ongoing debates about equity, representation, and teacher mediation in bilingual and heritage language schooling worldwide.

# **Literature Review**

# Home language practices and learning outcomes

Family Language Policy (FLP) research has long emphasized the pivotal role of parental ideologies and routines in shaping children's bilingual development (Spolsky, 2004; Hu & Yagmur, 2024). Foundational frameworks such as Fishman's (1991) domain theory delineated when and where particular languages are used within the home, while later studies expanded to explore how language ideologies intersect with emotional development, identity formation, and family cohesion (De Houwer, 2017; Kwon et al., 2025). A recent systematic review by Mart nez-Yarza et al. (2024) confirms that FLP not only influences linguistic outcomes but also supports broader domains such as cognitive flexibility and self-esteem (Hiver & Whitehead, 2018).

More recent work highlights the heterogeneity of FLP across family types. Research on heritage families shows both consistency and fragility in daily language management (Liang & Shin, 2021; Al Murshidi et al., 2023), while studies on mixed-heritage households point to even greater variability in how ideologies translate into practice (Özfidan & Hos, 2023; Berliner, 2005; Gorter & Berardi-Wiltshire, 2025). These studies suggest that while many parents articulate strong intentions to maintain the heritage language, the degree of actual implementation is mediated by inter-parental negotiation, family resources, and shifting child preferences. Importantly, these findings demonstrate that "family" cannot be treated as a uniform input variable, but rather as a dynamic and negotiated site of identity and practice (Liang & Shin, 2021).

In multilingual contexts like Ireland, children from heritage and mixed-heritage families often receive differential exposure to Mandarin—from daily use in heritage households to occasional or symbolic use in mixed ones (De Houwer, 2017). Such differences shape not only language proficiency but also children's sense of symbolic belonging (Xie et al., 2022). As Martínez-Yarza et al. (2024) note, FLP affects domains beyond language, influencing motivation and self-esteem. Yet, these studies predominantly rely on parental narratives and intentions, leaving underexplored how these practices are interpreted and acted upon by educators.

This raises a key conceptual gap: while existing research has established the importance of home language practices for bilingual development, little attention has been paid to how teachers perceive, interpret, and respond to these practices in classrooms. Without this link, FLP risks being understood only from the family's perspective, without accounting for the crucial mediating role of teacher judgment in shaping how home-based practices translate into educational outcomes. This resonates with broader frameworks such as Hornberger's continua of biliteracy, which emphasize the layered nature of home–school language negotiation.

# Teacher perception, bias, and professional agency

Most FLP research has focused on family-level agency. The teacher's role, however, has received comparatively little attention. In reality, teachers are far from passive recipients of background information; rather, they actively filter, interpret, and act upon it through their professional lenses (Jiang, 2023). This interpretive process often involves heuristic reasoning, shaped by teaching experience and assumptions about language learning trajectories (Wang & Sheikh-Khalil, 2014; Xie et al., 2022). As a result, teachers may apply intuitive categorizations to students—such as labeling them "low-input" or "heritage" learners—which then influence expectations, feedback, and task design (De Houwer, 2017).

Understanding this process requires attention to teacher agency. Priestley et al. (2015) propose an ecological model of agency, emphasizing that it emerges from the interplay between teachers' capacities (e.g., beliefs, skills), structural conditions (e.g., curriculum demands), and situational contexts (e.g., classroom dynamics, family communication) (Hiver & Whitehead, 2018). In multilingual classrooms, teachers' interpretations of home language input are filtered both by their pedagogical beliefs and the institutional contexts in which they work (He & Zhang, 2024). Empirical studies show that where policy guidance is vague, teachers' agency becomes especially visible, as they devise culturally responsive strategies and adapt expectations in the absence of clear standards (Zhang, 2018).

This highlights an important tension: while teacher agency can be productive in adapting to diversity, it also risks reinforcing biases when judgments are based on limited or misleading cues (Rosenthal, 1994). Pajares (1992) and Borg (2003) argue that teachers' implicit beliefs often shaped by their prior experiences—act as filters that determine how classroom information is interpreted. Berliner (2005) similarly notes that teachers rely on internal "knowledge structures" when making rapid decisions under uncertainty. Recent work on teacher cognition echoes this, showing that beliefs are socially situated and mediated through context-sensitive decisions (Li, 2020; Cai & Zheng, 2020). Together, these perspectives explain why teachers may form intuitive judgments about students' home input with little concrete evidence, and why these judgments carry significant pedagogical weight.

Despite these insights, few studies systematically examine how teacher agency operates specifically in relation to nuanced home language practices. Most accounts either treat teacher bias as a peripheral issue or analyze classroom strategies without linking them back to home input. This leaves a gap in understanding how teachers translate family-level differences into classroom action, and how these interpretations themselves shape educational trajectories. Placing teacher agency within the frame of family language policy allows us to move beyond descriptive accounts of bias and towards a dynamic model of how teachers' interpretive acts can both enable and constrain students' opportunities for learning. This echoes King and Fogle's (2008) notion of home-school discontinuity, where teacher perceptions often reframe family practices in ways that reshape learning opportunities.

# From family practices to classroom decisions: A dynamic model

The relationship between family language environments and classroom instruction is neither linear nor automatic. Instead, it is mediated by how teachers collect, interpret, and respond to information about students' home language use. This makes teacher perception a critical but under-theorized link between family practices and classroom outcomes. While studies of FLP have illuminated parental beliefs and home strategies (Curdt-Christiansen, 2016; Fishman, 1991; Spolsky, 2004), fewer have examined how these practices are filtered through teachers' interpretive frameworks before shaping pedagogical action. In practice, what teachers think they know about students' home input often matters as much as what actually occurs at home (Hoff, 2018).

Existing research provides partial insights into this process. Krulatz et al. (2022), for example, shows that translanguaging practices can serve as adaptive responses when input gaps are perceived, while Özfidan & Hos (2023) highlights how multimodal scaffolding is tailored to learners' confidence levels. Yet these contributions remain fragmented, focusing on isolated classroom techniques rather than on the broader interpretive mechanism that connects family practices to instructional choices. Without an integrated framework, the dynamics between home and school risk being reduced to background variables rather than recognized as an ongoing, reciprocal negotiation (Gorter & Berardi-Wiltshire, 2025).

This study advances the conversation by proposing a three-stage process: family practice  $\rightarrow$ teacher perception → instructional response. Within this model, teachers function as interpretive agents who translate family-based sociocultural knowledge into classroom strategies. Crucially, the model also acknowledges a feedback loop: classroom practices can reshape parental attitudes and behaviors. For instance, increased scaffolding for students perceived as "low-input" may prompt parents to intensify home support or adjust their language management strategies. Conversely, when teachers underestimate a child's home exposure, instructional expectations may be lowered, unintentionally discouraging parental investment.

The theoretical significance of this model lies in situating teacher agency within the broader FLP framework. Rather than treating family input as a fixed predictor of learning outcomes (Hoff, 2018), it highlights the mediating role of professional judgment—both enabling and constraining learners' opportunities. By integrating FLP theory (Spolsky, 2004; Curdt-Christiansen, 2016) with perspectives on teacher cognition (Borg, 2003; Priestley et al., 2015; Xie et al., 2022), this approach provides a more dynamic lens for understanding how multilingual classrooms function. It suggests that the effects of home language practices on learning cannot be evaluated in isolation, but must be understood as negotiated outcomes shaped through teachers' interpretations and subsequent pedagogical actions.

# **Methods**

# **Participants**

The study involved twelve CFL teachers in Dublin, Ireland, and 37 student families enrolled in their classes. The student group consisted of 23 heritage families (both parents of Chinese heritage) and 14 mixed-heritage families (one Chinese and one non-Chinese parent). Children ranged in age from 7 to 13 years (M = 9.4), with prior exposure spanning from informal home use only to 5 years of weekend-school instruction.

Teachers represented diverse training and sociolinguistic backgrounds. Six were heritage teachers raised in Ireland with bilingual upbringings, while the other six were native-speaker teachers from mainland China, recruited through community schools and cultural institutes. Their teaching experience ranged from 1 to 15 years (M = 7.2), across weekend schools (n =5), public primary schools (n = 4), and private tutoring contexts (n = 3). This dual composition—heritage teachers with local cultural insight and native-speaker teachers with linguistic expertise—provided a unique comparative lens for analyzing how professional background mediates perceptions of students' home input.

#### Variables and measures

Three indices were developed to capture the relationship between home language input and teacher perception.

### **Home Input Index (HII)**

Parental questionnaires contained five Likert-scale items (1 = never, 5 = always) on Chinese use in key domains: parent-child conversation, sibling interaction, reading activities, media exposure, and cultural participation (e.g., festivals, community events). These dimensions reflect the widely recognized domains of bilingual socialization (De Houwer, 2017; Kwon et al., 2025; Mart nez-Yarza et al., 2024). Responses were averaged into a composite score (1-5) representing overall intensity of Chinese exposure at home.

# **Teacher Perception Score (TPS)**

Teachers rated each student's oral Chinese proficiency on a 5-point scale (1 = no proficiency, 5 = native-like fluency), drawing on classroom indicators such as participation, fluency, and accuracy. Oral proficiency was selected because it is the most salient and readily observable skill in beginner CFL classrooms, and typically forms the basis of teachers' judgments of learner progress.

### Bias Index (BI)

To quantify mismatches, a Bias Index was calculated as:

### BI = TPS - HII

*Note.* The Bias Index is always computed as the numeric difference between the teacher's 1–5 rating and the parent-reported 1-5 input score (BI = TPS – HII). For robustness, I also report a near-alignment band of  $|BI| \le 0.5$  when specified. Where BI > 0 indicates overestimation of home input, BI < 0 indicates underestimation, and BI = 0 indicates alignment. This operationalization, comparable to perception–reality gap analyses, enabled both quantitative comparison between groups and qualitative interpretation of pedagogical consequences.

Reversible checkpoints for scaffolding. To reduce over- and under-adjustment, I logged two light-touch checkpoints. (1) Reading without pinyin: if a learner reads a 120–150-character text (HSK 1–2 range) with ≥85% character accuracy and ≤2 hesitations per 50 characters across two consecutive sessions, pinyin is removed for that text type the following week; if accuracy falls below 75% or hesitations exceed 4/50, pinyin is reinstated. (2) Oral retell with target lexis: if a learner completes a 60–90-second retell using ≥70% of a 10-item target list across two consecutive sessions, task complexity is increased; if target use drops below 50% in the next session, the task reverts to the previous level. Pairing these checkpoints with BI helps separate sustained progress from momentary classroom signals.

# **Data collection and analysis**

Data collection followed a mixed-methods sequence. Parental questionnaires and teacher ratings were first collected through community schools and private classes, yielding a 92% valid response rate. This was followed by semi-structured interviews with five teachers and seven parents, conducted in English or Mandarin depending on participant preference, with each session lasting 40-60 minutes. Interviews explored how teachers formed impressions of home input and how parents responded to teacher feedback.

Interview transcripts were coded using thematic analysis (Braun & Clarke, 2006). Two researchers independently coded the data, achieving high inter-coder reliability (Cohen's k = .82). Discrepancies were resolved through discussion. Quantitative data were analyzed with SPSS 27, employing descriptive statistics, correlations, and group comparisons. Given the modest sample size, inferential claims were limited, but the triangulation of survey and interview data ensured both breadth and depth. The combination of quantitative indices and qualitative narratives enabled the study to identify not only patterns of alignment and bias, but also the mechanisms through which teacher perceptions shaped classroom practice (Creswell & Plano Clark, 2017).

#### **Findings**

# Teachers' heuristic cues in assessing home input

Data from surveys and interviews show that teachers relied heavily on classroom heuristics when judging students' level of home Chinese input. Instead of drawing on systematic knowledge of family practices, they most frequently turned to three observable indicators: oral fluency, handwriting quality, and classroom participation. These cues served as immediate reference points in everyday teaching, though they did not always align with parental reports. Oral fluency emerged as the most common heuristic. In the teacher survey, 9 out of 12 teachers (75%) stated that fluent speech in class was taken as evidence of daily Chinese use at home. Teacher H, for example, explained, "I can tell the family is speaking Chinese at home because the child speaks without hesitation." Yet parent questionnaires pointed to notable inconsistencies. One mixed-heritage child, described by the teacher as receiving "obvious daily input," was reported at home as speaking Chinese only once or twice per week. Across the sample, seven students (19%) displayed oral fluency that exceeded what family practices would suggest, showing that confident classroom performance did not always mirror the frequency of home use.

Handwriting quality was another commonly cited shortcut. Half of the teachers (6 out of 12, 50%) linked neat and accurate character writing to strong parental supervision. Teacher M remarked, "When characters are neat and accurate, it shows the parents must be supervising at home." However, questionnaire data indicated that only 11 of the 37 families (30%) engaged in regular writing practice. Several parents even emphasized that handwriting progress was "entirely school-driven." This points to a clear discrepancy between classroom observations and family accounts, suggesting that handwriting achievements were often attributed to home support where parents reported none.

Classroom participation served as a third cue. Five teachers (42%) associated active engagement with rich home input, whereas reticence was interpreted as weak support at home. Teacher L observed, "If a child volunteers answers and talks a lot, I assume they hear Chinese daily." Yet survey data revealed a different picture: two mixed-heritage families reported using Chinese "always" at home, even though their children were reluctant to participate in class. In these cases, individual personality traits, such as shyness, appeared to mask the home language environment in teachers' eyes.

Taken together, these findings show that teachers depended on three main heuristic cues—oral fluency, handwriting, and participation—as summarized in Table 1. These cues were convenient for classroom judgment, but comparisons with parent reports reveal that their validity varied considerably across family contexts.

Table 1 Teacher Heuristics for Inferring Home Chinese Input

| Heuristic cue                  | % of teachers citing | Typical teacher comment  | Contradictory parent report  | Interpretation   |
|--------------------------------|----------------------|--|--|--|
| Oral<br>fluency                | 75%<br>(9/12)        | "The child speaks<br>without hesitation, so<br>the family must use<br>Chinese every day."<br>(Teacher H) | Mixed family<br>reported child<br>used Chinese 1–2<br>times per week | Fluency often reflects classroom confidence, not home input          |
| Handwritin<br>g quality        | 50%<br>(6/12)        | "Neat handwriting<br>shows parents are<br>supervising."<br>(Teacher M)                                   | Only 30% families reported regular home writing                      | School-<br>driven<br>literacy<br>mistaken for<br>parental<br>support |
| Classroom<br>participatio<br>n | 42%<br>(5/12)        | "Talkative students<br>must hear Chinese<br>daily." (Teacher L)  | Parents of quiet<br>children reported<br>"always" using<br>Chinese   | Personality<br>mistaken for<br>linguistic<br>environment             |

# Mismatches between teacher perceptions and reported home input

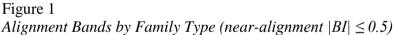
While teachers often relied on observable classroom cues, comparison with parental questionnaires shows clear gaps between classroom-based inferences and reported home practices. Across the full sample, near-alignment ( $|BI| \le 0.5$ ) occurred in 11 of 37 cases (29.7%), with the remainder split between overestimation (BI > 0) and underestimation (BI < 0). These discrepancies were directional by family type (Table 2).

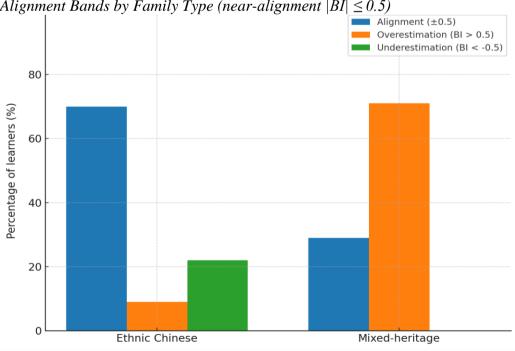
Table 2 Alignment of Teacher Perceptions with Reported Home Input

| Alignment type                    | Total (n = 37) | Heritage (n = 23) | Mixed-heritage (n = 14) |
|-----------------------------------|----------------|-------------------|-------------------------|
| Overestimation (BI > 0)           | 16 (43.2%)     | 12 (52.2%)        | 4 (28.6%)               |
| Underestimation (BI < 0)          | 10 (27.1%)     | 4 (17.4%)         | 6 (42.9%)               |
| Near-alignment ( $ BI  \le 0.5$ ) | 11 (29.7%)     | 7 (30.4%)         | 4 (28.6%)               |

*Note.* BI = TPS – HII (both 1–5). Near-alignment is  $|BI| \le 0.5$ . Percentages are column-wise within each family type and overall.

Quantitatively, the Bias Index (BI = TPS – HII) revealed consistent differences between groups. For heritage families (n = 23), the average BI was +0.42, indicating a tendency to overestimate home Chinese input relative to parental reports. For mixed-heritage families (n = 14), the average BI was -0.61, indicating a tendency to underestimate reported input. Figure 1 visualizes this split using the near-alignment window: heritage cases cluster above the alignment line (BI > 0), whereas mixed-heritage cases cluster below it (BI < 0).



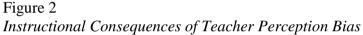


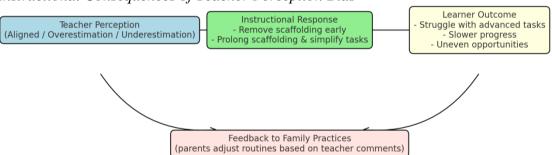
Case evidence supports these patterns. In several mixed-heritage cases, teachers inferred limited home use from quiet or inconsistent participation, while parents reported regular Chinese conversations at home. Conversely, some heritage cases were judged as "immersed" based on fluent classroom talk, yet parental reports located most Chinese use in weekend cultural events rather than daily routines. These examples align with the classroom heuristics teachers reported—oral fluency, handwriting quality, and participation—showing that such signals are proxies for home practice rather than direct evidence.

Taken together, the low near-alignment rate and the directional BI split set up the instructional consequences discussed next: when BI > 0, supports tend to be removed too soon; when BI < 0, supports tend to linger and narrow practice opportunities (see Section 4.3).

# Pedagogical consequences of perception bias

Misalignments between teacher perceptions and reported home input did not remain abstract; they translated into concrete shifts in how instruction was delivered. Teachers adjusted task design, scaffolding and feedback according to their perceptions. In line with Section 4.2, overestimation (BI > 0) tended to trigger the premature removal of supports, whereas underestimation (BI < 0) tended to produce prolonged simplification. Figure 2 visualizes these pathways.





A frequent consequence of overestimation was early withdrawal of scaffolding. In several heritage cases, fluent classroom talk was interpreted as evidence of strong home input, so pinyin prompts were dropped or guided sentence frames were reduced within the first month. Yet parental questionnaires indicated limited day-to-day use (e.g., 1–2 uses per week or weekend-heavy exposure), leaving learners to struggle with tasks pitched above their actual input level. Teachers described such decisions as "moving them up because the basics looked secure," but the mismatch became visible once supports were removed.

By contrast, underestimation led to extended simplification. Quiet or cautious participation was often read as lack of exposure, so learners were kept on repetitive drills or prolonged pinyin even when parents reported regular Chinese use at home. Mixed-heritage learners were most affected: conservative interpretations of low-key behavior slowed the transition to more complex oral and literacy tasks, narrowing opportunities to practice higher-level skills.

Perception also shaped the feedback loop with families. In interviews, eight parents reported adjusting home routines after teacher comments. Some increased shared reading or speaking time when told their child was "not getting enough practice." Others relaxed expectations after being told input was "already strong," which unintentionally reinforced overestimation cases.

Pairing these communications with the reversible checkpoints defined in Methods (Section 3.2) provides a pragmatic way to separate sustained progress from momentary classroom signals: move up after two green checks; step back after one red check.

Overall, these findings show a simple chain—perceived input → scaffolding move → learner opportunity—that connects the alignment patterns in Section 4.2 with classroom action. Overestimation produced early scaffold removal and task acceleration, mostly in heritage cases; underestimation produced prolonged simplification and slower progression, mostly in mixedheritage cases. Table 3 summarizes these instructional outcomes with example cases and reported family responses.

Table 3 Instructional Outcomes of Perception Bias

| Type of bias                    | Classroom adjustment   | Example case   | Reported family response  |
|---------------------------------|--|--|---|
| Overestim ation (BI > 0)        | Removal of scaffolding; early task acceleration              | Heritage child described as "obviously immersed" based on fluent talk; parent report indicates 1–2 uses weekly or weekend-only cultural events | pressure after hearing input was "already   |
| Underesti<br>mation (BI<br>< 0) | Prolonged drills;<br>delayed progression;<br>extended pinyin | Mixed-heritage child judged as weak input due to quiet participation; parent report indicates daily Chinese with one parent                    | Parent increased home reading/speaking time after being told the child "needed more practice" |

# Teacher background and acceptance of hybrid practices

Patterns of teacher perception were not uniform across the sample; instead, they reflected clear differences between heritage teachers raised in Ireland and native-speaker teachers from mainland China. These contrasting orientations were visible in both survey responses and interview accounts, shaping how each group evaluated hybrid or partial home practices.

Survey data indicated that heritage teachers were more likely to classify mixed or symbolic Chinese use as "moderate-to-strong input." Among the six heritage teachers, four (67%) rated children from mixed-heritage families as receiving "sufficient" support even when parental reports described Chinese use as weekly or occasional. In contrast, only one of the six nativespeaker teachers (17%) offered similar ratings; the others consistently categorized such families as "weak input." This divergence produced a visible split between tolerance and skepticism toward hybrid practices.

Interview evidence reinforced this distinction. Heritage teachers frequently drew on their own bilingual experiences when discussing students' backgrounds. Teacher J, who grew up in Dublin in a Chinese-Irish household, noted:

"Even if parents only mix Chinese with English, it still helps the child keep a connection." I know from my own experience that fragments of Chinese can matter."

This perspective resonated with mixed-heritage families who described Chinese use as symbolic or intermittent rather than continuous. By recognizing these partial practices, heritage teachers often maintained higher expectations for students, allowing them to engage with more complex tasks despite irregular input.

Native-speaker teachers, however, tended to adopt a stricter stance. Teacher C explained: "If the home mixes Chinese and English, the child cannot build a proper Chinese foundation. Real input must be monolingual."

This expectation of sustained and exclusive use was echoed by other native-speaker teachers who equated hybrid practices with "confused" or "unstable" foundations. Consequently, they often rated students from mixed families lower on the input scale, leading to extended scaffolding and delayed task progression.

Classroom records further illustrated these differences. In one community school, a heritage teacher praised a child from a mixed family for "using even small bits of Chinese at home," and subsequently introduced character-writing tasks within the first month. In a parallel class at the same school, a native-speaker teacher withheld similar tasks for a comparable student, citing "insufficient input at home." These contrasts highlight how teacher background shaped instructional judgments even under similar classroom conditions.

Table 4 summarizes these tendencies. Heritage teachers were more inclined to view hybrid practices positively (67%), while native-speaker teachers largely classified them as inadequate (83%). These diverging orientations reveal not only different evaluative thresholds but also distinct pathways by which teacher background filtered family reports into classroom practice.

Table 4 Teacher Background and Evaluation of Hybrid Home Practices

| Teacher group                             | % rating hybrid input as sufficient | Typical stance             | Example classroom decision   |
|---|-------------------------------------|----------------------------|--|
| Heritage<br>teachers (n<br>= 6)           | 67%                                 | • 1                        | Introduced character writing despite partial input                 |
| Native-<br>speaker<br>teachers (n<br>= 6) | 17%                                 | Hybrid input as inadequate | Delayed task progression until<br>evidence of monolingual<br>input |

Overall, these findings show that teacher background played a decisive role in how hybrid practices were judged. Heritage teachers, informed by their own bilingual upbringing, tended to validate partial input as meaningful, while native-speaker teachers from China set stricter monolingual standards. This divergence produced contrasting instructional choices, even within similar school contexts. These contrasts close the descriptive analysis of perception diversity and prepare the ground for the following discussion, where the mechanisms behind these differences are examined in greater depth.

#### Discussion

# Teacher perception as a mediating mechanism

Building on the findings, this section argues that teacher perception functions not as a passive mirror of home practices but as an active interpretive mechanism that mediates how family routines translate into classroom outcomes. Within Spolsky's (2004) ideology-managementpractice model, the home has often been conceptualized as a self-contained system, where parental beliefs lead to management strategies and daily practices. Yet in school settings, this tripartite chain does not operate in isolation: teachers intervene as critical interpreters, filtering the visibility of home input and transforming it into instructional responses.

The analysis shows that alignment between teacher perceptions and family reports enabled more precise instructional calibration—appropriate scaffolding withdrawal, task progression, and reinforcing feedback to families. This was particularly visible in mixed-heritage families where frequent home use of Chinese made input cues highly detectable. Conversely, systematic misalignments occurred when teachers relied on heuristics that inflated or deflated perceived input. Heritage learners were disproportionately overestimated, while quiet mixed-heritage learners were often underestimated (Lee et al., 2024; Hu & Yagmur, 2024). These patterns reveal that perception bias is not incidental but patterned, redistributing instructional opportunities and shaping divergent learning trajectories.

Crucially, teacher perception also extends its influence back into the home through evaluative comments. Parents frequently adjusted language routines in response, sometimes intensifying practice or, in other cases, relaxing expectations. Such feedback loops underscore that perception is not limited to classroom decision-making but constitutes a mediating mechanism connecting family and school in both directions (Hiver & Whitehead, 2018). This aligns with Norton's (2013) notion of shifting investment, where teacher evaluations reshape how families allocate language resources.

In sum, the mediating role of teacher perception highlights why similar home environments can produce divergent outcomes once filtered through interpretive judgments. Rather than treating perception as background noise, FLP research in educational contexts must recognize it as an integral mechanism that amplifies, distorts, or redirects the effects of home practices. This mechanism is precisely what the Bias Index captures: the measurable gap between teacher-rated proficiency and parental reports of input, making the interpretive filter both theoretically visible and empirically tractable. These claims are evidenced by the patterns reported earlier. Group-level BI diverged by family type (heritage: mean +0.42; mixed-heritage: -0.61; Figure 1), with alignment relatively rare (11/37, 29.7%; Table 2). Together with the three classroom heuristics teachers relied on (oral fluency, handwriting, participation; Table 1), these results substantiate perception as an active mediating layer between home practices and classroom moves rather than a passive mirror.

### Sources of perception bias

The patterned misalignments observed in this study can be traced to two interrelated sources: the reliance on classroom heuristics and the perception bias shaped by teachers' own backgrounds. These mechanisms interacted to structure how family input was judged and explain why bias consistently clustered around heritage and mixed-heritage learners.

The first source is the heuristic logic of classroom observation. Teachers frequently equated visible behaviors—oral fluency, handwriting, and classroom participation—with home input. As Borg (2003) and Feryok (2010) suggest, such heuristics function as practical shortcuts under conditions of limited information, allowing teachers to act decisively in real time. Yet these cues compressed complex constructs into oversimplified proxies: fluency was mistaken for daily exposure, handwriting for parental supervision, and quietness for lack of input. These interpretive shortcuts, while efficient, systematically distorted the visibility of family practices, leading to both overestimation and underestimation (Gorter & Berardi-Wiltshire, 2025; Xie et al., 2022).

The second source lies in teachers' biographical and professional trajectories. Heritage teachers raised in bilingual Irish environments tended to view hybrid and symbolic practices as legitimate resources, while native-speaker teachers trained in monolingual Chinese systems often discounted such practices as inadequate. This contrast mirrors broader research on teacher cognition, where professional judgments are deeply conditioned by prior experiences and identity positions (De Houwer, 2017; Hiver & Whitehead, 2018; Gorter & Berardi-Wiltshire, 2025). Consequently, instructional responses diverged: heritage teachers advanced learners with partial input, while native-speaker teachers withheld progression until "proper" monolingual exposure was evident.

Taken together, these two mechanisms—heuristic inference and background-shaped orientation—produced structured patterns of bias. Heritage learners with visible confidence were more often overestimated, while quiet mixed-heritage learners were often underestimated despite strong home input. Bias, therefore, is not a matter of individual error but a structural byproduct of how teachers operationalize family practices through limited visibility and perception bias. The source-and-pattern link is visible in the data. Where heuristics overweighted visible confidence, overestimation clustered (BI > 0) and scaffolds were removed earlier; where quiet behavior masked rich home use, underestimation clustered (BI < 0) and scaffolds persisted (Sections 4.2–4.3; Figure 1; Table 2; Figure 2; Table 3). The background split in evaluating hybrid practices (Table 4) explains why similar signals yielded different categorizations across classes.

# **Pedagogical implications**

If teacher perception acts as a mediating but biased mechanism, the practical challenge is not to eliminate heuristics—which are inevitable in busy classrooms—but to recalibrate them in ways that reduce systematic misclassification. The findings point to three pedagogical implications: anchoring perception, structuring scaffolding, and reframing teacher-parent communication.

First, anchoring perception with lightweight information. A brief intake form at the start of the term, recording the frequency and domain of Chinese use at home, could serve as a reference point. Rather than demanding exhaustive knowledge of family life, such baseline data provide an anchor against which classroom impressions can be checked. This small adjustment helps correct the tendency to overestimate confident mixed-heritage learners or underestimate quiet mixed-heritage learners, without overburdening teachers.

Second, structuring scaffolding through evidence-based progression. Instead of withdrawing or withholding support solely on intuitive judgments, teachers can adopt reversible checkpoints—short formative assessments that confirm whether learners can consistently perform at the next level. This approach prevents premature withdrawal of scaffolds when input has been overestimated and ensures that learners with hidden resources are not held back unnecessarily. In this way, scaffolding becomes a mechanism for balancing efficiency with fairness.

Third, reframing communication with parents as practice-oriented feedback. The study shows that parental routines were often adjusted in response to teacher comments, sometimes productively but sometimes misleadingly. To avoid speculation about overall home practices, teacher feedback can focus on observable classroom behaviors and suggest specific, actionable strategies (e.g., "Two short reading sessions this week could reinforce character recognition"). This form of feedback channels classroom evidence into constructive home support, minimizing the risk of reinforcing perception bias (Rosenthal, 1994).

Finally, professional development needs to explicitly address the interpretive diversity among teachers. Heritage teachers' recognition of hybrid practices and native-speaker teachers' emphasis on monolingual foundations both have pedagogical value. Structured workshops that present classroom cases can foster cross-orientation dialogue, enabling teachers to reflect on their own perception bias and negotiate more balanced approaches.

Taken together, these implications shift the focus from demanding perfect accuracy to designing classroom routines and professional practices that make teacher perception more resilient to bias. By anchoring impressions, staging progression, and framing feedback constructively, CFL teachers can transform perception from a source of inequity into a tool for more equitable and effective instruction. Calibrating perception with light-touch intake data and reversible checkpoints turns intuition into auditable action. In our sample, cases with BI > 0 tracked the premature withdrawal of supports, while BI < 0 tracked prolonged simplification (Section 4.3; Figure 2; Table 3). Pairing BI with checkpoint logs offers a simple rule of motion: sustain two green checks before moving up; one red check triggers a step back, reducing systematic misclassification without demanding exhaustive knowledge of family life.

# Theoretical contribution and scope

This study makes a dual contribution to research on family language policy (FLP) and teacher cognition by reframing teacher perception as an active mediating mechanism in the homeschool chain. In Spolsky's (2004) classic tripartite model—ideology, management, and practice—the home is often treated as a self-contained system, with schools only serving as an external setting. Yet the findings here show that learner outcomes are not a direct product of parental practices alone. Instead, they are interpreted, filtered, and redistributed by teachers in the classroom. This re-specification extends FLP research into institutional domains by highlighting perception as a structural layer of mediation. It explains why children from seemingly similar home environments may follow divergent classroom trajectories: the difference lies in how teachers interpret the resources that families provide.

Methodologically, the study also advances an operational way to capture this interpretive gap. The Bias Index, constructed by comparing teacher-rated proficiency with the Home Input Index derived from parental reports, quantifies misalignment between observed and reported input. While simple in design, the index makes bias visible and measurable, enabling systematic study of what has often been described only anecdotally in teacher cognition research (De Houwer, 2017; Hiver & Whitehead, 2018). In this sense, the study contributes not only to theoretical refinement but also to methodological innovation by offering a replicable tool for examining perception bias across different language education contexts.

At the same time, the scope of this contribution requires careful qualification. The study does not suggest that teachers must acquire exhaustive knowledge of family life, nor that questionnaires should replace professional judgment. Rather, it proposes light-touch calibration mechanisms that can supplement heuristic judgments without overburdening practitioners. The emphasis is on minimizing systematic misclassification, not on replacing teacher expertise.

Finally, the contextual limits of the study must be acknowledged. The data come from a relatively small sample of 12 teachers and 37 families in Dublin, Ireland, primarily within supplementary schooling programs. Results may not generalize to larger state school systems, to majority-language contexts, or to advanced stages of CFL learning. Moreover, the Bias Index focused only on oral proficiency, reflecting the salience of spoken interaction in beginner classrooms. Future research should extend this framework to literacy and receptive skills, which may reveal different patterns of alignment and misalignment.

In sum, the study contributes both conceptually and methodologically: conceptually by reframing teacher perception as a mediating mechanism within FLP, and methodologically by introducing the Bias Index as a tool for measuring that mediation. By clarifying both its explanatory potential and its contextual limits, the study offers a pathway for future work to integrate home-school interaction more fully into theories of bilingual development. Conceptually, this extends FLP from a home-bound ideology-management-practice chain to a home-school mediated loop; methodologically, it makes that mediation measurable. The low alignment rate (29.7%), directional BI split by family type, and background-conditioned evaluations (Sections 4.2-4.4; Tables 2 and 4) show why similar home inputs produce divergent classroom trajectories once filtered by perception. BI is not a verdict on families; it is a lens that renders the interpretive layer empirically tractable.

### **Future research directions**

Building on the findings and limitations of this study, several directions emerge for future research. These directions highlight the need to deepen the analysis of teacher perception as a mediating mechanism and to broaden the contexts in which it is studied.

First, longitudinal research is needed to trace how home–school interactions evolve over time. The current study captured teacher perceptions and family practices at a single point, offering only a snapshot of alignment and misalignment. Yet parental management strategies and teacher judgments are dynamic, often shifting as children grow, as school expectations change, and as family resources fluctuate. A longitudinal design could reveal how cycles of perception, feedback, and adjustment accumulate across months or years, showing whether early misclassifications have lasting effects or whether they are gradually corrected through ongoing interaction.

Second, comparative studies across different sociolinguistic contexts would enrich the explanatory scope of this model. The data here were drawn from Dublin, where Chinese is a minority language taught in supplementary schools. In public school systems, or in regions where Chinese has higher institutional visibility, the weight of teacher perception may differ. Similarly, comparing CFL contexts with other heritage or minority language programs (e.g.,

Polish in the UK, Arabic in France) could test whether perception bias follows universal patterns or is shaped by language-specific ideologies and resources. Such cross-context research would allow for a more generalizable understanding of how teachers mediate between family practices and learner outcomes.

Third, future work could explore how digital tools and AI-mediated assessment reshape teacher perception. As classroom platforms increasingly integrate automated feedback, speech recognition, and portfolio tracking, teachers may gain new anchors for judging input and proficiency. These tools could reduce reliance on surface heuristics, but they also introduce new risks of algorithmic bias or overstandardization. Investigating how teachers interpret and integrate digital evidence—whether it supports, challenges, or reinforces existing biases—would extend the scope of perception research into technology-mediated learning.

Taken together, these directions suggest that the study of teacher perception is not confined to immediate classroom heuristics but extends into longer timescales, broader contexts, and emerging digital infrastructures. Future research along these lines can strengthen the explanatory power of the expanded FLP framework and provide teachers with more robust tools for recognizing, and productively mediating, the language resources that children bring from home.

### **Conclusion**

This study examined how Chinese language teachers in Dublin perceive students' home language practices and how these perceptions shape classroom instruction. Teachers often relied on observable classroom heuristics—such as oral fluency, handwriting, and participation—to infer home input. While these judgments matched parental reports in about one-third of cases ( $\approx 30\%$ ), systematic mismatches were evident. Overestimation was common among heritage learners, while quieter mixed-heritage students were frequently underestimated. Teacher background also mattered: heritage teachers showed more tolerance for hybrid practices, whereas native-speaker teachers applied stricter monolingual standards. These findings highlight that teacher perception is not neutral but actively structures how learners are categorized and supported.

Theoretically, the study positions teacher perception as a mediating layer between family practices and learner outcomes, extending Spolsky's (2004) tripartite model by incorporating a school-based interpretive dimension. The introduction of a Bias Index provides a replicable way to capture mismatches, with potential application in other multilingual contexts. This operationalization moves perception from an implicit assumption to a variable that can be systematically analyzed, linking family language policy to broader theories of teacher agency (Priestley et al., 2015, Li & Liang, 2025).

Practically, the findings point to the need for professional development that helps teachers recognize potential biases, calibrate scaffolding strategies, and maintain balanced communication with families. Future research should broaden the scope to larger and more diverse contexts, trace how perception biases evolve over time, and integrate classroom observation with family ethnography. In addition, digital platforms and AI-assisted tools deserve exploration as potential mediators of teacher perception, particularly in settings where direct home—school communication is limited. Such directions would both strengthen the explanatory power of FLP frameworks and provide teachers with actionable strategies for fostering more equitable classroom responses.

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# **Ethical Approval**

This study uses data originally collected as part of the first author's MA dissertation at University College Dublin. The extended analysis and interpretation presented in this article have not been previously published. The research received ethical approval from the UCD Human Research Ethics Committee (Reference: 100-HS-C-25-Li-Cao).

# **Appendices**

# Appendix 1

# **Teacher Questionnaire**

This questionnaire was used to collect teachers' perceptions of student performance, home language input, and classroom strategies based on students' family backgrounds.

Section 1: Background Information

- 1. How many years have you been teaching Chinese?
- 2. What types of students are in your class? (Select all that apply)
- □ Heritage
- □ Mixed-heritage
- □ Non-Chinese background
- 3. On average, how many hours of Chinese do you teach per week?

Section 2: Student Performance by Family Background

Please rate the general performance of students from each background (1 = very weak, 5 = verystrong):

| Skill               | Heritage | Mixed-heritage |
|---------------------|----------|----------------|
| Listening           |          |                |
| Speaking            |          |                |
| Reading             |          |                |
| Writing             |          |                |
| Class participation |          |                |
| Homework completion |          |                |

Section 3: Language Input and Home Influence

- 1. Can you usually tell if a student's family uses Chinese at home?
- 2. Do you think home Chinese use correlates with classroom performance? Please explain. Section 4: Observations and Suggestions
- 1. What are the main strengths and challenges for mixed-heritage learners in your view?
- 2. How important do you think family support is in Chinese learning?
- 3. Any suggestions or observations you'd like to share with parents or researchers?

# Appendix 2

# **Interview Protocol with Analytical Variable Mapping**

| Interview Question   | Analytical Variable / Code   |  |
|--|------------------------------|--|
| 1. How do you usually estimate students' Chinese proficiency or input level? | P1: Perceived input quantity |  |

| 2. What cues or behaviors do you rely on to infer a student's language background?                       | P2: Input inference strategies                      |  |
|--|---|--|
| 3. Do you distinguish between students from Chinese-speaking families and others?                        | P3: Learner classification heuristics (typecasting) |  |
| 4. How does a student's family background influence your teaching decisions?                             | T1: Perceived impact of home language practice      |  |
| 5. Can you give examples of how you adapt instruction for different student types?                       | T2: Instructional response / scaffolding strategies |  |
| 6. Are there any challenges or uncertainties in judging students' home language use?                     | P4: Input ambiguity and teacher uncertainty         |  |
| 7. Have you ever changed your teaching approach based on what you learned about a family's language use? | T3: Adaptive teaching behaviors                     |  |
| 8. Do you think your perceptions of students' family input are usually accurate?                         | R1: Teacher self-reflection and perceived bias      |  |
| 9. In your experience, do home language practices correlate with classroom performance?                  | R2: Input–achievement correlation perception        |  |
| 10. What kind of support or training do you think teachers need in this regard?                          | R3: Suggested teacher development pathways          |  |

Note: P = Perception-related variables; T = Teaching response strategies; R = Reflection and implications.

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