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Students' Perceptions of Note-taking as a Listening Comprehension Strategy: A Mixed-methods Study of Vietnamese EFL Majors

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ABSTRACT: Note-taking is widely regarded as a critical strategy for supporting second-language listening comprehension, yet little is known about how Vietnamese English-major students themselves perceive its value and difficulty. This article investigated the perceptions of 150 third-year English majors at the Industrial University of Ho Chi Minh City (IUH) regarding the benefits and challenges of note-taking during English listening tasks. A mixed-methods design that combined a structured questionnaire with semi-structured interviews with 5 students was used thoroughly. Descriptive statistics showed that note-taking is a near-universal habit (83% of students reported taking notes "always" or "often"), predominantly practised with pen and paper (62%) rather than digital devices. Students overwhelmingly perceived note-taking as beneficial for comprehension, memory retention, information organisation, inferencing, test performance and sustained attention with agreement rates ranging from 84% to 93% across the measured benefits. At the same time, a substantial minority reported difficulties related to fast speech rate, unfamiliar vocabulary, divided attention and messy handwriting, particularly regarding missing subsequent information (29% agreement) and message overload at high speech rates (31% agreement). Interview data illuminated the cognitive and strategic mechanisms behind these patterns including code-switching, selective attention to discourse markers and compensatory strategies such as momentarily abandoning notes to preserve comprehension. The findings are interpreted through established learning theories, and practical implications for explicit note-taking instruction in EFL listening classrooms are discussed.

KEYWORDS: EFL listening classrooms, English-major students, listening comprehension, note-taking, perceptions.

1. INTRODUCTION

Within the field of second language acquisition (SLA), listening comprehension is no longer regarded as a passive skill in which learners simply receive an incoming signal. It is understood as an active, constructive and cognitively demanding process (Vandergrift, 2002). For much of the twentieth century, listening received comparatively little pedagogical attention because it was widely assumed to develop naturally, without explicit instruction (Aponte-de-Hanna, 2012). Contemporary language-learning theory, however, treats listening as the primary channel through which learners access comprehensible input, positioning it as foundational to the development of the other three language skills (Hunsaker, 1990; Ozbay, 2005). Successful listening comprehension requires the simultaneous integration of situational knowledge, linguistic knowledge and background knowledge (Kılıçkaya & Çokal-Karadaş, 2009), a demand that is intensified by the transient nature of spoken input. Once uttered, speech disappears almost instantly, leaving only a brief trace in short-term memory (Osada, 2004). Learners frequently report that although they understand a spoken message in the moment, they are unable to retain its content once the audio has ended (Hayati & Jalilifar, 2009).

Note-taking has long been proposed as a strategic response to this transience. From an educational psychology perspective, note-taking serves two complementary functions such as an encoding function, whereby the physical act of writing forces learners to process input more deeply and an external storage function, whereby the resulting written record serves as an accessible, reviewable trace of the original message (Di Vesta & Gray, 1973). Rather than transcribing speech verbatim, effective note-takers filter, reorganise and re-encode information in a more economical form (Babatunde, 2005), a process that appears to deepen comprehension at the moment of listening itself (Salame & Thompson, 2020) while also functioning as a "second memory" that can be consulted well after the original input has faded (Kiewra, 1987, 1989). Empirical work has repeatedly linked active note-taking and subsequent note review to superior listening comprehension outcomes relative to passive listening alone (Kiewra et al., 2007; Kitjaroonchai et al., 2025).

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At the same time, the simultaneous demands of listening and writing create a considerable cognitive burden. Successful note-taking during listening requires learners to listen, comprehend, select, transcribe and periodically review information in close succession (Suritsky & Hughes, 1991), and because comprehension is the foundation of this cycle, any breakdown in listening comprehension will immediately compromise the quality of the resulting notes (Kılıçkaya & Çokal-Karadaş, 2009). Second-language listeners face an additional layer of difficulty, since they must also translate, identify key ideas, generate abbreviations and write in real time while the audio continues uninterrupted (Carrell et al., 2002). Under these conditions, cognitive overload is common, and many learners fall behind either because their writing speed cannot keep pace with incoming speech or because unfamiliar vocabulary and rapid delivery exceed their processing capacity (Al-Musalli, 2015; Hartley, 2002).

A further complication concerns pedagogical practice. Some educators argue that providing learners with outlines or pre-taught vocabulary before a listening task reduces cognitive strain and allows attention to be directed towards comprehension (Stefanou et al., 2008), whereas others caution that such scaffolding may foster passivity and forestall the development of independent note-taking competence. The increasing use of laptops and smartphones for note-taking adds a further dimension to this debate. While digital tools can make organisation easier, they may also introduce new sources of distraction and encourage verbatim transcription rather than selective, meaning-focused encoding (Bui et al., 2013; Stefanou et al., 2008; Mueller & Oppenheimer, 2014).

Despite its evident importance, note-taking during listening is rarely taught explicitly and systematically in many EFL contexts. Most learners instead rely on self-taught habits that prove inadequate when confronted with long or linguistically demanding listening passages (Van der Meer, 2012). This gap is particularly salient in Vietnam, where English proficiency and listening comprehension in particular are treated as a graduation requirement and a prerequisite for participation in English-medium instruction. Existing Vietnamese research on listening has focused predominantly on test outcomes and overall proficiency, leaving the strategic and affective dimensions of the listening process comparatively unexamined. In particular, little is known about how Vietnamese English-major students themselves perceive the value of note-taking, which specific techniques they favour (for example, symbols, first-language glosses, or digital tools) and what obstacles they encounter while attempting to take notes in real time. Understanding these perceptions matters because learner beliefs are known to shape strategic behaviour during task performance (Marashi & Sadinezhad, 2022). Learners who do not perceive note-taking as valuable, or who find it excessively stressful, are unlikely to adopt or persist with the strategy, to the probable detriment of their listening development and academic outcomes.

Prior research on note-taking and listening has also been geographically and methodologically uneven. Much of the empirical literature originates from learners in Western or East Asian contexts, while the small body of Vietnamese-language research on this topic has tended to prioritise translation-oriented or non-English-major populations, leaving English-major students engaged in core listening coursework comparatively understudied. Findings across contexts are, moreover, not entirely consistent. In particular, some studies report clear listening comprehension gains associated with note-taking, whereas others suggest that the physical demands of writing can themselves distract from real-time comprehension. Much of this literature also relies heavily on quantitative outcome measures, offering only limited insight into the lived, strategic experience of note-taking from the learner's own perspective.

The article addresses these gaps by investigating the perceptions of third-year English-major students at the Industrial University of Ho Chi Minh City (IUH) regarding note-taking as a strategy for English listening comprehension. Two research objectives guided the study. The first is to explore students' perceptions of the benefits associated with note-taking during listening tasks and the second is to investigate students' perceptions of the challenges they encounter when taking notes while listening. These objectives were operationalised through two research questions: (1) What are students' perceptions of the benefits of note-taking in improving their listening comprehension skills? And (2) What are students' perceptions of the challenges of note-taking during listening comprehension?

By combining quantitative survey data with qualitative interview accounts, this article aims to provide a more complete picture of how note-taking functions cognitively, strategically, and affectively for Vietnamese EFL learners at a critical stage in their academic development. The findings are intended to inform both theoretical understanding of strategic listening behaviour and practical pedagogical decisions regarding the explicit teaching of note-taking skills in EFL listening classrooms.

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The significance of this study is twofold. Theoretically, it extends the application of established cognitive frameworks (Cognitive Load Theory, Dual Coding Theory and Information-Processing Theory) to a learner population that has received comparatively little empirical attention, thereby testing the extent to which mechanisms documented primarily among Western and East Asian learners generalise to Vietnamese EFL majors. From a practical standpoint, identifying the specific factors that enhance or hinder note-taking in this context provides valuable insights. These findings can help instructors design more targeted listening curricula while allowing students to bridge the gap between their current habits and evidence-based practices. In this sense, the article is intended not merely to describe existing perceptions but to provide a concrete evidential basis for pedagogical change.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. Listening comprehension

Listening comprehension can be defined as an active process of constructing meaning from spoken input, requiring the simultaneous application of situational, linguistic and background knowledge (Kılıçkaya & Çokal-Karadaş, 2009). Unlike reading, in which the text remains available for re-inspection, spoken input is transient and typically cannot be replayed in real classroom or testing conditions, which places a heavy load on working memory (Byrnes, 1984; Osada, 2004). Learners commonly report a range of difficulties, including unfamiliar vocabulary and accents, rapid speech rate and the sheer density of incoming information (Goh, 2000; Hamouda, 2013; Hasan, 2000). Because comprehension and memory decay operate on similar timescales, many learners understand a message adequately while it is being delivered but are unable to reconstruct it moments later, a pattern that has motivated sustained interest in compensatory strategies such as note-taking (Hayati & Jalilifar, 2009).

Listening comprehension strategies more broadly have been classified into cognitive, metacognitive and socio-affective categories (O'Malley & Chamot, 1990), with note-taking generally treated as a cognitive strategy that interacts closely with metacognitive processes such as monitoring and selective attention (Vandergrift & Tafaghodtari, 2010). Given that listening underpins subsequent language production and academic performance, strategies that mitigate its transience, such as note-taking, have attracted particular pedagogical interest (Rost & Candlin, 1991).

2.2. Note-taking

Note-taking is commonly defined as the process of recording information selectively while listening or reading, with the dual aim of supporting immediate comprehension and creating a durable external record for later use (Kiewra, 1989; Ozbay, 2005). Unlike verbatim transcription, effective note-taking requires learners to condense, reorganise and often paraphrase incoming information (Piolat et al., 2005), a demand that is intensified in a second language because encoding, translation and transcription must occur almost simultaneously (Boch & Piolat, 2005).

Note-taking tools have diversified considerably with the spread of digital technology. Although laptops and note-taking applications are now widely available, a substantial body of research suggests that handwritten notes on paper are frequently associated with deeper processing and better recall than typed notes, largely because typing encourages near-verbatim transcription rather than the selective paraphrasing associated with longhand writing (Mueller & Oppenheimer, 2014; Morehead et al., 2019). Digital tools nonetheless offer organisational affordances such as easy editing, searching and multimedia annotation that paper cannot easily replicate (Van Wyk & Van Ryneveld, 2018), and typing can support faster capture of information for learners with strong keyboarding skills (Jeong et al., 2015). The relative advantages of paper and digital note-taking therefore appear to depend on the specific demands of the listening task and the learner's own habits and preferences (Wollscheid et al., 2016).

In terms of strategy, commonly documented note-taking techniques include the identification and separation of main ideas, the use of abbreviations and symbols to increase writing speed, attention to discourse markers signalling topic shifts, the use of mind maps or outlines to represent hierarchical relationships between ideas and the selective use of the first language to save time when an equivalent term is more economical (Gur et al., 2013; Kiong et al., 2012). More elaborate strategies, such as paraphrasing in one's own words or constructing detailed mind maps, are cognitively demanding and time-consuming and are therefore less commonly used under the time pressure of real-time listening than faster, lower effort techniques (Tee et al., 2014; Tucker et al., 2010).

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2.3. The role of note-taking in listening comprehension

Notes are theorised to support listening comprehension through several interacting mechanisms. First, the physical act of recording information demands active engagement, requiring learners to continuously judge what is important enough to write down. This selective attention appears to reduce mind-wandering and sustain concentration across extended listening passages (Carrell, 2007). Second, once created, notes function as an external memory store that can be consulted after the original audio has ended, substantially reducing the burden on fallible short-term memory (Kiewra et al., 2007). Third, the process of organising notes, whether through spatial layout, symbols or brief outlines, can help learners distinguish superordinate ideas from supporting detail, a skill directly relevant to the comprehension-question formats common in listening assessments (Titsworth & Kiewra, 2004).

At the same time, extensive research has documented the cognitive challenges of simultaneous listening and writing. Because writing speed is inherently slower than speech, learners who attempt to take overly detailed notes risk falling behind the incoming audio stream (Peverly, 2006). This resulting time lag can cause them to miss subsequent information entirely (Flowerdew & Miller, 1992). Furthermore, dividing attention between the notebook and the listening source frequently leads to comprehension breakdowns. This occurs because the visual attention required for writing directly competes with the auditory attention needed to process the speaker's words (Al-Musalli, 2015). International comparative studies further suggest that most learners, regardless of their first-language background, receive little explicit training to balance these competing demands. Consequently, they are left to develop idiosyncratic and often inefficient strategies through trial and error (Dunkel & Davy, 1989).

2.4. Theoretical framework

This article draws on three complementary cognitive theories to interpret the relationship between note-taking and listening comprehension. They are Cognitive Load Theory (CLT), Dual Coding Theory (DCT) and Information-Processing Theory (IPT).

Cognitive Load Theory (Sweller, 1988), grounded in the well-established limitations of working memory (Baddeley, 1983), holds that instructional tasks must be designed to avoid overwhelming learners' limited processing capacity. In an EFL listening classroom, learners are required to process pronunciation, vocabulary, syntax and discourse structure simultaneously while also producing a written record, a configuration that places considerable strain on working memory, particularly for non-native listeners (Piolat et al., 2005). Selective, well-organised note-taking is theorised to reduce this load by allowing learners to offload information that would otherwise need to be retained mentally, whereas disorganised or overly detailed notes may paradoxically increase cognitive strain (Al-Kadi, 2019). CLT further implies that note-taking skills benefit from explicit, guided instruction rather than incidental acquisition since unguided discovery approaches tend to be less effective for cognitively demanding tasks (Kirschner et al., 2006).

Dual Coding Theory (Paivio, 1979) complements CLT by addressing how learners might expand, rather than merely protect, their limited processing capacity. DCT proposes that verbal and non-verbal (visual) information are processed through partially independent channels, such that information encoded in both channels simultaneously is more likely to be retained than information encoded verbally alone. Note-taking strategies that incorporate symbols, abbreviations, arrows and spatial organisation allow learners to represent spoken input visually as well as verbally, thereby engaging both processing channels and potentially strengthening subsequent recall.

Information-Processing Theory (Atkinson & Shiffrin, 1968) provides a complementary account of how information moves from initial perception through short-term memory into long-term storage. Because spoken information decays rapidly once attention shifts away from it, IPT suggests that external storage devices, in this case, written notes, play a critical role in preventing loss of information before it can be consolidated. Within this framework, note-taking functions as a rehearsal and storage mechanism through recording key ideas, converting them into personally meaningful wording and organising them under clear headings. All of them support the transfer of information into more durable memory, which learners can later retrieve during review or testing.

Taken together, these three theories suggest that note-taking supports listening comprehension by protecting limited working memory (CLT), enabling richer encoding through dual verbal-visual channels (DCT) and providing external storage that compensates for the transience of spoken input (IPT). This integrated framework provided the theoretical basis for the present investigation into Vietnamese EFL students' perceptions of both the benefits and challenges of note-taking.

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2.5. Research gap

Most international studies on note-taking and listening comprehension have been conducted with learners in Western or East Asian educational contexts, while Vietnamese research on the topic has generally focused on translation-oriented tasks or non-English-major populations, leaving a relative gap concerning English-major students engaged in core listening coursework. Findings across the wider literature are also somewhat inconsistent. Some studies report clear gains in comprehension and test performance associated with note-taking, while others emphasise its potential to distract from real-time listening. Methodologically, much prior work has relied primarily on quantitative outcome measures, offering limited insight into the strategic reasoning and lived difficulties that underlie observed patterns.

Within Vietnam specifically, existing studies on note-taking have tended to examine either non-English-major populations completing general listening courses or to use note-taking as an instructional intervention aimed at raising overall listening scores, rather than as an object of study in its own right (Nguyen, 2011; Nguyen & Nguyen, 2020). Consequently, comparatively little is known about how students who are themselves specialising in English and who are therefore likely to encounter increasingly demanding listening tasks, including consecutive interpreting, translation and English-medium content courses, perceive and manage the specific cognitive and linguistic demands of note-taking. Because listening competence is both an academic requirement and a professional prerequisite for these students, understanding their perceptions is of particular practical urgency. The present article addresses these gaps by employing a mixed-methods approach to examine the perceived benefits and challenges of note-taking among third-year English majors at IUH. Ultimately, this investigation aims to identify the specific factors that render note-taking an effective listening strategy within this Vietnamese EFL context.

3. METHODOLOGY

3.1. Research design

This article adopted a mixed-methods design combining a structured questionnaire with semi-structured interviews to investigate students' perceptions of note-taking during English listening comprehension. Following Creswell's (2002) principle, the research design of this article was strictly determined by its research questions. Consequently, a single-method approach was deemed insufficient, as investigating note-taking requires capturing both general behavioral patterns and the underlying cognitive and affective reasoning. The quantitative strand, comprising questionnaire responses from 150 students, was used to establish the frequency of specific note-taking strategies and the overall distribution of perceived benefits and challenges, thereby providing statistical breadth and a degree of generalisability within the sampled population. The qualitative strand, comprising interviews with 5 students, was designed to explain the reasoning, strategic choices and personal experiences behind the quantitative patterns. The rationale for combining both strands rests on principles of triangulation and complementarity (Greene et al., 1989; Teddlie & Tashakkori, 2011). The quantitative data indicate what patterns exist, while the qualitative data help explain why those patterns occur, together yielding a more complete account than either strand could provide alone.

3.2. Research context and participants

The study was conducted at IUH, where English majors must develop advanced communicative competence, including listening skills, to compete in the labor market. The participants comprised 150 third-year English-major students. This cohort was selected through convenience sampling based on their accessibility, enrollment in core listening courses and willingness to participate. Third-year students were considered an appropriate population because, by this stage, they had accumulated substantial experience with university-level listening tasks and were therefore well positioned to reflect meaningfully on their own note-taking practices. All 150 participants completed the questionnaire, and 5 of these students were additionally selected for semi-structured interviews to provide richer qualitative insight into the quantitative patterns.

3.3. Research instruments

Data were collected using two instruments such as a structured questionnaire and semi-structured interviews. Self-report questionnaires are considered particularly appropriate for assessing internal cognitive and affective processes such as perceived benefit and difficulty, that cannot be directly observed (Fredricks & McColskey, 2012). The questionnaire was organised into two sections. The first section collected demographic information and used a frequency scale to measure how often participants employed eleven specific note-taking techniques, adapted from the framework developed by Gur et al. (2013). The second section

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employed a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree," comprising ten items addressing perceived benefits of note-taking (adapted from Episiasi et al., 2025; İpek, 2018) and twelve items addressing perceived challenges such as speech rate and unfamiliar vocabulary (adapted from Episiasi et al., 2025).

Semi-structured interviews were conducted with five students to elicit qualitative insight into their personal experiences, strategic choices and difficulties. Semi-structured interviewing is well suited to exploring individual perspectives in depth while retaining sufficient structure for cross-case comparison (Creswell, 2002; Gill et al., 2008; Qu & Dumay, 2011). The interview guide used open-ended questions concerning how specific note-taking strategies supported comprehension of complex audio material, the principal processing difficulties participants encountered, their language-choice preferences (for example, the use of Vietnamese abbreviations) and their suggestions for classroom support.

3.4. Validity and reliability

Content and construct validity were addressed by grounding the questionnaire directly in established theoretical frameworks and prior empirical instruments, ensuring that all major dimensions of the research problem, specific techniques, perceived benefits and perceived challenges were represented (Furwana, 2019). The inclusion of interview data alongside the survey provided a further layer of validation, in that qualitative accounts corroborated and elaborated on the quantitative patterns observed. To ensure reliability, the article maintained strict consistency across both instruments by administering a uniform five-point Likert scale for the questionnaire and utilizing a standardized set of open-ended questions for the interviews (Ahmed & Ishtiaq, 2021). Conducting these procedures under comparable conditions successfully minimized unsystematic variation in the data collection process.

3.5. Research procedures

The questionnaire was piloted with 10 students to eliminate ambiguous items and refine wording before full deployment. The finalized survey was distributed via Google Forms to the 150 third-year English majors, who completed it anonymously. Similarly, the interview guide was piloted with 2 students before the main qualitative phase. For the primary data collection, 5 students participated in individual, semi-structured face-to-face interviews lasting five to seven minutes each. These sessions took place in a quiet, private room on campus and were audio-recorded with a backup device. Participants received a brief overview of the study's purpose and a guarantee of confidentiality prior to engagement.

3.6. Data collection and analysis

Participation in both the survey and the interviews was entirely voluntary, and participants retained the right to withdraw at any stage. All responses and transcripts were anonymised to protect participant confidentiality. Quantitative data collected via Google Forms were transferred to Microsoft Excel where descriptive statistics including counts, percentages and mean scores were computed for the eleven note-taking techniques, ten perceived benefits, and twelve perceived challenges, and the results were visualised using tables and charts. Qualitative data from the 5 interviews were transcribed verbatim and analysed thematically. In particular, transcripts were read repeatedly to identify recurring patterns, responses were grouped according to the corresponding survey constructs and illustrative quotations were selected to triangulate and elaborate on the quantitative findings.

4. FINDINGS AND DISCUSSION

4.1. Note-taking habits and strategies

Note-taking emerged as a well-established habit among the surveyed students. In particular, 59% reported taking notes "always" during listening practice and a further 24% reported doing so "often," together accounting for 83% of the sample, while only 16% did so "sometimes" and a negligible 1% "rarely." This distribution suggests that, for the great majority of participants, note-taking functions as a routine strategic behaviour rather than an occasional test-preparation tactic.

Regarding tools, traditional pen and paper remained clearly dominant, used by 62% of participants, followed by smartphones (29%), laptops or tablets (5%), and a combination of paper and digital tools (4%). This preference for paper is consistent with prior findings that handwriting affords greater flexibility and speed than typing under the real-time pressure of listening tasks (Mueller & Oppenheimer, 2014), while the relatively high use of smartphones suggests that convenience continues to shape tool choice even among students who ultimately prefer paper-based recording.

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Table 1 summarises the reported use of eleven specific note-taking strategies. Overall, students clearly favoured strategies that reduced cognitive and time demands over more elaborate techniques. Identifying the speaker's tone and attitude (74.7%) and writing down only the most important content words (74.0%) were the two most frequently reported strategies, followed closely by the use of abbreviations and symbols (72.7%) and leaving space for additional information to be added later (70.0%). Attending to discourse markers (66.0%) and separating and organising main ideas (60.0%) were also widely used, whereas more cognitively demanding strategies paraphrasing in one's own words (32.7%), recording sufficient examples (18.7%), constructing mind maps or outlines (16.0%), and using first-language translation (10.0%) were considerably less common. This pattern indicates a general preference for fast, low-effort techniques that minimise interference with the ongoing task of listening, a preference that aligns closely with the resource-conservation logic predicted by Cognitive Load Theory (Sweller, 1988).

Table 1. Reported use of note-taking strategies (N = 150)

Note-taking strategies	Users (%)
Identifying speaker's tone and attitude	74.7
Writing down only the most important content words	74.0
Using abbreviations and symbols	72.7
Leaving space for additional information	70.0
Listening for signal words and expressions	66.0
Separating and organising main ideas	60.0
Identifying speaker's topic shifts and returns	50.7
Using own words (paraphrasing)	32.7
Noting down sufficient examples	18.7
Creating a mind map or outline	16.0
Using translation or brief L1 words	10.0

4.2. Research Question 1: Perceived benefits of note-taking

Across all ten measured benefit items, agreement ("Agree" plus "Strongly Agree") ranged from 84% to 93%, indicating a strongly positive overall perception of note-taking's contribution to listening comprehension. The highest levels of agreement were recorded for answering comprehension questions more easily and quickly (93%), maintaining focus and avoiding distraction (89%), keeping pace with the speaker (88%), understanding audio content more thoroughly (91%), distinguishing main ideas from minor details (90%), remembering important details (90%), and obtaining better grades (87%); slightly lower but still substantial agreement was recorded for organising information logically (84%), reviewing material after class (90%), and inferring the meaning of missed or unfamiliar segments (88%).

Table 2. Students' perceived benefits of note-taking (N = 150, % Agree + Strongly Agree)

Perceived benefits	Agreement (%)
Answering comprehension questions more easily and quickly	93
Understanding the information from the audio better	91
Distinguishing main ideas from minor details	90
Remembering important details from the audio	90
Reviewing materials after class	90
Maintaining focus and avoiding distractions	89
Guessing the meaning of missing sections	88
Keeping pace with the speaker	88
Getting better grades	87
Organising information logically	84

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These quantitative patterns were substantiated by the interview data. Regarding comprehension and memory, participants described notes as functioning as an external memory aid that compensated for the transience of spoken input. In particular, one participant explained that for longer recordings, "I easily lose track if I just listen. Writing down specific names, dates, or keywords gives me a visual map, so when the questions pop up, I can double-check my notes instead of just guessing based on a fading memory" (S1). Another participant similarly described notes as "a backup memory," noting that "details at the beginning might relate to questions at the end, so notes help me connect the dots easily" (S4). These accounts closely mirror the encoding and external-storage functions proposed by Di Vesta and Gray (1973) and Kiewra (1989) and align with the broader finding that active note-takers tend to outperform passive listeners on comprehension measures (Gur et al., 2013; Hale & Courtney, 1994).

With respect to organisation and inferencing, participants described notes as a tool for managing competing or contrasting information in real time. For example, "It helps me organise the core ideas. Complex tasks usually have traps or contrasting opinions, so note-taking allows me to compare the options logically before picking the answer" (S2). When specific words or short segments were missed, students reported using surrounding notes as contextual anchors for inference, for instance, by "look at the keywords before and after it in my notes to guess what fits the context" (S3), a strategy consistent with prior accounts of note-taking as a scaffold for context-based comprehension (Carrell et al., 2002; Sweller, 2011).

Regarding test performance and attentional control, participants linked note-taking to both practical test-taking efficiency and psychological composure. One participant noted that during moments of difficulty, deliberately pausing note-taking allowed comprehension to be prioritised: "I tried to take a deep breath and just listen without writing anything for a bit to catch up" (S2), a strategy that illustrates the kind of self-regulated, flexible strategy deployment associated with more successful listeners (Vandergrift & Tafaghodtari, 2010). Participants also valued notes as a durable resource for post-class review, with one participant proposing that instructor provided templates would further enhance this function. For instance, "I think the teacher should give us templates or outline sheets with some blanks first, to guide us on how to structure notes before making us do it on blank paper" (S5), echoing prior calls for more structured note-taking scaffolds in listening instruction (Durukan & Maden, 2010; Sahin et al., 2015).

4.3. Research Question 2: Perceived challenges of note-taking

Challenge items produced a more heterogeneous pattern than the benefit items, reflecting genuine variation in students' experiences of difficulty. A clear majority of students demonstrated strong self-regulation in the presence of potential distractions. Specifically, the vast majority rejected the idea that note-taking interfered with immediate understanding (75%), distracted them from upcoming information (75%), or led them to doodle and write irrelevant content (70%). However, considerably more divided responses were recorded for challenges connected to processing speed and linguistic difficulty. Only 43% of participants disagreed that they missed subsequent information while writing, while 29% agreed that this was a problem and 28% remained neutral. A similarly divided pattern was found for coping with fast speech rate, where 33% remained neutral, 36% disagreed, and 31% agreed that they found it difficult to keep up. Specific barriers included vocabulary, accents, and technical terminology (reported by 29% of participants), followed closely by confusion and losing track of the audio (23%). Difficulties more directly tied to poor note-taking execution, writing full sentences verbatim (18%), producing excessively messy notes (18%), and consequent hindrance of accurate question-answering (20%) were comparatively less prevalent but still affected a non-trivial minority of the sample.

Table 3. Students' perceived challenges of note-taking (N = 150, % Agree + Strongly Agree)

Perceived challenges	Agreement (%)
Difficulty keeping up with fast speech rate	31
Missing the next important information	29
Vocabulary, accents, or technical terms as barriers	29
Getting confused and losing track of the audio	23
Note-taking difficulties hindering accurate answering	20
Notes being too messy	18
Writing full sentences word-for-word	18
Wasting time on spelling or translation	17

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Perceived challenges	Agreement (%)
Distracting from upcoming information	12
Struggling to distinguish main ideas from minor details	19
Doodling or writing irrelevant content	13
Interference with immediate understanding	10

Interview accounts clarified the mechanisms underlying these more divided patterns. Several participants described an inherent processing lag between listening and writing. In particular, "My brain can't process the incoming words fast enough while my hand is still writing the previous sentence. It feels like a delay in my head" (S1). This kind of dual-task interference is consistent with the resource-competition mechanism central to Cognitive Load Theory (Sweller, 1988) and with prior findings that speech rate is a major determinant of note-taking difficulty (Flowerdew & Miller, 1992; Al-Musalli, 2015). Divided visual and auditory attention was similarly implicated. One participant explained that "missing the pronunciation of the next word while I'm looking down at my notebook" caused an immediate drop in comprehension (S5), illustrating how the physical orientation required for writing can momentarily disrupt auditory processing.

Linguistic difficulty compounded these processing pressures. Participants reported adopting code-switching strategies to reduce writing time when Vietnamese equivalents were more economical than English. For instance, "I actually use a mix of Vietnamese and English shortcuts. If a Vietnamese word is shorter, like 'về' instead of 'about', I'll write that instead. Whatever is faster wins" (S4). Other participants combined English keywords with symbolic shorthand, such as arrows to denote cause-and-effect relationships (S1), reflecting the kind of dual verbal-visual encoding anticipated by Dual Coding Theory (Paivio, 1979). These strategic adaptations echo prior observations that Vietnamese learners often receive little formal training in note-taking and must therefore develop compensatory techniques on their own (Nguyen, 2011; Nguyen & Nguyen, 2020), a pattern broadly consistent with international findings that many learners, regardless of first-language background, are left to acquire note-taking competence through unguided trial and error (Dunkel & Davy, 1989).

Execution-related difficulties such as messy handwriting, verbatim transcription, and consequent difficulty answering questions accurately were linked by participants to the pressure of writing under time constraints rather than to a lack of understanding of what should be recorded. For example, "When I write too fast, I can't even read my own notes when answering the questions later, which is pretty annoying" (S3). Similarly, one participant described how accumulated processing failures during a high-stakes assessment produced acute anxiety. For example, "It happened in my midterm exam. I felt really anxious, and my mind went blank for a few seconds. After that, I tried to take a deep breath and just listen without writing anything for a bit to catch up" (S2). These accounts suggest that, for a meaningful minority of learners, note-taking under exam conditions can generate a self-reinforcing cycle of processing breakdown and anxiety, a pattern that resonates with prior warnings that note-taking, if poorly managed, can itself become a source of cognitive overload rather than a means of reducing it (Boyle, 2010; Lewis & Reinders, 2003; Ezekeke et al., 2022).

4.4. Integrative discussion

Considered together, the quantitative and qualitative findings suggest that note-taking functions, for the large majority of students in this sample, as a well-internalised and broadly beneficial strategy that supports comprehension, memory, organisation, inferencing and test performance, consistent with the theoretical mechanisms proposed by Cognitive Load Theory, Dual Coding Theory and Information-Processing Theory. Students' strong preference for fast, low-effort strategies attending to tone, recording only key words, using abbreviations and leaving space for later additions can be understood as an adaptive response to the limited processing capacity described by CLT. Rather than attempting exhaustive transcription, students economise on cognitive resources by selectively encoding the information most likely to support later comprehension and recall. This pattern parallels earlier findings that note-takers who actively filter, rather than transcribe, incoming speech tend to achieve superior comprehension outcomes (Gur et al., 2013; Hale & Courtney, 1994; Siegel, 2024).

At the same time, the more divided responses concerning speed-related and linguistic challenges indicate that the benefits of note-taking are not uniformly accessible to all learners under all conditions. When speech rate exceeds a learner's writing and processing capacity, the same strategy that ordinarily supports comprehension can instead precipitate a time lag that causes subsequent information to be missed, echoing earlier warnings that rapid delivery is a principal determinant of note-taking

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difficulty (Flowerdew & Miller, 1992; Boyle, 2010). The compensatory strategies reported by participants momentarily abandoning notes to prioritise listening, adopting Vietnamese-English code-switching, and relying on surrounding notes for contextual inference suggest a degree of metacognitive flexibility that is itself consistent with more successful listening strategy use (Vandergrift & Tafaghodtari, 2010), even though these strategies emerged largely through self-directed trial and error rather than explicit instruction.

The near-universal preference for pen-and-paper note-taking over digital alternatives, despite the wide availability of smartphones and laptops, is also noteworthy. This preference aligns with research suggesting that handwriting supports more selective, meaning focused processing than typing, which tends to encourage close to verbatim transcription (Mueller & Oppenheimer, 2014; Morehead et al., 2019), and it suggests that, at least for real-time listening tasks, the practical advantages of paper flexibility of layout, speed of symbol use, and freedom from device-related distractions continue to outweigh the organisational conveniences offered by digital tools (Van Wyk & Van Ryneveld, 2018).

Many students have to rely on self-taught and inefficient note-taking strategies. Taken as a whole, these findings support the pedagogical argument also advanced by several interviewees that explicit instruction would highly benefit this group. Suggestions volunteered by participants modelling live note-taking on the board, teaching a standardised set of abbreviations and providing structured outline templates converge with prior recommendations that note-taking competence develops most reliably under guided instruction rather than unstructured discovery (Kirschner et al., 2006), and that concept-mapping or Cornell-style note-taking training can improve both comprehension and retention outcomes (Durukan & Maden, 2010; Sahin et al., 2015).

4.5. Pedagogical implications

The findings point to several concrete instructional implications for EFL listening courses of the kind offered at IUH. First, because students overwhelmingly rely on fast, low-effort strategies such as abbreviation use and tone monitoring, explicit instruction could usefully focus on refining rather than replacing these existing habits. For example, by teaching a shared repertoire of abbreviations and symbols so that idiosyncratic, self-invented shorthand does not become a source of later confusion when notes are reviewed. Second, given that the most frequently reported difficulties clustered around fast speech rate and the resulting time lag, listening courses could incorporate graduated-speed practice materials and short, low-stakes note-taking drills that build writing speed and selective-attention skills independently of high-stakes assessment pressure, directly addressing the concern raised by one participant that current classroom practice rarely isolates note-taking as a skill in its own right. Third, teachers might model their own note-taking live, for instance, by narrating and displaying an abbreviated transcript of a short audio clip on the board, making explicit the selection and abbreviation decisions that expert listeners perform largely automatically. Finally, given the students' strong and consistent preference for paper over digital tools, instructors should not assume that introducing note-taking applications will automatically improve outcomes. Any transition towards digital note-taking would need to be carefully scaffolded to avoid encouraging the verbatim-transcription tendency associated with typing (Mueller & Oppenheimer, 2014).

5. CONCLUSION

This article examined how third-year English majors at IUH perceive the benefits and challenges of note-taking as a strategy to enhance English listening comprehension. Drawing on questionnaire data from 150 students and interview data from 5 students, the findings indicate that note-taking is a deeply established, largely paper-based habit that the great majority of students perceive as beneficial across a wide range of dimensions, including comprehension, memory retention, information organisation, inferencing, sustained attention and test performance. At the same time, a meaningful minority of students continue to experience real difficulties, particularly when speech rate is high, vocabulary is unfamiliar or attention must be divided between listening and writing, difficulties that can, in some cases, precipitate anxiety and compromised test performance.

These findings offer empirical support, within a Vietnamese higher-education context, for the applicability of Cognitive Load Theory, Dual Coding Theory and Information-Processing Theory to the study of second-language note-taking, and they extend the existing literature by foregrounding the strategic reasoning and lived experience that underlie observed patterns of note-taking behaviour. Practically, the findings suggest that EFL listening instruction would benefit from the explicit teaching of note-taking skills, including standardised abbreviation systems, modelled live note-taking and structured outline templates, rather than leaving learners to develop these skills independently through trial and error. For students, the findings suggest that effective

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note-taking depends less on transcribing extensively than on selectively capturing key information in a form that can be quickly reviewed and interpreted later.

This article is not without limitations. First, the sample was drawn from a single cohort of third-year English majors at one university, using convenience sampling, which limits the generalisability of the findings to other learner populations or institutions. Second, all data on perceived benefits and challenges were self-reported through questionnaires and interviews. The study did not directly examine students' actual notes or link perceptions to objective listening-test performance. Third, although students' strong preference for paper-based note-taking was documented, the study did not closely examine the specific features or potential distractions associated with digital note-taking tools. Future research could usefully adopt experimental designs comparing the listening outcomes of students trained in specific note-taking systems against untrained comparison groups, incorporate analysis of students' actual note sheets alongside their test scores, and track the development of note-taking competence longitudinally as students progress from foundational to more demanding, specialised coursework such as interpreting and translation.

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