

## AUDITORY AND VISUAL LEARNING STYLES IN SECOND LANGUAGE VOCABULARY AND GRAMMAR ACQUISITION

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**Abstract.** The present conference thesis investigates the role of auditory and visual perceptual learning styles in second language (L2) vocabulary and grammar acquisition. Drawing on established theoretical frameworks in applied linguistics and cognitive psychology — including Reid's Perceptual Learning Style model, Mayer's Cognitive Theory of Multimedia Learning, and Paivio's Dual Coding Theory — the paper examines how individual differences in sensory processing preference shape the efficiency of lexical and grammatical knowledge development in English as a Foreign Language (EFL) learners. The study argues that both auditory and visual modalities contribute distinctively to L2 acquisition, and that a multimodal instructional approach yields optimal outcomes for learners across the perceptual preference spectrum.

**Key words:** learning styles, auditory learners, visual learners, second language acquisition, vocabulary acquisition, grammar acquisition, multimodal instruction.

**Annotatsiya.** Ushbu konferensiya tezisi ikkinchi tilni (L2) o'zlashtirishda so'z boyligi va grammatikani o'rganishda auditorial (eshitish) va vizual (ko'rish) idrok etish uslublarining o'rnini tadqiq etadi. Amaliy tilshunoslik va kognitiv psixologiyaning asosiy nazariy asoslariga — jumladan, Reidning idrok etish o'quv uslublari modeli, Mayerning multimedia orqali ta'lim olish kognitiv nazariyasi va Paivioning ikkilamchi kodlash nazariyasiga tayangan holda — maqolada sensorli axborotni qayta ishlashdagi individual farqlar ingliz tilini chet tili (EFL) sifatida o'rganuvchilarda leksik va grammatik bilimlarning rivojlanish samaradorligiga qanday ta'sir qilishi ko'rib chiqiladi. Tadqiqotda har ikkala modalitet (auditorial va vizual) til o'rganishga o'ziga xos hissa qo'shishi hamda multimodal o'qitish yondashuvi turli idrok etish afzalliklariga ega bo'lgan o'rganuvchilar uchun eng maqbul natijalarni berishi ta'kidlanadi.

**Kalit so'zlar:** o'quv uslublari, auditorial o'rganuvchilar, vizual o'rganuvchilar, ikkinchi tilni o'zlashtirish, so'z boyligini o'zlashtirish, grammatikani o'zlashtirish, multimodal ta'lim.

### **Introduction.**

The question of how individual learners differ in the way they perceive and process new linguistic information has occupied applied linguists and language educators for several decades. Among the many variables that shape second language acquisition (SLA), perceptual learning style preferences — in particular, auditory and visual processing tendencies — have received sustained scholarly attention. Learners who favour auditory input process new language most effectively through listening, oral interaction, and phonological engagement, while visual learners benefit more readily from written text, diagrams, colour-coded presentations, and orthographic exposure. Understanding these differences has direct implications for the design of language instruction, particularly in the teaching of vocabulary and grammar, which together form the structural and lexical backbone of communicative competence.

The relevance of this topic is particularly acute in EFL contexts, where classroom instruction often constitutes the learner's primary — or sole — source of contact with the target language. If instructional approaches are misaligned with a learner's dominant perceptual channel, the efficiency of vocabulary encoding and grammatical internalisation may be compromised. The present paper addresses this concern by synthesising the most significant theoretical and empirical contributions to the field and by proposing a framework for understanding how auditory and visual learning styles interact with L2 vocabulary and grammar acquisition processes.

### **Theoretical Background: Learning Styles and Second Language Acquisition**

The concept of learning styles refers to the relatively stable, preferred ways in which individuals perceive, organise, and retain information. Within language education, the most influential taxonomy of perceptual learning styles was developed by Reid [7], whose Perceptual Learning Style Preference Questionnaire (PLSPQ) identified six distinct sensory modalities: visual, auditory, kinaesthetic, tactile, group, and individual. Reid's foundational research, conducted with ESL learners in the United States, demonstrated that perceptual style preferences vary significantly across linguistic and cultural backgrounds, and that these preferences have measurable consequences for language learning outcomes.

For the purposes of the present study, the focus falls on two of these modalities: auditory and visual. Auditory learners are characterised by a preference for spoken input and phonological engagement with new language. In an L2 context, such learners tend to develop stronger phonological representations of new vocabulary items, are often more attuned to prosodic features such as stress and intonation, and may internalise grammatical patterns more naturally through listening to authentic speech. Visual learners, by contrast, derive greatest benefit from written and graphically presented information. They tend to acquire orthographic word forms more readily, show a preference for grammar presented through structured tables and annotated texts, and often demonstrate stronger reading comprehension and spelling accuracy.

Two major cognitive theories provide the theoretical foundation for understanding why perceptual modality affects L2 acquisition outcomes. The first is Paivio's [6] Dual Coding Theory, which proposes that information is encoded in two independent but interconnected memory systems: a verbal system and a non-verbal, imagistic system. According to this framework, items processed through both systems simultaneously — that is, encountered in both auditory and visual forms — are encoded more deeply and retained more reliably than items processed through a single channel. The second is Mayer's [3] Cognitive Theory of Multimedia Learning, which builds on Dual Coding Theory by arguing that the auditory/verbal and visual/pictorial channels in working memory are distinct but complementary, and that optimal learning occurs when both channels are engaged in a coordinated manner that avoids cognitive overload.

### **Auditory and Visual Learning Styles in L2 Vocabulary Acquisition**

Vocabulary acquisition is widely regarded as one of the most fundamental dimensions of L2 development. Nation [5] has demonstrated that productive knowledge of approximately 3,000 high-frequency word families is necessary for basic communicative competence, while receptive knowledge of 8,000 to 9,000 word families is required for unassisted reading of authentic texts. Given the scale of the vocabulary learning challenge, the efficiency with which learners encode, store, and retrieve new

lexical items is of critical importance — and this efficiency is directly shaped by perceptual processing preferences.

The encoding of a new vocabulary item involves multiple knowledge dimensions: phonological form, orthographic form, morphological structure, syntactic behaviour, and semantic content. Auditory learners are particularly well-positioned to acquire the phonological dimension of lexical knowledge: hearing a word in context, attending to its stress pattern and phonemic composition, and associating it with its meaning through listening all play to the auditory learner's processing strengths. Research has consistently shown that phonological short-term memory — a capacity strongly associated with auditory processing — is a significant predictor of L2 vocabulary learning success (Baddeley [1]).

Visual learners, by contrast, may demonstrate an advantage in the orthographic and morphological dimensions of vocabulary knowledge. Encountering new words in written form, associating them with visual images or colour-coded categories, and studying them through vocabulary cards and annotated texts all leverage the visual learner's preferred processing channel. Studies employing word-picture association tasks have demonstrated strong vocabulary retention advantages for visual learners when image-based presentation is used. Research in cognitive neuroscience has further shown that words encoded with rich, multi-sensory perceptual stimuli — including both auditory and visual elements — are stored in more complex and durable neural networks than words learned through a single channel (Mayer [3]).

These findings suggest that, while auditory and visual learners may differ in their preferred routes to lexical knowledge, the most effective vocabulary instruction is one that combines both modalities. Providing learners with both heard and written representations of new vocabulary items, supplemented by images and contextual examples in both spoken and written form, maximises the likelihood that all learners will develop rich, multi-dimensional lexical representations.

### **Auditory and Visual Learning Styles in L2 Grammar Acquisition**

Grammar acquisition in a second language presents a different set of challenges from vocabulary learning, in that it involves not only the encoding of discrete forms but the internalisation of abstract structural rules that govern the relationship between forms and meanings. The theoretical debate in this area centres on the relative contributions of implicit, input-based acquisition and explicit, instruction-based learning (Ellis [2]). The present paper takes an eclectic position, acknowledging that both processes contribute to grammatical competence in adult L2 learners.

From the perspective of learning styles, visual learners may be particularly well-served by deductive grammar instruction — that is, the explicit presentation of grammatical rules followed by controlled practice. Grammar tables, colour-coded paradigms, annotated sentence diagrams, and structured written exercises all engage the visual processing channel and allow visual learners to identify structural patterns systematically. The effectiveness of visual input enhancement as a grammar teaching technique has been supported by a number of studies, which found that typographical highlighting of target grammatical forms in written texts significantly increased learners' noticing and subsequent acquisition of those forms.

Auditory learners, by contrast, may acquire grammar most effectively through inductive, listening-based approaches. Exposure to spoken input containing multiple instances of a target grammatical structure, oral grammar explanation, and

communicative speaking tasks that require the production of specific forms all engage the auditory processing channel. The Noticing Hypothesis holds that conscious attention to form is a prerequisite for acquisition; for auditory learners, this noticing is most likely to occur in the context of listening to spoken input in which target forms are aurally salient.

Recent research on captioned video as a language learning tool is particularly relevant to the interaction between perceptual style and grammar acquisition. Muñoz, Pujadas, and Pattemore [4] conducted longitudinal studies of L2 learners watching captioned television and found significant grammar gains for intermediate-level learners, attributing these gains to the simultaneous engagement of auditory and visual channels — the spoken soundtrack engaging auditory processing and the written captions engaging visual processing of the same grammatical forms. These findings align with the predictions of Mayer's [3] Cognitive Theory of Multimedia Learning and underline the particular effectiveness of combined audio-visual input for grammar acquisition.

### **Conclusion.**

The analysis presented in this paper demonstrates that auditory and visual learning style preferences have measurable and theoretically grounded implications for second language vocabulary and grammar acquisition. Auditory learners are advantaged in contexts that engage phonological processing, oral interaction, and listening-based noticing of grammatical forms, while visual learners benefit more readily from orthographic vocabulary presentation, image-based word learning, and deductive, visually structured grammar instruction. However, the most significant finding to emerge from both the theoretical literature and empirical research is the superior effectiveness of combined audio-visual instruction for learners across the perceptual preference spectrum.

These conclusions carry direct pedagogical implications. Language teachers in EFL and ESL contexts are encouraged to design vocabulary and grammar lessons that systematically combine auditory and visual input — providing new vocabulary items in both spoken and written form, supplemented by visual imagery; presenting grammatical structures both through listening tasks and through visually structured written materials; and using captioned multimedia as a versatile tool that engages both processing channels simultaneously. Such a multimodal approach does not merely accommodate learner diversity — it actively enriches the cognitive conditions for acquisition for all students, regardless of their dominant perceptual style.

Future research should extend this line of inquiry by examining the interaction between learning style preferences and specific vocabulary learning strategies, by investigating potential differences across proficiency levels and age groups, and by employing neuroimaging techniques to map the neural correlates of modality-aligned and multimodal L2 instruction. The findings of such research will contribute to the development of an evidence-based, learner-centred pedagogy that takes the full complexity of individual difference seriously.

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