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Influence of Swahili as a First Language (L1) on the Acquisition of Chinese as a Second Language (L2) Among Tanzanian Learners

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Abstract: This study examines the influence of Swahili as a first language (L1) on the acquisition of Chinese as a second language (L2) among Tanzanian learners, focusing on phonological, syntactic, and semantic challenges. Using a mixed-methods approach, data from 155 Swahili-speaking students were collected via surveys to assess perceived difficulties, learning strategies, and affective factors. Results indicate significant L1 interference: 86.5% of learners struggle to distinguish Chinese tones due to Swahili's non-tonal nature, 60% find Chinese word order challenging compared to Swahili's rigid SVO structure, and 62.6% face vocabulary retention issues due to limited cognates. Cultural references and idioms hinder comprehension for 48.4% of learners. Common strategies include memorization (65.2%), multimedia use (58.7%), and group practice (44.5%), often with Swahili as a comprehension bridge. Anxiety (46.5%) and confidence (73.5%) significantly influence learning outcomes, while local dialects show minimal effect. Constraints include insufficient funding, a lack of Swahili-tailored materials, and dependence on Confucius Institutes. Grounded in the Contrastive Analysis Hypothesis, Interlanguage Theory, Monitor Theory, and Interaction Hypothesis, the study recommends Swahili-mediated instruction, targeted tone training, and culturally relevant resources. Findings contribute to second language acquisition research and offer pedagogical insights for improving Chinese language education in Tanzania.

Keywords: Influence of Swahili, First Language (L1), Acquisition of Chinese, Second Language (L2), Tanzanian Learners

INTRODUCTION

Importance of Second Language Acquisition Research

Second Language Acquisition (SLA) research is critical for understanding how learners acquire a new language, particularly when their first language (L1) influences the process (Gass & Selinker, 2008). Cross-linguistic influence shapes learners' phonological, syntactic, and semantic development, often leading to challenges or facilitative effects. SLA studies inform language pedagogy by identifying barriers and tailoring teaching methods to diverse linguistic backgrounds, improving learner outcomes and instructional efficacy (Ortega, 2009; Ellis, 1997).

Overview of Language Education in Tanzania

Tanzania's multilingual context includes Swahili as the national language and lingua franca, English as a medium of instruction in secondary and higher education, and local dialects spoken in communities (Rubagumya, 1990). The rise of Chinese as a foreign language reflects growing economic ties with China, with institutions like Confucius Institutes at the University of Dar es Salaam and Dodoma promoting Chinese language and culture (Likoko & Wu, 2025). Tanzania's foreign language education policies, such as the National Education and Training Policy (2014), have evolved to include Chinese, driven by economic opportunities in trade, infrastructure, and diplomacy, but face challenges like inadequate funding (40% of respondents cited limited resources) and a lack of localized teaching materials (Likoko & Wu, 2025). This multilingual environment creates unique challenges for learners navigating linguistic differences between Swahili, English, and Chinese.

Research Questions and Research Gap

This study addresses the following questions:

- What linguistic challenges do Swahili-speaking learners face in learning Chinese?
- How does Swahili influence Chinese acquisition in phonology, syntax, and semantics?

Research Gap: While SLA research has extensively explored L1 interference for languages like English or Spanish (Gass & Selinker, 2008), there is a paucity of empirical studies on Swahili-speaking learners of Chinese. This gap is significant given the increasing demand for Chinese proficiency in Tanzania, driven by policy shifts to enhance global competitiveness (e.g., National Foreign Language Strategy, 2016) (Likoko & Wu, 2025), and the distinct linguistic features of Swahili, such as its non-tonal phonology and noun class system, that may impact Chinese acquisition (Fadhili, 2024).

Growth of Chinese Language Learning in Tanzania

The establishment of Confucius Institutes at universities like the University of Dar es Salaam and Dodoma has driven Chinese language learning, with 87.78% of respondents recognizing its importance for economic and diplomatic ties with China (Likoko & Wu,

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2025). Economic motivations, such as opportunities in trade, tourism, and infrastructure projects funded by China's Belt and Road Initiative (BRI), fuel this trend, supported by scholarships and exchange programs (Hartig, 2012; Likoko & Wu, 2025). This trend extends to secondary schools, where Chinese is increasingly offered as an elective, though similar linguistic challenges persist (Fadhili, 2024).In Zanzibar, 92.78% of educational stakeholders supported introducing Chinese as a foreign language, citing its role in enhancing economic opportunities and maintaining historical trade relations with China dating back to 1944 (Alawi, 2022). These economic and diplomatic drivers underscore the need for educational policies that address linguistic challenges, such as Swahili's influence on Chinese acquisition, to sustain this growth.

Challenges in Learning Chinese as a Second Language

Chinese presents unique challenges due to its tonal phonology, logographic writing system (Hanzi), and context-dependent grammar (Shen, 2005). For Swahili speakers, the absence of tones and articles in Swahili, combined with its Subject-Verb-Object (SVO) structure and noun class system, contrasts sharply with Chinese, leading to potential interference (Mpiranya, 2014 ; Fadhili, 2024). Cultural differences, including unfamiliar idioms and references, further complicate acquisition (DeFrancis, 1984). Policy-related barriers, such as insufficient funding and a lack of Swahili-adapted curricula, exacerbate these challenges, limiting the effectiveness of Chinese programs in Tanzanian higher education (Likoko & Wu, 2025).

Theoretical Framework

This study is grounded in the following SLA theories:

Contrastive Analysis Hypothesis (CAH): Predicts that similarities and differences between L1 (Swahili) and L2 (Chinese) influence learning difficulty. Negative transfer occurs where linguistic structures differ significantly, such as Swahili's non-tonal phonology versus Chinese tones or Swahili's noun class agreement versus Chinese's lack of inflection (Lado, 1957; Mpiranya, 2014).

Interlanguage Theory: Describes learners' transitional language systems, which may reflect Swahili-influenced errors in Chinese, such as incorrect tone usage or SVO-based word order errors (Selinker, 1972).

Transfer Theory: Examines how L1 knowledge (positive or negative) shapes L2 acquisition, particularly in phonology, syntax, and semantics. Swahili's prefix-based morphology may lead to overgeneralization in Chinese (Odlin, 1989; Mpiranya, 2014).

Monitor Theory (Krashen, 1981): Proposes that adults have two systems for L2 development: *acquisition* (subconscious, intuitive learning through exposure to comprehensible input) and *learning* (conscious knowledge of rules). The Monitor, a conscious editor of output, is effective only under specific conditions (time, focus on form, and knowledge of rules), which may explain why Swahili-speaking learners struggle with spontaneous Chinese production due to over-reliance on conscious learning (Krashen, 1981, pp. 16-19).

Interaction Hypothesis (Ellis, 1997): Suggests that interaction facilitates L2 acquisition by providing opportunities for negotiation of meaning, feedback, and modified input. Ellis (1997) emphasizes that interactional processes, such as clarification requests and recasts, help learners notice gaps in their L2 knowledge, which is relevant for Swahili-speaking learners who rely on group practice and teacher feedback to address phonological and syntactic challenges (Ellis, 1997).

LITERATURE REVIEW

Global Perspectives on SLA and L1 Interference

SLA research highlights that L1 influences L2 acquisition through positive transfer (e.g., shared syntactic structures) and negative transfer (e.g., phonological or grammatical interference) (Gass & Selinker, 2008). Studies on tonal languages show that non-tonal L1 speakers, such as English or Swahili speakers, struggle with tone differentiation (Shen, 2005), a challenge exacerbated by Swahili's non-tonal phonology, which lacks pitch-based distinctions (Mpiranya, 2014 ; Fadhili, 2024). For example, Likoko and Wu (2025) note that only a portion of Tanzanian graduates achieve the fluency needed for professional roles in Chinese-affiliated companies due to persistent tone-related errors. Krashen (1981) notes that L1 influence is most pronounced in complex word order and word-for-word translations, particularly when learners rely on their L1 as a substitute utterance initiator due to insufficient acquisition of the L2 (Krashen, 1981). Ellis (1997) argues that L1 interference is mediated by learners' developmental readiness, with certain L2 structures (e.g., Chinese tones) being acquired only when learners are cognitively prepared to process them (Ellis, 1997). Ellis and Wulff (2019) emphasize the role of formulaic language in L2 acquisition, noting that learners initially rely on memorized chunks (e.g., "nǐ hǎo") to build fluency, which aligns with the memorization strategies reported by Tanzanian learners (Ellis & Wulff, 2019).

Linguistic Structure of Swahili and Chinese

Swahili is a Bantu language with a non-tonal phonology, a CV/CVC syllable structure, and a noun class system using prefixes for grammatical relations (Ashton, 1944; Mpiranya, 2014). Its consonant inventory lacks retroflex sounds, and its syllable structure avoids complex codas, contrasting with Chinese's tonal phonology and complex syllables, including retroflex sounds like "zh" and "sh" (Mpiranya, 2014; Norman, 1988). Swahili's rigid SVO word order and prefix-based verb agreement (e.g., subject and object markers) differ from Chinese's flexible, context-driven syntax and lack

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of verb inflection (Mpiranya, 2014 ; Li & Thompson, 1981). Swahili's verb extensions (e.g., causative, applicative) add semantic nuances to verbs, unlike Chinese's reliance on particles and word order (Mpiranya, 2014). For instance, Swahili's verb prefix system (e.g., "ni-na-soma" for "I am reading") contrasts with Chinese's use of aspect particles like "le" (e.g., "wǒ kàn le shū" for "I read the book"), leading to errors among learners who apply Swahili's structure (Fadhili, 2024). The absence of tense markers in Swahili complicates learning Chinese aspect particles (Mushi, 2012; Fadhili, 2024). These differences suggest potential interference in phonology, syntax, and morphology. Krashen (1981) suggests that such interference is stronger in formal learning environments where early production is emphasized, leading to reliance on Swahili structures before sufficient Chinese acquisition occurs (Krashen, 1981). Ellis (1997) adds that interactional feedback, such as teacher corrections during group practice, can help learners overcome these interferences by making L2 structures more salient (Ellis, 1997).

Common Learning Challenges in Chinese

Non-tonal language speakers struggle with Chinese tones, as pitch changes alter word meanings (e.g., mā "mother" vs. mǎ "horse") (Shen, 2005). Swahili's non-tonal nature and simple CV/CVC syllable structure exacerbate this, as learners lack experience with pitch-based distinctions (Mpiranya, 2014 ; Fadhili, 2024). Fadhili (2024) found that 78% of Swahili-speaking secondary school students struggled with tone recognition, particularly the third tone, mirroring Tanzania students in this study (Survey Data, 2025). The Hanzi writing system requires memorizing thousands of characters, contrasting with Swahili's alphabetic script, with Fadhili (2024) reporting that 65% of secondary students found character recognition and writing difficult (DeFrancis, 1984; Mpiranya, 2014). Grammar challenges include the lack of inflection and reliance on word order and particles, contrasting with Swahili's prefix-based morphology (Li & Thompson, 1981; Mpiranya, 2014 ; Fadhili, 2024). For example, Likoko and Wu (2025) highlight that 60% of respondents found Chinese curricula misaligned with Tanzanian job market needs, exacerbating grammatical and lexical challenges. Ellis (1997) notes that explicit instruction on tones and grammar is crucial for beginners not developmentally ready to acquire these naturally (Ellis, 1997). Ellis and Wulff (2019) suggest that formulaic sequences (e.g., "xièxiè" for "thank you") scaffold acquisition by providing low-risk entry points (Ellis & Wulff, 2019).

Chinese Language Education and Tanzanian Learners

Confucius Institutes in Tanzania report growing enrollment but highlight challenges like insufficient Swahili-tailored materials and limited immersive practice (Wheeler, 2014). For example, Likoko and Wu (2025) note that reliance on Confucius Institutes for Chinese programs creates sustainability concerns, as seen during the COVID-19 pandemic when programs were suspended. Tanzania's policies, like the National Foreign Language Strategy (2016), promote Chinese for global competitiveness, but inadequate funding (40% of respondents cited limited resources) and lack of local educators (60% reported insufficient instructors) hinder effectiveness (Likoko & Wu, 2025). Fadhili (2024) reports that 70% of secondary students found materials lacking Swahili explanations, complicating comprehension. Learner performance shows progress in basic vocabulary but persistent difficulties with tones and characters (Hartig, 2012; Fadhili, 2024). Krashen (1981) emphasizes that classrooms providing comprehensible input tailored to learners' levels enhance acquisition (Krashen, 1981, pp. 108-109). Ellis (1997, p. 98) supports interaction-rich environments for modified input via teacher-student or peer interactions (Ellis, 1997). Ellis and Wulff (2019) highlight usage-based approaches for internalizing Chinese structures through repeated exposure (Ellis & Wulff, 2019). Mpiranya (2014) and Fadhili (2024) underscore the need for materials accounting for Swahili's noun class system and verb extensions (Mpiranya, 2014 ; Fadhili, 2024).

Theoretical Approaches to Language Transfer

Positive transfer occurs when L1 structures align with L2 (e.g., shared SVO tendencies), while negative transfer arises from differences (e.g., tones, noun classes) (Odlin, 1989; Mpiranya, 2014,). Fossilization is common in pronunciation (Selinker, 1972). Fadhili (2024) observes that secondary students often apply Swahili's SVO structure to Chinese, producing interlanguage errors like "wǒ shì xǐhuān shū" (incorrectly using Swahili's rigid SVO for "I like books"). Likoko and Wu (2025) note that socio-cultural factors, like viewing Mandarin as challenging (reported by some Tanzanian learners), influence engagement. Krashen's (1981) Monitor Theory suggests L1 influence is pronounced in "Monitor overusers," leading to Swahili-influenced errors (Krashen, 1981, pp. 19-20). Ellis (1997, p. 37) notes that transfer effects depend on developmental stages, with negative transfer more pronounced early on (Ellis, 1997). Ellis and Wulff (2019) emphasize that formulaic language reduces transfer errors by providing stable structures (Ellis & Wulff, 2019). Policy barriers, like insufficient Swahili-adapted materials and teacher training, exacerbate transfer issues (Likoko & Wu, 2025; Fadhili, 2024).

RESEARCH METHODS

Research Design

This study employs a mixed-methods approach, combining:

- **Quantitative**: Surveys (n=155) assessing learners' perceived difficulties in phonology, syntax, and semantics, with responses coded on Likert scales (e.g., "easy" to "very difficult") (Survey Data, 2025).

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- **Qualitative**: Open-ended survey questions exploring learners' challenges, strategies, and suggestions for improving Chinese teaching.

Purposive Sampling and Mitigation of Bias

Participants were purposively sampled from Swahili-speaking Chinese learners at Tanzanian universities, ensuring representation across gender (58.1% male, 41.3% female), age (61.3% aged 21–25, 14.8% under 20, 12.9% 26–30, 11% over 30), and proficiency levels (10.3% beginner, 47.7% intermediate, 42% advanced). Bias was mitigated by standardizing survey questions and ensuring anonymity (Creswell, 2014).

Data Collection

Data were collected via an google form with 23 questions covering background information, phonological challenges, grammar, vocabulary, learning strategies, affective factors, and open-ended reflections (Survey Data, 2025).

Data Analysis

Quantitative data were analyzed using descriptive statistics (e.g., percentages, frequencies) to identify patterns in challenges and strategies. Qualitative responses were coded thematically to extract recurring themes, such as tone difficulties, character memorization, and cultural barriers (Braun & Clarke, 2006). Cross-tabulations examined relationships between proficiency levels, age, and reported challenges.

Ethical Considerations

Participants provided informed consent, with assurances of anonymity and data confidentiality. The study adhered to institutional protocols, ensuring respect for participants' rights and voluntary participation (Creswell, 2014; Likoko & Wu, 2025).

Document Review

Reviewed materials included student textbooks, Confucius Institute curricula, and assessment reports, revealing reliance on English-mediated instruction and a lack of Swahili-specific resources .

RESEARCH FINDINGS

Phonological Interference from Swahili

The acquisition of Chinese phonology presents significant challenges for Tanzanian learners, primarily due to the influence of Swahili's non-tonal phonology. Survey data (2025) indicate that 86.5% of learners (n=134) struggle with recognizing and producing Chinese tones, a critical feature of Mandarin's lexical system. Swahili, as a Bantu language, lacks lexical tones, relying instead on stress and intonation patterns, which leads to negative transfer when learners attempt to perceive and articulate Chinese's four tones and neutral tone. This difficulty is compounded by the absence of phonemic equivalents in Swahili for certain Chinese sounds, such as retroflex consonants (e.g., /ʈʂ/, /ʂ/). Lado's Contrastive Analysis Hypothesis (CAH) provides a theoretical framework for these challenges, positing that differences between L1 and L2 phonological systems result in negative transfer, as learners perceive L2 sounds through their L1 phonemic system (Kramsch, 2007, p. 242). Kramsch notes that Lado emphasized the difficulty of acquiring tone languages for speakers of non-tonal languages, as learners "hear [their] own" phonemes rather than L2 sound units (Kramsch, 2007, p. 243). This aligns with the observed errors in tone production, where Swahili speakers often misinterpret Chinese tones as stress patterns, leading to lexical miscommunication. For example, confusion between *mā* (mother) and *mǎ* (horse) was frequently reported, reflecting Swahili's lack of tonal distinctions (Survey Data, 2025). These findings underscore the need for targeted phonological training, such as tone drills and auditory discrimination exercises, to mitigate Swahili's influence and enhance Chinese tone acquisition.

Influence of Swahili Syllable Structure

In addition to tonal issues, **58.7% (n=91)** of learners expressed difficulty with specific Chinese consonant sounds such as **"q," "x," "zh," "ch," and "r,"** which do not exist in Swahili's phonemic inventory (Survey Data, 2025). Swahili follows a relatively simple **CV (consonant-vowel)** or **CVC (consonant-vowel-consonant)** syllable structure and lacks retroflex and palatal fricatives (Mpiranya, 2014). As a result, many learners substitute unfamiliar Chinese sounds with their nearest Swahili equivalents.

For example:

The Chinese **"x"** (as in *xué* 学, "to study") is often pronounced as **/s/** or **/sh/** by Swahili speakers, leading to utterances like *"shuě shēng"* instead of *"xuéshēng"* (student).

The retroflex **"zh"** (as in *zhōngguó* 中国, "China") is frequently realized as **/z/** or **/j/**, resulting in pronunciations like *"zōngguó"* or *"jōngguó."*

These substitutions hinder intelligibility, particularly when multiple similar-sounding words exist in Mandarin (e.g., *zhǎo* 找 "to look for" vs. *zǎo* 早 "early"). Learners are often unaware of the articulation differences due to **phonemic deafness**, a phenomenon in which sounds outside the learner's L1 inventory are not perceptually distinct.

Krashen's (1981) **Monitor Theory** further clarifies why learners may persist in such errors. In formal learning settings, students often "monitor" their speech by consciously applying learned rules. However, when phonological knowledge is lacking or underdeveloped as in the case of tones and unfamiliar consonants learners fall back on Swahili equivalents, leading to **negative transfer**.

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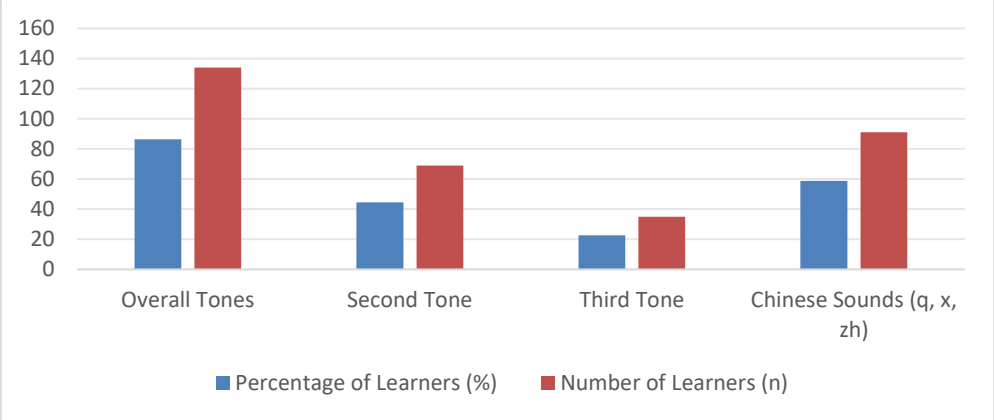

Figure 1: Phonological Challenges in Chinese Acquisition for Swahili-Speaking Learners

This table summarizes the percentage and number of learners (n=155) reporting difficulties with Chinese tones (overall, second, and third tones) and specific Chinese sounds, reflecting Swahili's non-tonal phonology and CV/CVC syllable structure (Survey Data, 2025).

Syntactic and Morphological Transfer

Swahili SVO Structure vs. Flexible Chinese Word Order: 60% (n=93) faced challenges with Chinese word order, often due to direct translation from Swahili's rigid SVO structure (Survey Data, 2025) . Krashen (1981) notes that such errors occur when learners rely on L1 structures in early production (Krashen, 1981). Ellis (1997) suggests interactional feedback, like recasts, corrects these errors.

Absence of Articles and Tense Markers: 38.7% (n=60) struggled with aspect particles (e.g., 了), reflecting Swahili's lack of equivalent markers (Survey Data, 2025).

Lexical and Semantic Confusion

Limited Vocabulary Overlap: The absence of shared cognates complicates vocabulary acquisition, with 62.6% (n=97) finding Chinese words difficult due to their logographic nature (Survey Data, 2025). Ellis and Wulff (2019) note that formulaic sequences ease vocabulary acquisition.

False Cognates and Cultural References: While false cognates are less prevalent (20.6%, n=32), cultural references and idioms pose challenges, with 48.4% (n=75) struggling due to unfamiliar contexts (Survey Data, 2025).

Learner Strategies and Adaptations

Memorization, Visual Aids, Group Learning: Strategies include memorizing vocabulary (65.2%, n=101), using multimedia (58.7%, n=91), flashcards/apps (38.7%, n=60), and group practice (44.5%, n=69) (Shen, 2005; Fadhili, 2024; Survey Data, 2025). Krashen (1981) supports these for providing comprehensible input (Krashen, 1981, pp. 106-108). Ellis (1997, p. 98) highlights group practice for interaction and feedback (Ellis, 1997, p. 98).

Overreliance on English: English is used by 41.3% (n=64) to understand Chinese, but 25.2% (n=39) prefer Swahili explanations, suggesting potential for bilingual strategies (Mushi, 2012; Mpiranya, 2014, pp. 19-28; Fadhili, 2024; Survey Data, 2025). Likoko and Wu (2025) and Fadhili (2024) note the lack of Swahili-tailored materials as a barrier.

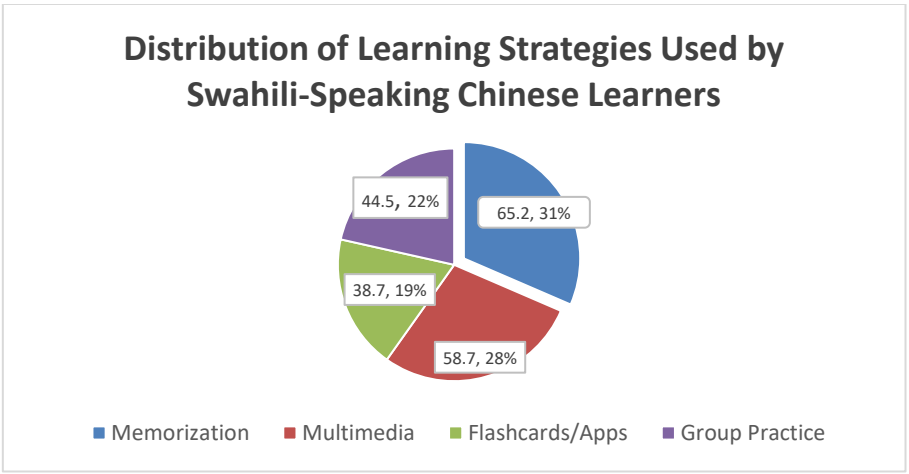

Figure 2: Distribution of Learning Strategies Used by Swahili-Speaking Chinese Learners

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This pie chart illustrates the percentage of learners (n=155) employing various strategies to overcome challenges in Chinese acquisition, with memorization being the most common (Survey Data, 2025).

Unexpected Findings

Influence of Local Dialects: Only 3.9% (n=6) reported using local dialects, indicating Swahili's dominance as the primary L1 influence (Survey Data, 2025).

The study revealed significant motivational and affective factors influencing Chinese acquisition. Anxiety affects 46.5% (n=72) of learners, potentially hindering their ability to process input effectively, while 73.5% (n=114) expressed confidence in improving their Chinese proficiency (Survey Data, 2025). Cultural exposure, reported by 85.8% (n=133), significantly enhances motivation, as learners engage with Chinese media, traditions, and communities, fostering a positive attitude toward learning (Dörnyei, 2001). Similarly, (Ilonga, 2018) found that at the Dar es Salaam University College of Education (DUCE), learners were motivated by integrative goals, such as assimilating into Chinese culture (7 respondents) and forming friendships with Chinese speakers (8 respondents), as well as instrumental goals, like becoming translators or accessing scholarships to study in China (p. 69). These motivations align with the 70.09% of learners in this study driven by economic opportunities, such as trade and employment with Chinese companies, reflecting the influence of China's growing economic presence in Tanzania (Survey Data, 2025; Honga, 2018). Krashen's (1981) Affective Filter Hypothesis explains how anxiety blocks comprehensible input, potentially exacerbating challenges like tone recognition (86.5%, n=134) and syntactic errors (60%, n=93) (Krashen, 1981). Ellis (1997) notes that anxiety delays developmental readiness for complex structures, such as Chinese tones and flexible word order, while confidence and cultural engagement facilitate acquisition (Ellis, 1997). (Ilonga, 2018) further supports this, highlighting that teacher encouragement and peer support at DUCE reduced learners' apprehension, enhancing engagement with Chinese. Additionally, 60% of learners perceive curriculum misalignment with career goals, which may dampen motivation despite economic incentives (Likoko & Wu, 2025).

Summary of Key Findings

This study identifies significant linguistic challenges faced by Swahili-speaking learners in acquiring Chinese, driven by L1 interference from Swahili's distinct phonological, syntactic, and morphological features. The primary barriers include:

Phonological Challenges: 86.5% of learners (n=134) reported difficulty distinguishing Chinese tones, particularly the second (44.5%, n=69) and third tones (22.6%, n=35), due to Swahili's non-tonal phonology (Shen, 2005; Mpiranya, 2014, pp. 6-7; Fadhili, 2024; Survey Data, 2025). Additionally, 58.7% (n=91) struggled with Chinese sounds (e.g., "q," "x," "zh") absent in Swahili's CV/CVC syllable structure (Mushi, 2012; Mpiranya, 2014, p. 6).

Syntactic and Morphological Transfer: 60% of learners (n=93) faced challenges with Chinese's flexible word order, often applying Swahili's rigid SVO structure, leading to errors like "wǒ xǐhuān shū shì" instead of "wǒ xǐhuān shì shū" (Li & Thompson, 1981; Mpiranya, 2014, pp. 40-49; Fadhili, 2024; Survey Data, 2025). The absence of tense markers and articles in Swahili complicated learning Chinese aspect particles (e.g., "le"), with 38.7% (n=60) reporting difficulties (Mushi, 2012; Mpiranya, 2014).

Lexical and Semantic Challenges: Vocabulary retention was problematic for 62.6% (n=97) due to the lack of cognates and Chinese's logographic writing system (Everson, 1998; Mpiranya, 2014, p. 6). Cultural references and idioms posed issues for 48.4% (n=75), as Swahili learners struggled with unfamiliar contexts (DeFrancis, 1984; Fadhili, 2024).

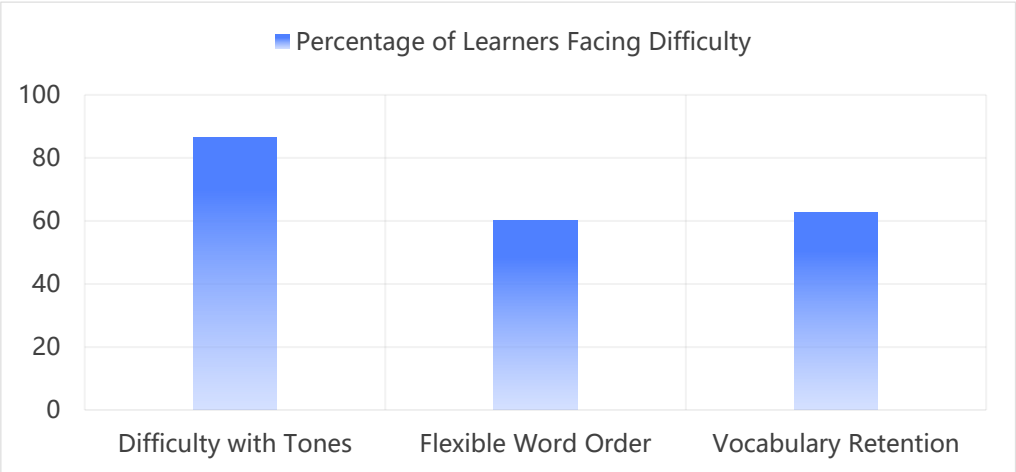

Figure 3: Major Linguistic Challenges in Chinese Acquisition for Swahili-Speaking Learners

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The following bar chart illustrates the percentage of learners (n=155) reporting difficulties with Chinese tones, word order, and vocabulary retention, highlighting the significant impact of Swahili's linguistic features (Survey Data, 2025).

DISCUSSION AND POLICY RECOMMENDATIONS

Summary of Key Findings in SLA Context

Confirmed and Unexpected Areas of Interference: The study confirms CAH predictions of negative transfer in phonology (tones), syntax (word order, particles), and morphology due to Swahili's structure (Lado, 1957; Mpiranya, 2014 ; Fadhili, 2024). Fadhili (2024) reports that 78% of secondary students struggle with tones and 60% with word order, aligning with Tanzania learners (Survey Data, 2025). For example, learners may incorrectly say "wǒ shì xīhuān shū" due to Swahili's SVO structure (Fadhili, 2024). Unexpectedly, local dialects had minimal impact. Interlanguage theory explains persistent errors as part of transitional systems (Selinker, 1972). Krashen's (1981) Monitor Theory notes that Swahili-influenced errors are prevalent in Monitor overusers (Krashen, 1981, pp. 19-20). Ellis (1997) suggests errors are pronounced in early stages (Ellis, 1997). Ellis and Wulff (2019) note that formulaic language reduces transfer errors (Ellis & Wulff, 2019).

Cross-Linguistic Comparison and Pedagogical Implications: Swahili learners face greater lexical challenges due to fewer cognates but similar tonal difficulties as English speakers (Shen, 2005). Swahili's noun class system and verb extensions lead to overgeneralization in Chinese (Mpiranya, 2014 ; Fadhili, 2024). Policy barriers, like inadequate funding (40%) and lack of Swahili-adapted curricula (60% misalignment), exacerbate challenges (Likoko & Wu, 2025; Fadhili, 2024). Swahili-based explanations can reduce reliance on English and address cultural gaps (Mushi, 2012). Krashen (1981) advocates for comprehensible input to facilitate acquisition (Krashen, 1981). Ellis (1997) emphasizes interactional feedback for correcting errors (Ellis, 1997).

Thematic Analysis of Language Learning Challenges

Tones, Grammar, Vocabulary Retention: Tones (86.5% difficulty) and character memorization (62.6%) are primary obstacles, followed by grammar issues like aspect particles (38.7%) (Shen, 2005; Mpiranya, 2014 ; Fadhili, 2024; Survey Data, 2025). Fadhili (2024) reports that 65% of secondary students struggle with Hanzi. Likoko and Wu (2025) note that only a portion of graduates achieve professional fluency due to these challenges. Krashen (1981) notes that Monitor overuse hinders fluency (Krashen, 1981). Ellis (1997) suggests explicit instruction for beginners (Ellis, 1997). Ellis and Wulff (2019) highlight formulaic sequences for reducing cognitive load (Ellis & Wulff, 2019).

Learning Environment and Teacher Readiness: Limited real-world practice and Swahili-specific materials hinder progress, compounded by a lack of local educators (60%) and reliance on native Chinese instructors (Likoko & Wu, 2025; Fadhili, 2024; Survey Data, 2025). Fadhili (2024) notes that 55% of secondary school teachers lack Swahili-mediated training. Krashen (1981) suggests simplified teacher-talk as comprehensible input (Krashen, 1981). Ellis (1997) emphasizes recasts for corrective feedback (Ellis, 1997).

Policy and Pedagogical Recommendations

Incorporating Contrastive Grammar Instruction

To address syntactic and morphological interference, Chinese instruction for Swahili-speaking learners should systematically incorporate contrastive grammar analysis. This involves explicitly highlighting the structural differences between Swahili and Chinese grammar, including word order, noun class morphology, and verb inflection patterns.

For example, teachers can demonstrate how Swahili verbs are composed of multiple affixes (e.g., *ni-na-soma* – "I am reading") while Chinese verbs remain morphologically simple (e.g., *wǒ zài kàn shū*). Through side-by-side comparison, learners can begin to disassociate Swahili's rich inflectional system from Chinese's aspect-based system.

Lessons might include:

- Diagrams contrasting SVO sentence structures in both languages.
- Practice converting Swahili constructions like "Alimwandikia barua dada yake" ("He wrote a letter to his sister") into Chinese structures like "Tā gěi tā jiějie xiě le yī fēng xìn."
- Exercises identifying incorrect Chinese sentences based on Swahili-like constructions and rewriting them accurately.

Such approaches are grounded in the Contrastive Analysis Hypothesis (Lado, 1957), which holds that explicit comparison of L1 and L2 structures can help anticipate and reduce negative transfer. Fadhili (2024) and Mpiranya (2014) also stress the importance of considering Swahili's noun class and verb extension systems, which do not exist in Chinese and can mislead learners into overapplying morphological rules.

Furthermore, Swahili-based grammar explanations, presented in Swahili or Swahili-English bilingual formats, could help clarify abstract Chinese concepts. For instance, explaining Chinese classifiers like *"běn"* (for books) or *"tiáo"* (for long, narrow things) through familiar Swahili noun categories can bridge understanding.

Phonetic and Tone Training Tools

Given that 86.5% of learners find Chinese tones challenging due to Swahili's non-tonal phonology

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(Survey Data, 2025), it is essential to introduce specialized tone training tools early in instruction. Applications like Pleco, Pinyin Trainer, or Speechling can provide repetitive, interactive tone-pair drills, audio recordings, and intonation graphs that help learners distinguish minimal pairs (e.g., *mā, má, mǎ, mà*).

For instance:
Learners could use Pleco's flashcard system to practice recognizing and producing tone differences in words such as:

- "mā" (mother) vs. "mǎ" (horse)
- "táng" (sugar) vs. "tàng" (burn)

Teachers can incorporate tone contour diagrams and hand gestures to visualize tone direction (e.g., rising, falling).

Additionally, the use of language lab software or mobile apps with speech recognition features allows learners to receive immediate feedback on pronunciation accuracy. These tools can be especially helpful for fossilized learners who need individualized tone correction.

As noted by Shen (2005) and Mpiranya (2014), non-tonal speakers require extra exposure and practice to internalize tonal distinctions. Implementing tone-focused listening discrimination activities such as identifying correct tone combinations in phrases like *bàba mǎi mǎ* ("father buys horse") can sharpen both perception and production.

At a policy level, Chinese language curricula designed for Tanzanian learners should embed tone instruction systematically across all levels, rather than limiting it to pronunciation units in beginner courses. Reinforcement through speaking tasks, peer correction, and song-based tone repetition can enhance retention.

Developing Swahili-Friendly Chinese Learning Materials

One of the most critical interventions for improving Chinese language acquisition among Swahili-speaking learners is the development of bilingual and culturally contextualized learning resources. Existing textbooks and multimedia materials often assume English proficiency and omit Swahili-specific explanations, which excludes learners with limited English literacy or those who rely primarily on Swahili in their daily lives (Fadhili, 2024; Survey Data, 2025).

To address this, the development of Swahili-Chinese bilingual textbooks, flashcards, audio-visual content, and localized example sentences is essential. For example:

- A vocabulary section teaching the word "chī" (吃, to eat) could use examples like "chī ugali" (eat ugali), integrating familiar cultural items to anchor meaning.
- Grammar drills could contrast Chinese classifiers with Swahili noun classes using visual mapping e.g., aligning běn (本, for books) with Swahili's Class 5 for inanimate objects (e.g., kitabu).
- Dialogues in videos could include familiar Tanzanian contexts: visiting a market (soko), greeting elders, or preparing traditional foods, such as pilau and mandazi, to make scenarios more relatable.

These context-rich materials promote comprehensible input, which Krashen (1981, pp. 129–131) argues is foundational to successful language acquisition. Learners better internalize meaning when new language forms are presented in settings they understand, reinforcing natural acquisition processes.

Moreover, repeated exposure to Chinese structures through Swahili-supported materials can build fluency. As Ellis and Wulff (2019) emphasize, language learning is usage-based, and frequent, meaningful interaction with structures such as "wǒ xiǎng chī fàn" (I want to eat food) across different settings enables learners to internalize syntax and vocabulary.

Policy initiatives should prioritize funding for the creation and dissemination of these localized materials, addressing the 40% of learners who cite resource shortages as a barrier (Likoko & Wu, 2025). This could involve partnerships between Confucius Institutes, local universities, and Swahili language experts to ensure cultural relevance and linguistic accuracy.

Study Limitations and Future Research

Limited Generalizability: The sample (n=155) may not represent all Swahili-speaking learners, focusing on Tanzania students (Creswell, 2014; Likoko & Wu, 2025). Fadhili (2024) suggests similar challenges in secondary schools, indicating a need for broader studies.

Need for Longitudinal Studies and Larger Sample Sizes: Long-term studies are needed to track progress and fossilization in tone and syntactic development (Ortega, 2009; Mpiranya, 2014 ; Fadhili, 2024). Krashen (1981) suggests longitudinal studies for input effects (Krashen, 1981). Ellis (1997) emphasizes studying developmental sequences (Ellis, 1997). Future research should explore policy impacts across educational levels (Likoko & Wu, 2025; Fadhili, 2024).

CONCLUSION

This study has examined the significant impact of Swahili as a first language (L1) on the acquisition of Chinese as a second language (L2) among Tanzanian learners. The findings underscore the crucial role of cross-linguistic interference, particularly in three major areas: phonology, syntax, and lexicon.

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First, phonological challenges reported by 86.5% of participants stem from Swahili's non-tonal phonology, which lacks pitch distinctions used to differentiate meaning. Learners consistently struggle with perceiving and producing Mandarin tones, especially the second and third tones. This issue is compounded by difficulty in pronouncing Chinese sounds such as "q," "x," and "zh", which are absent from Swahili's consonant inventory and syllable structure (Mpiranya, 2014). Without targeted intervention, these phonological errors often fossilize and hinder intelligibility in both spoken and receptive communication.

Second, syntactic interference, affecting 60% of learners, is rooted in the rigid SVO structure and morphologically rich verb system of Swahili. These features contrast sharply with Chinese's flexible syntax and reliance on particles like "了" to mark aspect. Learners frequently produce ungrammatical word orders or omit essential grammatical markers due to the absence of similar constructs in Swahili. These patterns reflect interlanguage development and are especially prevalent during early stages of learning when students rely heavily on L1-based strategies.

Third, lexical challenges reported by 62.6% of respondents arise from the lack of cognates between Chinese and Swahili. The logographic nature of Chinese characters further complicates vocabulary acquisition and retention. Learners often resort to rote memorization without semantic depth, which limits expressive capacity and slows reading comprehension. Cultural differences and unfamiliar idiomatic expressions also create semantic gaps.

Despite these challenges, the study highlights promising pathways for improvement. Tanzania's education policy increasingly supports Chinese language learning as a tool for enhancing global competitiveness. However, limited funding (40%) and curriculum misalignment (60%) including the lack of Swahili-adapted resources remain substantial obstacles (Likoko & Wu, 2025). Addressing these systemic gaps is vital for program success.

The study draws on multiple second language acquisition (SLA) theories to interpret findings and guide pedagogical responses. Krashen's (1981) Monitor Theory emphasizes the need for comprehensible input to support natural acquisition, particularly in pronunciation and syntax. Ellis's (1997) Interaction Hypothesis highlights the role of corrective feedback and interactional practice in refining learners' interlanguage. Meanwhile, Ellis and Wulff (2019) advocate the use of formulaic sequences and repeated exposure to stabilize linguistic structures in memory particularly helpful for vocabulary and sentence construction.

Based on these findings, the study recommends several key strategies:

- Swahili-mediated instruction to bridge conceptual gaps and reduce cognitive overload.
- Tone-focused training using mobile apps, minimal pair drills, and visual cues.
- Bilingual materials and culturally relevant examples to contextualize grammar and vocabulary.
- Teacher training programs targeting Swahili-specific interference patterns and interaction-based teaching methods.

Ultimately, this research fills a critical gap in SLA literature by focusing on the under-researched Swahili-Chinese learning interface. It contributes both theoretical and practical insights for enhancing Chinese language pedagogy in East Africa and supports calls for policy reform, curriculum localization, and teacher empowerment. As Chinese continues to expand as a global language, ensuring equitable and effective learning opportunities for Swahili speakers will be essential for linguistic inclusion and cross-cultural exchange.

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