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Applying the MSMLP model in advancing language teaching and learning: a longitudinal case study on soft skills development

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Language is a dynamic phenomenon that transcends mere verbal expression. In the educational setting, and particularly language teaching and learning, understanding the processes that underlie communication is crucial for effective pedagogy. The Multi-Stratal Model of Language Processing (MSMLP) emerges as a neurolinguistic framework that not only dissects the complexities of language processing but also offers a multifaceted perspective through which language education can be advanced, moving beyond traditional linguistic boundaries by integrating social, cultural, emotional, gestural, and linguistic components. The study unfolds by examining the foundational linguistic strata, emphasizing the integration of pragmatics, morphosyntax, semantics, and phonology into a more holistic language curriculum. Social dimensions, encompassing sociolinguistic variables, social context, and conversation analysis, are explored, guiding educators to incorporate these elements into their teaching methodologies. The longitudinal case study focuses on soft skills development among first-year English students at the Faculty of Arts and Humanities in Sfax, emphasizing real-world scenarios and comprehensive assessments. The iterative approach assesses the curriculum's impact on students' soft skills, highlighting MSMLP's applicability in language teaching and curriculum design. The study advocates for embracing the MSMLP, fostering a holistic language teaching approach to prepare students for effective communication in diverse real-world contexts, and unraveling the profound connection between language and the expression of thoughts and feelings beyond explicit verbalization.

KEYWORDS

MSMLP, language teaching, soft skills development, holistic language curriculum, real-world application

1 Introduction

Language teaching has long been anchored in exploring linguistic structures, aiming to equip students with the tools to communicate effectively. The Multi-Stratal Model of Language Processing (henceforth MSMLP) (Elleuch, 2024) is an innovative neurolinguistic framework, that transcends traditional linguistic boundaries by providing a stratified perspective on language processing, acknowledging that communication extends beyond mere linguistic expression. It introduces five interconnected strata: linguistic, social, cultural, emotional, and gestural, each playing a pivotal role in shaping the dynamics of human interaction. At the core of the MSMLP model lies a profound recognition of the interconnectedness of various dimensions influencing language processing (Elleuch, 2023). By weaving together insights

from neurobiology, linguistics, sociology, cultural studies, psychology, and non-verbal communication, the model provides a comprehensive understanding of how humans use language.

Language teaching and learning have been influenced by various theories. In the early 20th century, the psychologist and educational theorist Lev Vygotsky introduced a sociocultural theory that has significantly influenced our understanding of human cognition, language development, and learning processes (van der Veer, 2020). This sociocultural theory emerged following the Bolshevik Revolution and posits that human development is deeply intertwined with the sociocultural context in which individuals live and learn, rejecting the prevailing behaviorist and nativist perspectives at that time (Gajdamaschko, 2011). Importantly, Vygotsky emphasized the role of language in mediating social interactions and facilitating the transmission of cultural knowledge from one generation to the next. Moreover, Vygotsky's emphasis on the socio-cultural dimensions of language learning underscores the importance of incorporating authentic cultural materials and contexts into language instruction (Vygotsky, 1978, 1986). By exposing students to real-world language use and cultural practices, educators can enhance their linguistic proficiency while fostering intercultural competence and empathy.

At the core of Vygotsky's theory are several key concepts, including the zone of proximal development (henceforth ZPD), scaffolding, and the role of cultural artifacts in cognitive development (Vygotsky, 1978; Ohta, 1995). The ZPD refers to the difference between what an individual can accomplish independently and what they can achieve with the guidance and support of a more knowledgeable other, such as a teacher or peer. This concept highlights the importance of social interaction and collaborative learning in fostering cognitive growth and skill development. According to Vygotsky, language serves as both a tool for communication and a medium for thought (Vygotsky, 1978, 1986). Through social interaction, children internalize the language of their culture and gradually develop the ability to use language for various cognitive functions, such as problem-solving, planning, and self-regulation (Morin, 2012). While Vygotsky's theory has been influential, some scholars have questioned its universality and ability to fully account for the diversity of human experience and cultural variation in language development (Pathan et al., 2018). For instance, Rogoff (1990) challenges the notion of Vygotsky's ideas being universally applicable across cultures, arguing against the assumption that scaffolding, which heavily relies on verbal instruction, may not be equally effective in all cultural contexts and for all learning situations. In addition, Wertsch (1991) argues for the universality of Vygotskian principles across cultures.

The late 20th century witnessed the rise of communicative language teaching (CLT) as a response to the limitations of traditional grammar-based approaches. Scholars like Richards and Rodgers (2001) underscored the importance of CLT in prioritizing communicative competence over mere grammatical accuracy, reflecting a paradigm shift toward more interactive and student-centered language instruction. In recent years, usage-based theories of language, such as cognitive and systemic functional linguistics, have gained recognition for their focus on meaning in human communication, presenting promising implications for teaching second language learners despite the relatively limited number of empirical studies validating their applicability to L2 teaching and learning processes (Dolgova and Tyler, 2019). For instance, Larsen-Freeman (2003) highlights the dominance of grammar-based

approaches in traditional methods, emphasizing the historical focus on structural aspects of language instruction. In response, the MSMLP integrates theoretical perspectives, such as cognitive linguistics and neurocognitive approaches, to provide a deeper understanding of language processing. This model diverges from traditional language teaching paradigms, by urging educators to move beyond mere rote memorization of linguistic elements such as grammar and vocabulary.

While traditional language instruction has often focused on decontextualized language elements, neglecting the dynamic interplay between language and other facets of human experience, the MSMLP promotes a comprehensive understanding of language by emphasizing the pragmatic, morphosyntactic, semantic, and phonological dimensions. These variables encompass the dynamic ways in which language usage varies across diverse social groups, taking into account factors such as age, gender, socio-economic status, and ethnicity. In the educational setting, a crucial pedagogical dimension emerges as educators acknowledge and integrate these sociolinguistic variables into language teaching (Haerazi Irawan and Sotlikova, 2023). Educators can incorporate code-switching activities (García, 2009) to raise awareness of language variation based on social factors, aligning with the MSMLP's emphasis on sociolinguistic variables. This integration serves to furnish students with a better comprehension of how language operates as a significant marker of identity and affiliation within a broad spectrum of social contexts.

The model's social stratum acknowledges language's inherent social nature (Halliday, 1978; Miller, 1998; Matthiessen, 2017), prompting the inclusion of sociolinguistic variables, social context, and conversation analysis in the curriculum. This sociocultural awareness not only hones language skills (Drlíková, 2011), but also cultivates the capacity to navigate real-world communication with cultural sensitivity. This sociocultural awareness equips students not only with language skills but also with the ability to understand real-world communication with cultural sensitivity. Recognizing the pervasive influence of culture on language use (Hossain, 2024), educators can infuse cultural scripts, idioms, and contextual cues into the curriculum, providing students with a profound connection to linguistic content.

Additionally, the emotional stratum of the MSMLP model highlights the inseparable link between language and emotions. Kövecses (2000) acknowledges the profound influence of emotions on various language aspects, including vocabulary choice, grammar, and discourse structure. Rethinking the psychology of the language learner through emotionally engaging activities such as role-playing simulations and discussions on emotionally charged topics, as suggested by Dornyei and Ryan (2015), can foster deeper engagement and motivation among language learners. Research by Isen (2000) and Pekrun et al. (2017) has shown that emotions can positively impact cognitive processes such as memory, attention, and critical thinking, thereby enhancing language acquisition and retention. Additionally, fostering emotional intelligence through language learning, as emphasized by Salovey and Mayer (1990) and Goleman et al. (2013), equips students with important skills for enhanced social interactions and managing interpersonal relationships beyond the classroom. Language educators can leverage this dimension to create emotionally engaging learning environments (Lindquist et al., 2015), enhancing students' ability to express and interpret emotions through language, and non-verbal cues. Therefore, the emotional stratum underscores the connection between language and emotions, providing educators with a tool to craft emotionally engaging learning environments.

The gestural stratum encourages educators to transcend verbal expression, empowering students to convey meaning through words and gestures. Accordingly, language educators can enrich their teaching methodologies, transcending traditional boundaries and equipping students to navigate the complexities of real-world communication. As non-verbal cues, including gestures and body language, play a pivotal role in communication (Duncan, 1969), the gestural stratum of the MSMLP model encourages educators to move beyond verbal expression, empowering students to convey meaning not only through words but also through gestures. Accordingly, language educators can adapt their teaching methodologies with a more holistic perspective, rooted in diverse learning materials, ensuring that students are exposed to a spectrum of linguistic, social, cultural, emotional, and gestural variations, preparing them for the complexities of real-world communication.

Furthermore, the MSMLP model's incorporation of conversation analysis shifts the understanding of language to an examination of the structure and patterns of communication, moving beyond the study of individual sentences. In language teaching, educators can introduce students to the analysis of spoken or written discourse in authentic contexts. This pedagogical approach unveils language constructs meaning in ongoing conversations or written narratives, calling for a deeper comprehension of the social aspects embedded in language use. As students engage in conversation analysis, they develop a heightened awareness of the contextual nuances that shape language, contributing to their overall linguistic proficiency and sociolinguistic competence. By recognizing the importance of sociocultural context and social interaction in language learning, while also acknowledging the role of cognitive and neurological factors, the present study embraces the MSMLP approach to language teaching and learning that is both theoretically grounded and practically relevant in today's globalized and interconnected world. It aims to delve into the foundational linguistic strata of the MSMLP model, unveiling its potential in language teaching by integrating key elements such as pragmatics, morphosyntax, semantics, and phonology during soft skills lessons.

2 Methodology

2.1 Research design

The research adopts a mixed-methods approach, combining qualitative and quantitative data collection methods to ensure a thorough investigation. The study focuses on the implementation of the Multi-Stratal Model of Language Processing (MSMLP) in language teaching. The study is conducted in first-year Soft Skills classes at the Faculty of Arts and Humanities in Sfax, involving a cohort of 59 Tunisian students. Considering the significance of communication as a key component of this course, the selected setting provides an opportunity for a thorough investigation into the influence of MSMLP on language learning outcomes within a distinct cultural and educational environment.

2.2 Intervention

The research enhances the existing curriculum with supplementary activities aligned with MSMLP principles. These activities include diverse learning materials such as texts, multimedia, and real-world communication scenarios, aiming to address linguistic, social, cultural, emotional, and gestural dimensions of language learning. Implemented during the second semester of the academic year 2022–2023, the intervention consists of weekly 90-min lessons, focusing on Soft Skills development in cross-cultural settings. The sample comprises three groups of first-year students from the English department, encompassing both male and female students aged 19 to 24. Students engage in simulated workplace scenarios, collaborating with team members from diverse backgrounds to complete projects, requiring decision-making, conflict resolution, and effective communication. A sample lesson is provided in Supplementary Appendix A.

2.3 Assessment criteria and data collection

The assessment criteria, structured to evaluate various dimensions of language processing and communication within the scenarios, encompass ethnomethodological and conversational factors. Each factor includes specific observation parameters and criteria, assessing leadership skills, cultural sensitivity, communication strategies, critical thinking, semantic choices, morphosyntactic skills, phonological processing, written expression, and non-verbal communication. The assessment rubric items and observation checklist (provided in Supplementary Appendix B) were initially piloted with five participants, ensuring reliability and validity.

2.4 Data analysis

1 Quantitative Analysis: Pre-and post-assessments are analyzed using IBM SPSS V29 to identify any significant changes in students' performance.
2 Qualitative Analysis: Classroom observations and interview transcripts undergo thematic analysis to identify patterns and themes related to MSMLP implementation. Qualitative data from student feedback surveys provide additional insights into students' perspectives.

2.5 Ethical considerations

Despite the lack of necessity for formal consent procedures given the nature of the modifications, ethical considerations played an integral role in the thoughtful design and implementation of the study. Given that it involves seamlessly integrating activities into an existing course without introducing significant alterations, formal consent procedures were considered unnecessary. The added activities adhere to standard pedagogical practices, devoid of sensitive or intrusive elements. The activities, strategically crafted to enhance soft skills and language proficiency, were developed with meticulous attention to cultural sensitivity and inclusivity. Prior to implementation, transparent communication conveyed the nature and objectives of the added activities to the participants. Moreover, the assessment procedures were carefully structured to ensure the well-being and academic progress of the students. Ethical guidelines, encompassing fair evaluation, respect for diverse perspectives, and protection of

3 Results

3.1 Quantitative analysis

Pre-and post-assessments were conducted to evaluate participants' soft skills development before and after the implementation of the MSMLP-aligned curriculum. Descriptive statistics, including means and standard deviations, were computed to examine the overall distribution of data. Paired-sample t-tests were employed to assess statistically significant differences in each soft skills category (cf. Supplementary Appendix C).

1 Soft Skills Reevaluation: Participants demonstrated a statistically significant increase ($p < 0.05$) in communication abilities post-intervention. For instance, in the pre-assessment, participants often struggled to articulate their thoughts clearly during group discussions. However, post-intervention, they showed improved fluency and confidence in expressing their ideas. Additionally, the analysis revealed a notable improvement ($p < 0.01$) in Macro Conversational Factors, indicating enhanced utilization of communication strategies within broader conversational dynamics. For example, participants demonstrated improved turn-taking skills and engaged in more meaningful interactions with their peers.

2 Conceptualization: Critical thinking skills exhibited a statistically significant positive change ($p < 0.05$), indicating the curriculum's impact on the development of higher-order cognitive processes. In the pre-assessment, participants struggled to analyze complex scenarios and formulate logical arguments. However, post-intervention, they demonstrated improved analytical skills and the ability to critically evaluate information. For instance, during class discussions, participants effectively identified underlying assumptions and evaluated the validity of arguments presented by their peers.

3 Language Proficiency: Significant improvements ($p < 0.01$) were observed in various aspects of language proficiency, including Semantic choices, Morphosyntactic skills, and Phonological and Articulation aspects. In the pre-assessment, participants often made errors in word choice and grammar, leading to misunderstandings in communication. However, post-intervention, they exhibited greater accuracy and precision in language use. For example, participants demonstrated improved vocabulary usage and grammatical structures in their written assignments and oral presentations.

4 Written Communication: Participants showed a statistically significant positive change ($p < 0.05$) in written communication skills, reflecting improvements in formal and informal writing abilities. In the pre-assessment, participants struggled to organize their ideas coherently and convey them effectively in writing. However, post-intervention, they demonstrated enhanced clarity and coherence in their written work. For instance, participants produced well-structured essays with logical arguments and appropriate language conventions.

5 Non-verbal Communication: A significant enhancement ($p < 0.01$) was observed in non-verbal communication skills, indicating the curriculum's positive influence on participants' use of non-verbal cues. In the pre-assessment, participants exhibited limited awareness of non-verbal communication cues, such as body language and facial expressions. However, post-intervention, they demonstrated improved sensitivity to non-verbal cues and utilized them effectively to enhance their communication, including better posture, gestures, hand and head movements, eye contact, and facial expression. The use of paralinguistic cues such as vocalizations, fillers, and pauses was also enhanced. For example, participants made conscious efforts to maintain eye contact and use appropriate gestures during presentations.

6 Pragmatic Assessment: Participants exhibited a statistically significant improvement ($p < 0.01$) in expressiveness, highlighting the curriculum's success in aligning communication with contextual and sociocultural norms. In the pre-assessment, participants struggled to adapt their communication style to different social contexts and cultural settings. However, post-intervention, they demonstrated increased flexibility and adaptability in their communication. For example, participants effectively adjusted their language register and tone to suit formal and informal communication settings.

3.2 Qualitative analysis

Thematic analysis of participant feedback and observed behavioral changes highlight the effectiveness of this novel approach. Participants reported increased confidence in their communication abilities and highlighted the relevance of the curriculum in real-world contexts. They expressed appreciation for the diverse learning materials and interactive activities that enhanced their learning experience. For instance, participants praised the role-playing exercises and simulations, which allowed them to practice communication skills in authentic scenarios.

Additionally, observed behavioral changes, such as improved collaboration, active engagement, and effective problem-solving, further supported the positive outcomes of the intervention. Participants demonstrated greater awareness of sociolinguistic variables and cultural aspects in communication. For example, participants showed increased sensitivity to cultural differences and adapted their communication style accordingly when interacting with peers from diverse backgrounds.

3.3 Integration of quantitative and qualitative findings

The integration of quantitative and qualitative findings enriched the interpretation of results, demonstrating the effectiveness of MSMLP-aligned activities in fostering students' communication skills and preparing them for diverse linguistic and cultural contexts. The findings underscore the significance of incorporating more holistic language teaching approaches that address linguistic, social, cultural, emotional, and gestural dimensions of communication seeking to enhance language teaching practices and promote holistic soft skills development among learners.

4 Discussion

The implementation of the MSMLP in language teaching, with a focus on soft skills development, demonstrates multiple benefits in the field of language education. Rooted in the view of language as a multidimensional phenomenon, holistic language teaching inspired by the MSMLP ensures exposure to a spectrum of linguistic, social, cultural, emotional, and gestural variations, preparing students for the complexities of real-world communication. This case study delves into the foundational linguistic strata of the MSMLP, emphasizing the integration of pragmatics, morphosyntax, semantics, and phonology.

The longitudinal case study focuses on soft skills development employing real-world scenarios, and comprehensive assessments managed to assess the curriculum's impact on students' skills and demonstrate the MSMLP's applicability in language teaching and curriculum design. The results of the study, obtained through both quantitative and qualitative analyses, showcase significant improvements across various dimensions of soft skills development. The MSMLP-aligned curriculum demonstrates a positive impact on participants' leadership skills, cultural sensitivity, communication strategies, critical thinking, semantic choices, morphosyntactic skills, phonological and articulation skills, written communication, and non-verbal communication. Thematic analysis of participant feedback further enriched the interpretation of the statistical results.

For enhanced clarity and methodological expediency, a simplified version of the Multi-Stratal Model of Language Processing (MSMLP) tailored its application to the specific course context is provided in the following Figure 1 as an illustrative representation, aligning it with the course objectives and linguistic learning outcomes. The following figure illustrates how the MSMLP not only accommodates the unique features of the course but also optimally integrates with the instructional design, thereby maximizing its effectiveness in language teaching.

As demonstrated in the aforementioned figure, the interconnectedness of language components is evident and calls for more attention to these variables in language teaching and curriculum design. By acknowledging that language is inherently social, the study explored the social stratum of the MSMLP model, encouraging educators to incorporate sociolinguistic variables, social context, and conversation analysis into their teaching methodologies. The sociocultural awareness cultivated through this approach equips students with language skills and the ability to navigate real-world communication with cultural sensitivity. Effective communication strategies include the emotional stratum providing a tool to create emotionally engaging learning environments. Furthermore, the non-verbal stratum prompted educators to move beyond verbal expression, empowering students to convey meaning through diverse verbal cues.

While implementing the MSMLP in language teaching enhances various aspects of students' performances, it's essential to acknowledge certain limitations. Firstly, the effectiveness of this approach may vary based on factors such as classroom size, resources, and the individual dynamics of students. Additionally, it may require educators to adapt existing teaching methodologies, posing initial challenges and necessitating professional development. It's crucial to recognize that the model may not be a one-size-fits-all solution and might need adjustments to cater to diverse learning environments. Furthermore, the success of MSMLP implementation could be influenced by external factors beyond the educator's control, such as students' prior language exposure and external support systems. These limitations, albeit modest, underscore the importance of ongoing reflection and refinement in the application of the MSMLP, promoting a continuous improvement mindset in language teaching practices.

FIGURE 1
The MSMLP in language teaching and learning.
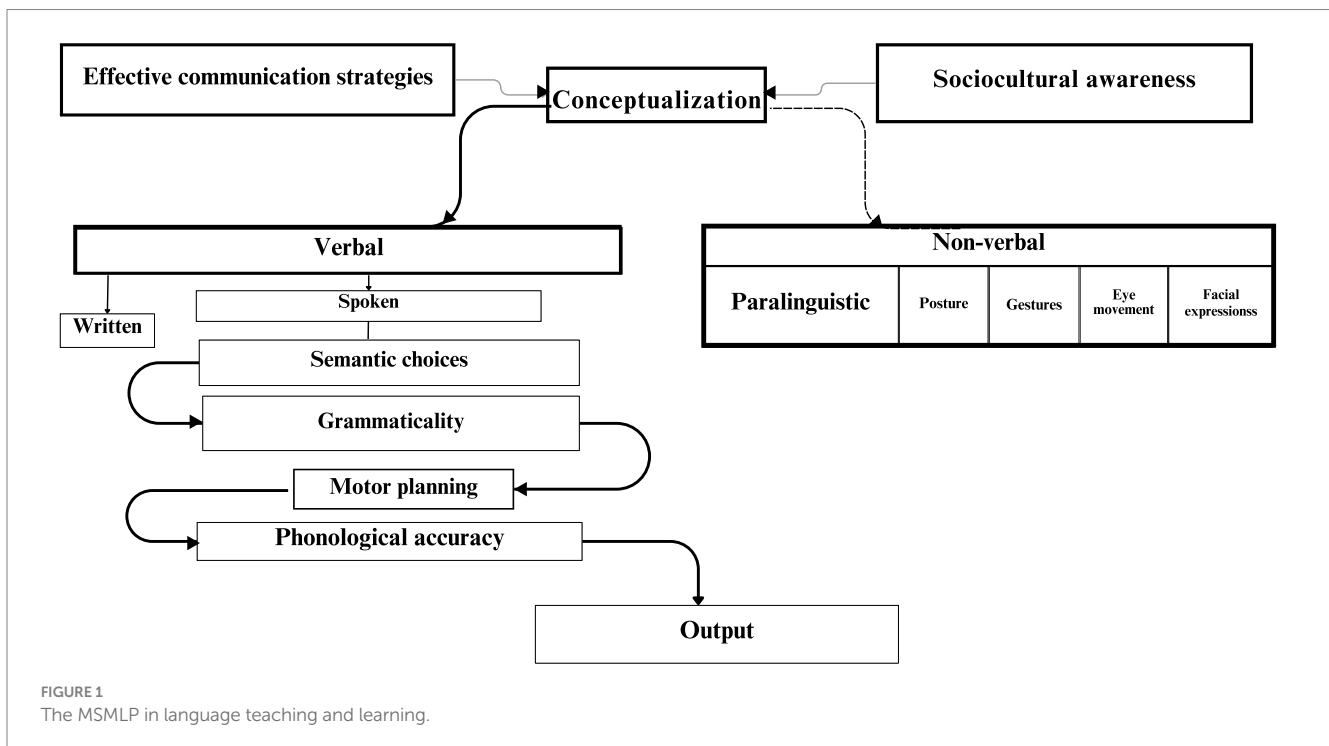
5 Conclusion

This study contributes to the growing body of research advocating for the integration of the MSMLP in language teaching, emphasizing its potential to nurture well-rounded individuals equipped with the skills to communicate effectively in a globalized and diverse world. Through its five interconnected strata - linguistic, social, cultural, emotional, and gestural - the MSMLP acknowledges the intricate dynamics of human interaction and communication. By integrating insights from neurobiology, linguistics, sociology, cultural studies, psychology, and non-verbal communication, this model provides educators with a thorough approach to language teaching and learning. The MSMLP offers a theoretical foundation that is both robust and adaptable, providing educators with the tools to cultivate language proficiency while nurturing a deeper appreciation for the socio-cultural dimensions of communication. By embracing this innovative framework, educators can inspire students to become effective communicators and culturally aware global citizens. As we move forward, continued reflection, refinement, and a commitment to ongoing improvement will be crucial in realizing the full potential of the MSMLP in shaping the future landscape of language education.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding authors.

Ethics statement

Ethical approval was not required for the study involving human participants in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was not required from the participants in accordance with the national legislation and the institutional requirements.

Author contributions

DE: Writing – original draft.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2024.1355952/full#supplementary-material

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