

Advancing Multilingual Learner Success in Agricultural Education: Analyzing English Proficiency, Instructional Practices, and Culturally Responsive Teaching

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Abstract

This study examined the pedagogical readiness of secondary school-based agricultural education (SBAE) teachers in California Central Region to support multilingual learners (MLs). Using culturally responsive teaching (CRT) and the sheltered instruction observation protocol (SIOP) as frameworks, we surveyed teachers to assess their familiarity with instructional strategies for MLs. Although many teachers reported awareness of strategies like translation tools, scaffolding, and cooperative learning, they often struggled to implement these methods consistently. The predominantly White and monolingual group of teachers faced challenges in addressing their students' linguistic and cultural diversity. Participants also highlighted a lack of systematic professional development specifically focused on teaching MLs, which further limited their ability to support beginning-level MLs effectively. While teachers expressed confidence in teaching fluent English speakers, they found it more challenging to meet the needs of MLs. The findings underscore the importance of ongoing, targeted professional development in CRT and SIOP to enhance instructional practices and improve outcomes for MLs. Future research should explore the long-term effects of targeted professional development on teacher preparedness and student success in multilingual education.

Introduction

In recent years, the United States K-12 student population has undergone a significant transformation, with the number of English language learners (ELs) reaching 4.7 million in 2021, representing 10.6% of the K-12 student body (National Center for Educational Statistics, 2024). This shift marks a notable increase from a decade earlier, when 4.1 million ELs comprised 9.2% of the population (National Center for Educational Statistics, 2024). Under the Elementary and Secondary Education Act (ESSA), EL students are those whose primary language is not English, which can hinder their ability to engage with an English-based curriculum. In this study, we use multilingual learners (MLs) instead of ELs to promote inclusivity and a positive stance on multilingualism, aiming to create a more empowering learning environment that values students' diverse linguistic backgrounds. This study sought to investigate the pedagogical support approaches SBAE teachers utilize when instructing MLs in agricultural content areas.

The evolution of multilingual education in the United States reflects an increasing awareness of the importance of linguistic diversity in fostering academic success. Historically, U.S. education mirrored the

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linguistic diversity of its regions (Kloss, 1977). However, as the nation's identity solidified, English became dominant, often sidelining other languages. This linguistic assimilation was especially striking for Native Americans and immigrants integrating into an English-speaking system (Crawford, 1998). The 20th century brought a shift to this country, characterized by a growing recognition of the rights of linguistic minorities and the need for educational equity by rising immigration and the Civil Rights Movement. Landmark decisions such as *Brown v. Board of Education* (1954) and the Civil Rights Act of 1964 laid the groundwork for protecting the rights of MLs (Banks & Banks, 2010). The Bilingual Education Act of 1968 and the *Lau v. Nichols* case in 1974 further solidified the rights of MLs, ensuring instruction that supports both language development and academic success (Crawford, 1989, 2004). The reauthorization of ESSA in 2015 continued to prioritize support for MLs, with Title III addressing the needs of these students and immigrant learners.

Our research focused on teachers and students in high school SBAE programs in California's Central Region. We examined students' English proficiency levels and educational needs, teachers' characteristics, and the instructional materials used in their classes. These factors are essential for understanding the persistent achievement gap between MLs and their English-proficient peers in the United States. On average, MLs score 20 points lower in math and 30 points lower in reading than their English-proficient counterparts (NAEP, 1996-2022). They also graduate at a lower rate (72%) compared to all students (87%), which includes MLs (U.S. Department of Education, National Center for Education Statistics, 2023). By exploring these disparities and evaluating instructional resources, this study aims to provide insights into improving educational outcomes for MLs.

With its rich linguistic and cultural diversity, California's Central Region mirrors the broader agricultural communities across the United States. Understanding the English proficiency levels and needs of students in this region is essential for developing instructional practices that effectively support MLs. Best practices emphasize creating inclusive, culturally responsive classrooms that view multilingualism as a strength (Echevarría et al., 2024). Incorporating students' native languages into instruction validates their cultural identities and enhances their comprehension of academic content (Hammond, 2015). Culturally responsive materials—such as texts, art, and historical content from various cultures—help ML students connect their experiences to the curriculum, strengthening their engagement with the learning process.

Supporting MLs in the classroom requires a multifaceted approach incorporating short and long-term strategies to ensure their academic success and language development (Echevarría et al., 2024; Hammond, 2015; Zacarian, 2023). Immediate interventions, such as language translation software and scaffolding techniques, are crucial in providing necessary support for MLs, allowing them to access content and participate meaningfully in lessons (Bavendiek, 2022; Kelly & Hou, 2022). Translation tools bridge language gaps, enabling students to engage with instructional materials and communicate effectively. Research indicates that when teachers strategically implement translation software, MLs experience enhanced comprehension and increased participation in class activities (Zacarian, 2023). Scaffolding techniques provide structured support tailored to students' diverse language proficiency levels, helping them navigate complex content.

In addition to these immediate supports, long-term strategies are vital for fostering sustainable academic growth. The sheltered instruction observation protocol (SIOP) model, developed by Echevarría, Vogt, and Short (2024), offers a comprehensive framework designed to make academic content accessible to MLs while simultaneously promoting their language skills. This SIOP model integrates language and content objectives, ensuring teachers focus on subject matter and language development. The SIOP model enables MLs to grasp complex concepts more effectively and improve their English proficiency by embedding language support within academic lessons.

Key components of the SIOP model include: (a) lesson preparation, (b) building background, (c) comprehensible input, (d) strategies, (e) interaction, (f) practice and application, (g) lesson delivery, and (h) review and assessment. Lesson preparation emphasizes setting clear language and content objectives, selecting appropriate materials, and implementing scaffolding to meet students' language needs. Building background connects students' prior knowledge and experiences to new content, which is particularly beneficial for MLs with varying educational backgrounds. Comprehensible input focuses on strategies like visuals, gestures, and modeling to present content in understandable ways to MLs. These elements create a supportive learning environment that fosters language acquisition and content mastery.

The SIOP model also emphasizes the importance of interaction and practice. Strategies within the model encourage teachers to employ learning techniques that promote higher-order thinking while interaction fosters collaborative learning among students. Collaborative opportunities are crucial for MLs, as they allow for the use of language in authentic contexts, reinforcing both language skills and content knowledge. Moreover, the practice and application component provides students with opportunities to apply their new knowledge meaningfully, solidifying their understanding of the content (McKibben et al., 2024; McKibben & Murphy, 2021) and language proficiency. By pacing the lesson appropriately and ensuring that the content is engaging, the SIOP model addresses the diverse needs of all learners in the classroom (Echevarría et al., 2024; Zacarian, 2023).

Culturally responsive teaching (CRT) enhances the effectiveness of these strategies by integrating students' cultural and linguistic backgrounds into the educational process. CRT makes learning meaningful and relevant, fostering engagement and academic success among MLs (Gay, 2018). Teachers who recognize and value students' cultural experiences create a more inclusive environment encouraging participation. Educators can better understand their backgrounds and needs by developing strong relationships with students and their families, tailoring instruction to support their growth.

To further support MLs, effective instruction involves strategically using machine translation software to bridge language gaps (Bavendiek, 2022; Kelly & Hou, 2022). Real-time translations of instructional materials and spoken language can significantly enhance communication and comprehension. While many educators know these tools are available, their usage often remains limited. Providing training on the effective use of translation software can improve MLs' access to content, enabling them to engage more fully in classroom activities and discussions.

Despite the emphasis on hands-on learning approaches toward student-centered teaching, concerns persist about educators' preparedness to engage with the growing ML population effectively (Hansen-Thomas et al., 2016). The predominantly White, English-speaking teaching workforce and limited professional development tailored to ML instruction leave many educators unprepared to meet these students' needs (Darling-Hammond et al., 2017; U.S. Department of Education, 2020-2021). Although MLs are engaged in agricultural education, they remain underrepresented in Career and Technical Education (CTE) programs (Emerick, 2022). Fewer than 30% of teachers feel confident in their ability to teach MLs (Barajas et al., 2020; Heineke & Vera, 2022), and this lack of confidence often leads to unmet student needs (Hansen-Thomas et al., 2016; Hendrix et al., 2024, McKibben et al., 2023).

Few states require specific training for teachers working with MLs, leaving many unprepared to address their unique challenges (Gándara et al., 2005; Coady et al., 2011). Teachers are known to understand the value of differentiating instruction based on student needs (Hancock et al., 2024). Professional development in culturally responsive teaching and language acquisition methodologies is essential for improving teacher preparedness (Gay, 2018). Moreover, engaging families in the educational process strengthens support for ML students and ensures the inclusion of their linguistic and cultural assets (Hammond, 2015). Establishing strong connections with families and leveraging community resources creates a more holistic learning experience, empowering ML students to succeed academically and socially.

The implications of this study extend beyond California, offering valuable guidance for educators, policymakers, and curriculum developers across the country. As the ML population grows, particularly in diverse regions like California's Central Region, it becomes increasingly essential for educators to receive the training and resources necessary to support these students. Strengthening teacher preparedness through professional development and improving access to instructional materials tailored to ML needs will be essential in bridging the achievement gap between MLs and their peers. By focusing on the challenges MLs face in agricultural education, this study aims to inform future practices that promote inclusive, student-centered learning environments where all students can thrive.

Purpose and Objectives

We sought to understand students' English proficiency in high school agricultural classes in the Central Region of California. This study explored best practices to meet ML's needs, assess current instructional materials and strategies, and the professional development needs of SBAE teachers. Three main objectives guided the study in achieving these goals: a) identify participant characteristics, including the English proficiency of teachers and students in agricultural classes; b) assess the instructional strategies and materials that school-based agricultural education (SBAE) teachers are aware of and actively use to support MLs, and c) identify respondents characteristics for teaching MLs and their confidence in teaching compared to respondents who do not have these attributes.

Theoretical Framework

This paper examines the English proficiency of secondary high school agricultural students in California's Central Region, teacher characteristics, and the instructional materials for teaching MLs. The study was grounded using Gay's (2018) framework of culturally responsive teaching (CRT), which advocates integrating students' cultural backgrounds and experiences into the educational process to create inclusive and effective learning environments. Gay emphasizes that CRT fosters academic success and affirms students' cultural identities by recognizing their heritage as an asset rather than a barrier.

This study applies Gay's CRT framework to explore how educators can adjust their teaching practices to reflect the cultural diversity of MLs. CRT advocates for pedagogical approaches that acknowledge and integrate students' cultural knowledge, language, and life experiences, enhancing engagement and learning. For instance, educators can make lessons more meaningful and relatable by incorporating agricultural examples relevant to students' communities, fostering a stronger connection to the material.

The framework emphasizes the significance of culturally relevant instructional materials that reflect students' diverse experiences. By aligning educational resources with students' cultural contexts, teachers can design learning experiences that are both academically challenging and personally validating. Gay's focus on differentiation within CRT aligns with the need to accommodate multilingual learners' varying language proficiencies and educational backgrounds (MLs). She advocates for instructional strategies such as scaffolding, collaborative learning, and incorporating students' native languages to support their academic success (Gay, 2018). Using CRT provides a lens through which researchers can address the cultural dynamics between teachers and students. This examination can offer insights into how culturally responsive teaching can lead to more equitable educational outcomes for MLs in agricultural education. By promoting practices that honor linguistic and cultural diversity, this paper aims to contribute to the ongoing discourse on inclusive education and the preparation of teachers to meet the needs of a rapidly diversifying student population.

Methodology

The study focused on a sample of school-based agricultural educators ($N = 266$) from California's Central Region who taught grades 9-12 during the 2023-2024 academic year. We used a cross-sectional research design outlined by de Vaus (2013) to achieve the study's objectives. Three criteria define the design: it excludes elements of time or longitudinal analysis, relies on pre-existing characteristic differences rather than introducing an intervention, and utilizes groups based on these pre-existing characteristics (de Vaus, 2013).

The instrument used in this study was developed following a comprehensive review of peer-reviewed research on professional development needs and MLs (Salem et al., 2023). Based on a series of positively worded statements derived from prior research, we asked participants about their awareness and use of instructional strategies and materials to assess their preparedness to meet the instructional needs of ML students across various levels. We recorded responses using a five-point Likert scale ranging from "not aware" to "very aware" and from "always use" to "never use" (Lindner & Lindner, 2024). Participants also provided information on their own and their students' characteristics, including personal details, teaching experience, and professional development history.

Before launching the instrument, we carefully evaluated its content and face validity (Creswell, 2014). SBAE faculty at Auburn University reviewed the content validity, which led to minor adjustments in wording and format. A pilot study was conducted with a comparable group of 15 California SBAE teachers from the Southern region who were not included in the final survey. Feedback from these participants, collected through an open comment section, led to minor revisions for clarity. These changes involved grouping similar questions and aligning response options. To ensure internal consistency, we calculated Cronbach's alpha ($\alpha = .88$), which exceeded the minimum reliability threshold (Privitera, 2017), confirming the instrument's appropriateness.

We used the tailored design method to encourage participation (Dillman et al., 2014). They sent an initial email to the sample, emphasizing the study's importance and encouraging participation. Potential participants received three reminder emails at seven and ten-day intervals in response to declining participation rates (Dillman et al., 2014). The survey was distributed to $N = 266$ high school SBAE teachers in California's Central Region using a large email list, with 62 responses recorded ($n = 23.3\%$). The use of the email listserv could have negatively impacted the response rate as predicted by McKibben et al (2024). Incomplete responses were excluded from the analysis, resulting in a final sample of 56 fully completed responses ($n = 21\%$).

Findings

This study provided a focused analysis of the English proficiency levels of students enrolled in high school agriculture classes within California's Central Region, along with an examination of teacher and student characteristics and the instructional materials used for ML instruction. By gaining insights into these areas, the study aims to inform the professional development needs and identify effective support systems for SBAE teachers nationwide. The instrument utilized in this research comprised 19 questions and statements organized into constructs aligned with the study's objectives. The detailed findings, based on the collected data, are discussed below.

Objective One: Identify teacher and student characteristics, including languages spoken and English proficiency of students in high school agriculture classes in the Central Region of California.

Data analysis was conducted on responses from ($n = 56$) participants, focusing on characteristics such as the languages spoken by their students, the educators' years of teaching experience, race, ethnicity, the languages they speak, and their fluency in those languages. This objective aims to capture information beyond the typical years of teaching, focusing on factors that impact multilingual learner (ML) education, such as the languages spoken by teachers and students and their respective fluency levels.

Percentage of Students Identified as Multilingual Learners

All respondents indicated they have at least one multilingual learner (ML) in their classes (Table 1). Fifteen (26.79%) of the 56 respondents reported 10% or fewer MLs, and 7 (12.50%) of the respondents indicated that more than half of their students are MLs.

Table 1

Secondary SBAE Teachers Reported Percent of ML Students

Percent of MLs	<i>f</i>	%
1-10	15	26.76
11-20	14	25.00
21-30	12	21.40
31-40	6	10.70
41-50	2	3.60
51-60	1	1.80
61-70	4	7.10
71-80	2	3.60
81-90	0	0.00
91-100	0	0.00

Percentage of Students Who Speak a Language Other than English

Not all students who speak a language other than English are officially classified as MLs. Some may have received language support earlier in their education, while others might have been designated fluent in English since enrollment in public school. Even students who have been redesignated as Fluent English Proficient require continued support, particularly in developing academic language (Echevarria et al., 2024, p. 6; Zacarian, 2023). When asked about the percentage of students in their classes who speak a language other than English, teachers reported a wide range of responses (Table 2).

Table 2

Percent of Secondary SBAE Students Who Speak a Language Other Than English as Reported by Their Teachers

Percent of Students	<i>f</i>	%
1-20	10	17.88
21-40	16	28.57
41-60	19	33.93
61-80	6	10.71
81-100	5	8.93

Note. $N = 56$

All respondents indicated they have students who speak another language. Notably, 50.00% of the teachers reported that approximately half of their students speak a language other than English. This number is higher than the number of students identified as multilingual learners, reflecting the broader diversity of classroom language backgrounds.

Student Languages

The survey also asked about the languages students most frequently speak besides English. Of the 56 respondents, 92.86% ($f = 52/56$) indicated that Spanish is the predominant language other than English, with only two mentioning other languages. Two respondents did not answer this question.

Teacher Characteristics

The data collected from 56 teachers revealed notable trends in teaching experience, racial and ethnic composition, and language proficiency (Table 3).

Table 3

Secondary SBAE Teacher Characteristics

Description	<i>f</i>	%
Years Teaching		
0-5	19	35.18
6-10	12	22.22
11-20	15	27.78
>20	8	14.81
Teacher Race		
White	44	78.57
Hispanic/Latinx	4	7.14
Multiple	3	5.35
Asian	2	3.57
Prefer not to answer	3	5.35
Teacher Ethnicity		
Not Hispanic / Latinx	47	83.93
Hispanic / Latinx	5	8.92
Prefer not to answer	4	7.14
Teacher Languages Spoken		
English Only	42	75.00
Conversational Spanish	12	21.43
Fluent Spanish	1	1.79
Conversational Mien	1	1.79

Among the 56 valid responses, all questions received a 100% response rate, except for the question about years of teaching, which had 54 responses. Respondents' teaching experience varied significantly, ranging from one to 41 years, with an overall average of 11.8 years. The most significant number of respondents were new to the profession, with 35.19% ($f = 19/54$) teaching five or fewer years. Participants self-identified their race without being provided with predefined options. Based on their responses, 78.6% (44/56) identified as "White," followed by 7.14% ($f = 4/56$) identifying as Latinx/Hispanic. Three respondents identified with multiple races, and three chose not to disclose their race. For ethnicity, respondents were given three options and asked to select one. Most notably, 83.93% ($f = 47/56$) of the educators reported that they are not Hispanic or Latinx. Seventy-five percent ($f = 42/56$) of survey participants reported that they do not speak any language other than English. Thirteen respondents (23.21%) indicated they speak another language conversationally, with 12 reporting Spanish and one reporting Mien and Spanish. Only one respondent reported being fluent in another language besides English, which was Spanish. The data highlights a predominantly White and monolingual teaching population with many newer educators and limited linguistic diversity.

Objective Two: Identify the instructional strategies and materials SBAE teachers know and use to support multilingual learners.

Respondents assessed their awareness and use of seven instructional materials and strategies related to ML instruction (Table 4).

Table 4

Awareness and Use of Instructional Strategies and Materials by SBAE Teachers

Instructional Material / Strategy	Very Aware	Aware	Use: Always	Use: Most of the Time
Realia	15/43 (34.88%)	15/43 (34.88%)	18/42 (42.86%)	15/42 (35.71%)
Small Group Discussion	19/43 (44.19%)	13/43 (30.23%)	8/42 (19.05%)	20/42 (47.62%)
Language Objectives	9/43 (20.93%)	18/43 (41.86%)	9/42 (21.43%)	15/42 (35.71%)
Cooperative Learning	11/43 (25.58%)	18/43 (41.86%)	7/42 (16.67%)	14/42 (33.33%)
Explicit Vocabulary Instruction	6/43 (13.93%)	16/43 (37.21%)	5/42 (11.90%)	15/42 (35.71%)
Sentence Frames	9/43 (20.93%)	15/43 (34.88%)	6/42 (14.29%)	11/42 (26.19%)
Translation Software	20/43 (46.51%)	10/43 (23.26%)	8/42 (19.05%)	9/42 (21.43%)

Of the 56 respondents who completed the rest of the survey, only 43 indicated their awareness, and 42 showed their use of specific instructional strategies. The rest of the participants did not respond to these questions. Awareness was measured on a five-point scale including "very aware," "aware," "somewhat aware," "not aware," and "not at all aware" (Lindner & Lindner, 2024). The table highlights responses of "very aware" and "aware." Teachers also rated how frequently they used these strategies, with choices on the five-point scale including "always," "most of the time," "about half the time," "sometimes," and "never." The table reflects responses indicating usage "always" or "most of the time."

Awareness and usage of realia, which involves using tangible objects in instruction, are high, with 69.77% ($f = 30/43$) and 78.57% ($f = 33/42$), respectively. In contrast, there is a significant gap between awareness and usage of translation software. While 69.77% ($f = 30/43$) of teachers are aware or very aware of this tool, only 40.48% ($f = 17/42$) use it consistently.

Small group discussions, another key strategy, show high adoption, with 74.42% ($f = 32/43$) of teachers aware and 66.67% ($f = 28/42$) using this method frequently. However, sentence frames, a language scaffolding tool, show a disparity between awareness (55.81%) and usage (40.48%). Cooperative learning strategies also demonstrate a gap, with 67.44% ($f = 29/43$) of teachers aware but only 50.00% ($f = 21/42$) using them consistently. Despite these gaps, the data highlights the strong adoption of collaborative learning approaches, which are central to SBAE.

Objective Three: Identify respondents' characteristics for teaching MLs and their confidence in teaching compared to respondents who do not have these attributes.

We analyzed respondent data to explore factors influencing teachers' confidence in effectively supporting MLs. These factors included racial and cultural diversity, the ability to speak languages other than English, and years of teaching experience. According to the National Center for Education Statistics (2020-2021), 80% of U.S. public school teachers are White, with many being monolingual English speakers. White, monolingual English-speaking teachers often have limited awareness of the advantages of multilingualism, the complexities of second language acquisition, and the connection between language and identity (Lucas & Villegas, 2013; Pennington et al., 2023). In our study, most respondents were White (78.6%) and monolingual English speakers (75%). Due to the relatively small sample size, no statistically significant differences were identified between White, monolingual teachers and those from other racial or linguistic backgrounds.

When comparing years of teaching experience to teachers' perceived ability to instruct different levels of ML students, no significant main effects were found, and effect sizes were small to negligible (Field, 2013). This was true for beginning ML students ($F(3,46) = 0.772$, $p = 0.516$, $\eta^2 = 0.048$), intermediate ML students ($F(3,46) = 0.734$, $p = 0.537$, $\eta^2 = 0.046$), advanced ML students ($F(3,46) = 1.576$, $p = 0.208$, $\eta^2 = 0.227$), students who no longer qualify for services ($F(3,46) = 0.325$, $p = 0.807$, $\eta^2 = 0.091$), and fluent English speakers ($F(3,46) = 0.038$, $p = 0.990$, $\eta^2 = 0.048$). The sample size limited the comparison of other characteristics, as most participants were White, English-speaking teachers.

Our findings revealed no measurable characteristics with a statistically significant impact on teachers' confidence in teaching multilingual learners. Confidence levels did not vary significantly based on years of experience, race, ethnicity, or language proficiency. Due to the homogeneity of the sample, further analyses were not feasible, as there was insufficient variability in participant characteristics to conduct more comprehensive statistical tests. Consequently, the group appeared to be relatively homogeneous, restricting the scope of the analysis.

Conclusions, Implications, and Recommendations

The findings of this study underscore the complexities involved in teaching MLs in SBAE, with a focus on California's Central Region. (Lucas & Villegas, 2013; Pennington et al., 2023). This mismatch creates significant barriers to delivering effective instruction that supports both language acquisition and content mastery for MLs.

Although many teachers know some instructional strategies to support MLs, there is a considerable gap in the consistent application of these best practices in the classroom. Awareness alone does not translate into effective implementation, as seen in the consistent discrepancy between teachers' familiarity with tools

like translation software or scaffolding techniques. For instance, while a significant percentage of educators reported being aware of strategies such as sentence frames and cooperative learning, far fewer consistently incorporated these methods into their teaching. This gap highlights the need for more targeted, strategic professional development that not only introduces these practices but also provides teachers with the resources, training, and ongoing support required to integrate them into their daily instructional routines (Clemons & Lindner, 2019; Darling-Hammond et al., 2017).

The homogeneity of the study sample revealed no statistically significant differences in teachers' confidence in teaching MLs based on race, ethnicity, or language proficiency. Additionally, years of teaching experience did not correlate with increased confidence in supporting MLs. This finding suggests that experience alone does not equip educators with the tools to meet these learners' unique challenges.

These findings highlight the need for targeted, comprehensive professional development for all teachers, regardless of background or experience. More professional development is not necessarily better; it should be strategic and ongoing, tailored to educators' needs and contexts. Many recommended strategies align with the sheltered instruction observation protocol (SIOP), a model proven effective in supporting MLs (Echevarría et al., 2024). Schools should prioritize training teachers in the CRT and SIOP frameworks, ensuring they can apply its comprehensive features, such as proactively planning lessons with scaffolding and cooperative learning and integrating student cultures and linguistic backgrounds to improve student outcomes.

Professional development in culturally responsive teaching (CRT) should be prioritized to address the gaps identified in this study. Given that many teachers are White and monolingual, it is essential to equip educators with knowledge of the benefits of multilingualism, the process of second language acquisition, and the relationship between language and identity (Gay, 2018). Educators can better support MLs in an inclusive and validating environment by fostering an understanding of these concepts.

In addition to CRT, educators should receive training on practical translation tools, which can be an invaluable resource for bridging communication gaps in the classroom (Bavendiek, 2022; Kelly & Hou, 2022). Translation software allows students with limited English proficiency to engage with instructional content more thoroughly. These tools can be used for real-time translation of written and verbal instructions, ensuring that MLs can follow lessons and participate in class activities. Furthermore, studies have shown that using translation software, when strategically integrated into classroom activities, enhances MLs' comprehension and engagement. However, teachers need training to utilize these tools effectively and ensure they complement rather than replace human instruction, supporting language development and content understanding. Although this study did not specifically investigate using large language or multi-modal artificial intelligence platforms, AI should be acknowledged as a support for writing development, pronunciation practice, and language learning supports. Initial and continuing professional development would be essential to ensure the use of AI as a supportive resource while being mindful of supplanting SBAE teachers' skills and capacities in ML instruction.

Equally important is the implementation of scaffolding techniques, particularly within the framework of the sheltered instruction observation protocol (SIOP) model. The SIOP model provides a structured approach to making content comprehensible for MLs while promoting their language development (Echevarría et al., 2024). This model emphasizes integrating language and content objectives, ensuring MLs grasp the subject matter and improve their English proficiency. Key strategies within the SIOP model, such as comprehensible input, scaffolding, and cooperative learning, offer MLs the support they need to navigate complex material. Teachers must be trained to consistently apply these strategies, ensuring that lessons are accessible to students with varying levels of language proficiency. This requires careful lesson preparation, the use of visual aids and realia, and regular assessment of both content knowledge and language progress.

The use of the SIOP model can significantly enhance instructional effectiveness for MLs. Teachers can ensure that even students with limited English proficiency can grasp the material by focusing on comprehensible input—using visuals, gestures, and modeling to explain complex concepts. Scaffolding techniques, such as sentence frames or structured group work, provide additional support, allowing MLs to engage with the content at their current language level while progressively advancing their language skills. Collaborative learning, another core aspect of the SIOP model, allows MLs to practice language in authentic, meaningful ways while interacting with their peers. Research has shown that classrooms using the SIOP model see marked improvements in ML academic performance and language acquisition over time (Echevarría et al., 2024).

In support of culturally responsive teaching (CRT), schools should also focus on developing strong connections with ML students' families and communities. Building relationships with families can provide valuable insights into students' linguistic and cultural backgrounds, enabling teachers to tailor their instruction to better meet their students' diverse needs. Schools should also prioritize using instructional materials that reflect students' cultural backgrounds, making learning more meaningful and relevant for MLs (Hammond, 2015). These efforts should be supported by ongoing, strategically designed professional development that enables educators to continuously refine their skills and stay informed about best practices for teaching diverse learners. Regular opportunities for coaching, peer collaboration, and access to resources will be essential for maintaining sustained success in addressing the needs of multilingual students (Darling-Hammond et al., 2017).

Schools should also focus on addressing barriers that hinder the consistent application of these instructional strategies. Teachers often face limited time and inadequate resources to fully implement CRT and SIOP strategies. Providing on-site instructional coaches or mentors and the necessary tools and resources would enable teachers to integrate these strategies into their classrooms more effectively. Continuous professional development opportunities that include coaching, peer collaboration, and access to updated resources will be essential for maintaining sustained success in addressing the needs of MLs.

Future research should focus on diversifying the sample population to include a broader range of educators from various racial, ethnic, and linguistic backgrounds. A more diverse sample would provide more precise insights into how teacher characteristics—such as race, ethnicity, and multilingual proficiency—affect confidence and effectiveness in teaching MLs. Additionally, longitudinal studies should be conducted to evaluate the long-term impact of professional development in CRT, SIOP, and teacher preparedness and student learning outcomes. These studies would help identify whether sustained professional learning interventions lead to meaningful improvements in MLs instructional delivery and the educational success of MLs.

Further research should also incorporate the perspectives of ML students, as their experiences can provide critical insights into the effectiveness of current teaching practices and highlight areas for improvement. Understanding the challenges MLs face in SBAE can inform the development of more tailored instructional strategies that better meet their needs. Additionally, future studies should explore the role of technology, such as translation apps and language learning tools, in supporting ML education (Bavendiek, 2022; Kelly & Hou, 2022). This research would help determine the most effective ways to integrate these tools into classroom instruction and enhance language acquisition and academic achievement for multilingual learners.

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