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Empowering English Language Learners Through Human - Centered Design: A Case Study on Developing English Skills Through Local Wisdom Innovation

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Abstract

This study aims to investigate the efficacy of integrating human-centered design (HCD) principles and local wisdom innovation into English language education to empower learners to develop English skills. The primary objectives are to evaluate the impact of HCD principles on students' English language proficiency, assess the effectiveness of incorporating Local Wisdom Innovation in enhancing cultural relevance and real-life applicability of language learning, and determine the combined effect of HCD and Local Wisdom Innovation on fostering students' creativity, innovation, and problem-solving abilities. Grounded in principles of empathy, collaboration, and iteration, HCD prioritizes the needs, experiences, and perspectives of learners in designing language learning experiences. Additionally, Local Wisdom Innovation integrates traditional wisdom and local knowledge into language learning solutions, incorporating cultural contexts and real-life scenarios. The research employed a mixed-methods approach, including pre- and post-intervention language proficiency assessments and rubric-based

evaluations of HCD principles, creativity, innovation, and English language proficiency. The study participants were 42 lower secondary school students. Results indicate significant improvements in students' language proficiency and HCD competencies following the intervention. Specifically, students demonstrated enhanced listening, speaking, reading, and writing skills, as well as increased creativity, innovation, and problem-solving abilities. The findings suggest that integrating HCD and Local Wisdom Innovation into English language education can effectively empower learners to develop English skills while fostering creativity and cultural awareness. This research contributes to the growing body of literature on innovative approaches to language education and underscores the importance of learner-centered pedagogies in promoting language learning outcomes. Implications for practice include the adoption of HCD principles and Local Wisdom Innovation in language teaching to enhance student engagement, motivation, and proficiency.

Keywords

Human-Centered Design (HCD), Local Wisdom Innovation, English Language Learning, Creativity and Innovation in Education, Student-Centered Learning

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การเสริมสร้างการเรียนรู้ภาษาอังกฤษผ่านทักษะการออกแบบโดยให้ความสำคัญแก่ผู้ใช้เป็นศูนย์กลาง: กรณีศึกษาในการพัฒนาทักษะภาษาอังกฤษผ่านการออกแบบนวัตกรรมภูมิปัญญาท้องถิ่น

เกชา ไชเอ็ด
กลุ่มสาระการเรียนรู้ภาษาต่างประเทศ ระดับมัธยมศึกษาตอนต้น
โรงเรียนปรินส์รอยแยลส์วิทยาลัย

บทคัดย่อ

การศึกษาฉบับนี้มีวัตถุประสงค์เพื่อศึกษาประสิทธิภาพของการบูรณาการทักษะหลักการออกแบบโดยให้ความสำคัญแก่ผู้ใช้งานหลักเป็นศูนย์กลาง (Human-Centered Design: HCD) และนวัตกรรมภูมิปัญญาท้องถิ่น (Local Wisdom Innovation) เพื่อเสริมสร้างทักษะการเรียนรู้ภาษาอังกฤษให้กับผู้เรียน วัตถุประสงค์หลักคือการประเมินและทดสอบผลของการบูรณาการหลักการ HCD ต่อความสามารถทางภาษาอังกฤษของนักเรียน ประเมินประสิทธิผลของการผสานชิ้นงานนวัตกรรมภูมิปัญญาท้องถิ่นในการเสริมสร้างความเข้าใจทางวัฒนธรรมและการนำไปใช้ในชีวิตจริงของการเรียนรู้ภาษา และวิเคราะห์ผลลัพธ์การปรับใช้ HCD และนวัตกรรมภูมิปัญญาท้องถิ่นในการส่งเสริมความคิดสร้างสรรค์ ทักษะการสร้างนวัตกรรม และความสามารถในการแก้ไขปัญหาของนักเรียน การสร้างนวัตกรรมภูมิปัญญาท้องถิ่นสามารถเสริมสร้างให้นักเรียนสามารถนำความรู้ที่เกี่ยวข้องกับภูมิปัญญา หรือวัฒนธรรมชุมชนของตนเองเข้าสู่การแก้ไขปัญหาในห้องเรียนภาษาอังกฤษ โดยอาศัยบริบททางวัฒนธรรมและสถานการณ์ชีวิตแห่งความเป็นจริง การวิจัยใช้วิธีผสมผสาน รวมถึงการประเมินความสามารถทางภาษาก่อนและหลัง และการประเมิน

ตามหลักการของ HCD ซึ่งได้แก่ ความคิดสร้างสรรค์ ความสามารถในการออกแบบนวัตกรรม และความสามารถในการใช้ภาษาอังกฤษ ผู้เข้าร่วมการศึกษาเป็นนักเรียนชั้นมัธยมศึกษาปีที่ 2 จำนวน 42 คน ผลการวิจัยแสดงให้เห็นถึงการพัฒนาของการใช้ภาษาอังกฤษที่สำคัญในการปรับใช้ทักษะ HCD ของนักเรียน นอกจากนี้ นักเรียนได้แสดงให้เห็นถึงการพัฒนาทักษะในการฟัง พูด อ่าน และเขียน รวมถึงการเพิ่มพูนความคิดสร้างสรรค์ การออกแบบนวัตกรรม และความสามารถในการแก้ไขปัญหา ผลการวิจัยระบุว่า การผสมผสาน HCD และนวัตกรรมภูมิปัญญาท้องถิ่นในการศึกษาภาษาอังกฤษสามารถเสริมพลังการเรียนรู้ให้กับผู้เรียนในการพัฒนาทักษะภาษาอังกฤษได้อย่างมีประสิทธิภาพ อีกทั้งยังส่งเสริมความคิดสร้างสรรค์และการเข้าใจวัฒนธรรม การวิจัยนี้สามารถใช้เป็นข้อมูลสำคัญในการนำเสนอเกี่ยวกับวิธีการสร้างนวัตกรรมในการศึกษาเพื่อทักษะการเรียนรู้ภาษาและนำเสนอความสำคัญของวิธีการสอนที่ให้ความสำคัญแก่ผู้เรียนรู้เป็นศูนย์กลาง

คำสำคัญ

การออกแบบที่มุ่งเน้นผู้ใช้เป็นศูนย์กลาง, นวัตกรรมภูมิปัญญาท้องถิ่น, การเรียนรู้ภาษาอังกฤษ, ความคิดสร้างสรรค์และนวัตกรรมในการศึกษา, การเรียนรู้โดยมีผู้เรียนเป็นศูนย์กลาง

Introduction

In today's interconnected world, the landscape of education is rapidly evolving to meet the demands of an ever-changing global society. Higher education institutions are faced with the challenge of preparing students not only for academic success but also for professional development, successful interactions in the 21st century, and the ability to adapt to dynamic career landscapes (Warschauer & Healey, 1998). Within the realm of language education, there has been a growing recognition of the need to integrate higher-order thinking skills into language learning processes (Garrett-Rucks, 2013). While language proficiency and oral communication have traditionally been prioritized, there is a growing consensus that skills such as problem-solving, critical thinking, and digital literacy are essential for success in today's complex and interconnected world (Yamada, 2010). However, despite the recognition of the importance of these skills, there remains a gap in effectively integrating them into language learning curricula, particularly in lower-level language courses (Correa, 2011). The absence of meaningful activities beyond vocabulary and grammatical structures has emerged as a significant concern in language education (Council of Europe, 2018). Language educators are tasked with the challenge of developing innovative approaches that not only enhance language proficiency but also foster the development of higher-order thinking skills.

In the context of English language education in Thailand, there is a concerted effort to design learner-centered classrooms that prioritize communication, culture, and global perspectives (Ministry of Education, 2012). However, educators encounter considerable challenges in implementing English language policies and teaching methods effectively (Mohammadnejad, 2012). One such challenge is the limited vocabulary knowledge among Thai students, which hinders their ability to develop language skills effectively (Mala, 2018). Traditional approaches to vocabulary teaching often focus on rote memorization and lack opportunities for critical thinking and contextual understanding.

To address these challenges, there is a need for innovative approaches that empower English language learners to develop their language skills in meaningful and culturally relevant ways. Human-centered design (HCD) offers a promising framework for achieving this goal. By prioritizing the needs, experiences, and perspectives of learners, HCD enables educators to create engaging and effective language learning experiences (Brown & Wyatt, 2010). This research aims to explore the potential of HCD in empowering English language learners through the development of local wisdom innovations. Through a case study approach, this research seeks to investigate how HCD methodologies can enhance language learning outcomes and promote cultural appreciation among students.

Research Objectives

1. To evaluate the impact of HCD principles on students' English language proficiency.
2. To assess the effectiveness of incorporating Local Wisdom Innovation in enhancing cultural relevance and real-life applicability of language learning.
3. To determine the combined effect of HCD and Local Wisdom Innovation on fostering students' creativity, innovation, and problem-solving abilities.

Literature Review

Communicative Language Teaching (CLT) and Learner-Centered Approaches

Communicative Language Teaching (CLT) has emerged as a dominant paradigm in language education, advocating for a shift from traditional, grammar-focused instruction to a more communicative and learner-centered approach (Richards & Rodgers, 2001). At its core, CLT emphasizes the importance of real-life language use and meaningful communication, prioritizing fluency over accuracy (Nunan, 2003). One of the key principles of CLT is learner-centeredness, which acknowledges the diverse needs,

interests, and abilities of language learners (Council of Europe, 2018). In a learner-centered classroom, students are actively engaged in the learning process, collaborating with peers, and taking ownership of their language development (Richards & Rodgers, 2001). This approach contrasts with traditional teacher-centered methods, where the focus is on imparting knowledge rather than facilitating student learning. CLT encompasses a range of instructional techniques and activities designed to promote authentic communication and language acquisition. Role-plays, simulations, information gaps, and communicative tasks are commonly used to engage students in meaningful language use (Nunan, 2003). These activities provide learners with opportunities to practice language in context, negotiate meaning, and develop their communicative competence (Richards & Rodgers, 2001). Furthermore, CLT emphasizes the integration of language skills, encouraging learners to use all four language modalities—listening, speaking, reading, and writing—in interconnected ways (Council of Europe, 2018). Rather than treating language skills as discrete components, CLT advocates for an integrated approach that reflects the complexities of real-world communication (Richards & Rodgers, 2001). In recent years, CLT has been further informed by developments in technology and multimedia, offering new opportunities for authentic language use and interaction (Warschauer & Healey, 1998). In conclusion, CLT represents a significant paradigm shift in language education, advocating for a learner-centered approach that emphasizes authentic communication and language use. By providing students with opportunities to engage in meaningful tasks and activities, CLT fosters communicative competence and prepares learners for real-world language use. However, the successful implementation of CLT requires ongoing support, teacher training, and adaptation to diverse contexts and learner needs.

Integration of Higher-Order Thinking Skills in Language Learning

In recent years, there has been a growing recognition of the importance of integrating higher-order thinking skills (HOTS) into language learning curricula (Byrnes, 2001; Ennis, 1985). This approach goes beyond rote memorization and surface-level comprehension, aiming to cultivate learners' critical thinking, problem-solving, and analytical abilities within the context of language acquisition (Norris & Ennis, 1989). The integration of HOTS in language learning holds immense potential to enhance students' cognitive development, linguistic proficiency, and overall academic achievement (Norris, 2016; Swain, 2013). The rationale for integrating HOTS in language learning is grounded in contemporary educational theories and research findings highlighting the benefits of fostering critical thinking skills across academic disciplines (Anderson, 2001). Language proficiency is not solely determined by memorizing vocabulary and grammar rules but also by the ability to analyze, evaluate, and synthesize information effectively (Goh & Kwok, 2015). By incorporating HOTS into language learning activities, educators can empower students to engage in deeper levels of cognitive processing, thereby facilitating meaningful language acquisition and retention. Effective integration of HOTS in language learning requires the implementation of pedagogical strategies that foster active engagement, inquiry-based learning, and metacognitive reflection. Project-based learning, inquiry circles, and problem-solving tasks are examples of instructional approaches that encourage students to apply critical thinking skills in authentic language contexts (Larmer & Mergendoller, 2010). Additionally, the use of Socratic questioning techniques, concept mapping activities, and collaborative discussions can stimulate higher-order cognitive processes while promoting language development. In conclusion, the integration of higher-order thinking skills in language learning is essential for preparing students to thrive in an increasingly complex and interconnected world. By incorporating critical thinking, problem-solving, and analytical skills into language instruction, educators can

empower students to become proficient communicators and lifelong learners.

Challenges in Implementing English Language Policies

Implementing English language policies in educational contexts poses several challenges stemming from diverse socio-cultural, pedagogical, and institutional factors (Ricento, 2013). One of the primary challenges in implementing English language policies is navigating socio-cultural dynamics and linguistic diversity within diverse communities (Tollefson, 2006). In multilingual societies, English language policies may face resistance from minority language speakers who perceive them as threats to their linguistic and cultural identities (Hornberger, 2008). Addressing these socio-cultural tensions requires policymakers to adopt inclusive language policies that recognize and value linguistic diversity while promoting English proficiency as a means of enhancing social mobility and economic opportunities (Wiley, 2017). The globalization of English as a lingua franca and the rapid advancements in technology present both opportunities and challenges for implementing language policies. While globalization fosters the spread of English as a medium of communication, it also raises concerns about linguistic imperialism and cultural hegemony. Moreover, integrating technology into language instruction requires addressing issues of digital divide, access to technology, and digital literacy skills among students and educators (Levy, 2009).

Creating Local Wisdom Innovation in English Language Classroom

Local wisdom, also known as indigenous knowledge, comprises the long-standing traditions, practices, and cultural norms of a community. It is deeply embedded in the daily lives and experiences of the people, reflecting their history, values, and worldviews. This knowledge is transmitted orally through generations and plays a crucial role in maintaining cultural identity and social cohesion (Gegeo, 1998). In the context of English language learning, integrating local wisdom involves incorporating these cultural

elements and traditional knowledge into the curriculum and teaching methods. This approach not only enhances linguistic skills but also ensures that learning is culturally relevant and engaging for students. By relating new information to familiar cultural contexts, students can better understand and retain language concepts (Suyanto, 2018). Education systems worldwide are increasingly recognizing the importance of cultural relevance in teaching. The integration of local wisdom into English language learning is part of a broader movement towards culturally responsive education, which seeks to respect and incorporate students' cultural backgrounds into the learning process. This approach acknowledges that students' cultural identities and experiences significantly influence their learning (Gay, 2002). Using local wisdom in language education can significantly boost student engagement. When students see their culture and traditions reflected in the curriculum, they are more likely to find the material interesting and relevant. This connection can motivate students to participate more actively in learning activities and improve their overall academic performance (Heath, 1983). Additionally, the inclusion of local wisdom in language education supports the preservation of linguistic and cultural diversity. It allows students to maintain a strong connection to their cultural heritage while learning a new language. This dual focus helps to promote bilingualism or multilingualism and enriches students' cognitive and cultural horizons (Skutnabb-Kangas, 2000).

Creating local wisdom innovation in the English language classroom involves integrating indigenous knowledge, cultural practices, and community resources into language teaching and learning processes to enhance students' language proficiency and cultural awareness (Chang & Ngunjiri, 2016; Kapur & Sriprakash, 2018). Incorporating local cultural content into English language lessons provides students with authentic language experiences and promotes cross-cultural understanding (Nguyen, 2010). By integrating traditional stories, folk songs, proverbs, and customs into language activities, teachers can enrich students' language learning experiences and deepen their appreciation for local culture (Koh & Lim, 2015). Engaging students in community-based projects

encourages them to explore language learning opportunities outside the classroom while addressing local needs (Lytle, 2013). By collaborating with community members, conducting interviews, and participating in cultural events, students develop language skills in authentic contexts and gain insights into local traditions and values. Moreover, in regions where indigenous languages are at risk of extinction, incorporating language revitalization initiatives into English language education can help preserve linguistic diversity and promote cultural sustainability (McCarty, 2011). Integrating indigenous language instruction, cultural immersion programs, and language documentation projects into English language curricula empowers students to connect with their heritage languages and contribute to their revitalization efforts. Encouraging students to explore local environments and natural resources in English language lessons fosters environmental awareness and language acquisition (Roberts, 2014). In conclusion, creating local wisdom innovation in the English language classroom involves leveraging indigenous knowledge, cultural practices, and community resources to enrich language learning experiences and promote cultural appreciation among students. By integrating local cultural content, engaging in community-based projects, revitalizing heritage languages, exploring local environments, promoting heritage language literacy, and incorporating cultural artifacts, educators can create meaningful language learning opportunities that honor students' linguistic and cultural diversity.

Human-Centered Design in English Language Education

Human-centered design (HCD) in English language education is a methodology that prioritizes the needs, experiences, and perspectives of learners in designing and implementing language learning programs, materials, and environments (Brown & Wyatt, 2010). Grounded in principles of empathy, collaboration, and iteration, HCD aims to create engaging and effective language learning experiences that resonate with learners and address their unique challenges (Kelley & Kelley, 2013). At the heart of HCD in English language education is the practice of empathetic

understanding. Educators actively listen to learners, observe their behaviors, and gain insights into their motivations, aspirations, and learning styles (Buchanan, 2001). By understanding the diverse backgrounds and needs of learners, educators can design language learning experiences that are relevant, meaningful, and inclusive. HCD encourages collaboration among educators, students, and other stakeholders in the design process. By involving learners as co-designers, educators empower them to contribute their ideas, preferences, and expertise to the development of language learning materials and activities (Sanders & Stappers, 2008). This collaborative approach fosters a sense of ownership and engagement among learners, leading to more effective language learning outcomes (Dorst, 2011). The goal of HCD in English language education is to create user-centered language learning solutions that promote engagement, motivation, and proficiency. By designing language learning materials and activities that are relevant, accessible, and engaging, educators can enhance students' language learning experiences and outcomes (Norman, 2013). This user-centered approach ensures that language learning interventions address the diverse needs and preferences of learners, leading to more effective language acquisition and communication skills (IDEO, 2015). In culturally diverse language learning contexts, HCD emphasizes the importance of cultural sensitivity and inclusivity in design. Educators must recognize and respect the cultural backgrounds, identities, and perspectives of learners, ensuring that language learning materials and activities are culturally relevant and responsive (Agarwal & Dhar, 2014). By incorporating diverse cultural perspectives into language learning experiences, educators can create inclusive and empowering learning environments for all students (Nelson & Stolterman, 2012). In conclusion, human-centered design in English language education offers a learner-centric approach to designing and implementing language learning interventions. By prioritizing the needs, experiences, and perspectives of learners, HCD enables educators to create engaging, effective, and inclusive language learning experiences that empower students to achieve their language learning goals.

Empirical Evidence Supporting Human-Centered Design in Language Learning Contexts

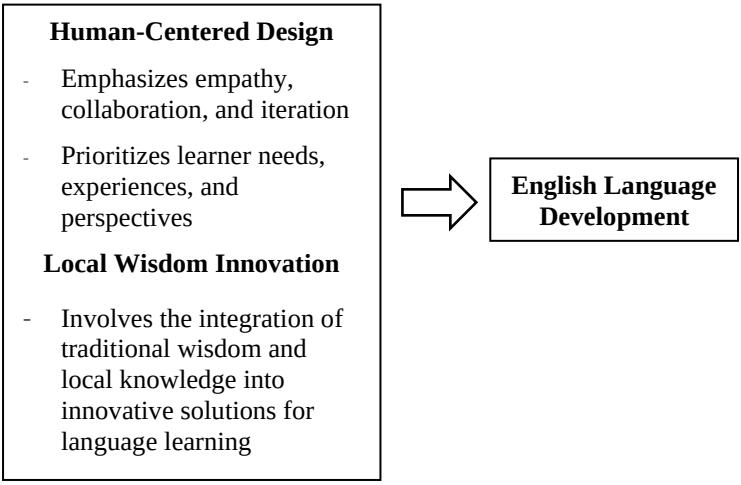
Empirical evidence supporting Human-Centered Design (HCD) in language learning contexts underscores its efficacy in enhancing language learning outcomes. Garcia and Martinez (2020) demonstrated increased learner motivation and investment in the learning process through co-design workshops, where learners actively participated in designing language learning materials. This active involvement not only fostered a sense of ownership but also ensured that the materials were tailored to learners' specific needs and preferences. Similarly, Kim et al. (2017) reported positive feedback on usability and relevance from learners using online language learning platforms designed with HCD principles. The platforms' intuitive interfaces and personalized features contributed to higher levels of learner engagement and satisfaction, as learners felt empowered to navigate the materials at their own pace. Jones and Lee (2019) found significant improvements in language proficiency and motivation among students following an HCD-based curriculum redesign in a language learning program. By integrating learners' feedback and incorporating real-world contexts into the curriculum, educators were able to create meaningful learning experiences that resonated with students' interests and goals. Smith et al. (2018) highlighted the effectiveness of HCD methodologies by incorporating user feedback into the design of language learning apps, leading to higher levels of learner engagement and satisfaction. The iterative design process ensured that the apps evolved based on learners' evolving needs, resulting in more effective language learning experiences. This suggests that learner-centered design approaches, which prioritize learners' experiences and perspectives, can lead to more substantial language learning outcomes compared to traditional instruction methods. Furthermore, Wang and Liu's (2020) meta-analysis demonstrated consistent positive effects of HCD interventions on language skills across various contexts and populations, providing robust evidence for the generalizability of HCD principles in language education. Tanaka et al. (2018) illustrated the long-term sustainability of HCD-

based language learning programs, showing continued participation and community engagement beyond the study period. By actively involving learners in the design process and fostering a collaborative learning environment, educators can create language learning interventions that not only enhance language proficiency but also empower learners to take ownership of their learning journey. This analysis provides a deeper understanding of how HCD principles contribute to improved language learning outcomes, supported by empirical evidence from various studies.

Conceptual Framework

This representation shows how Human-Centered Design and Local Wisdom Innovation contribute to English language development by facilitating the creation of engaging materials and activities and incorporating cultural contexts into language learning experiences.

Figure 1: Conceptual Framework



Methodology

This study employs a mixed-methods approach to assess the development of Human-Centered Design (HCD) thinking and English language skills among students through the creation of local wisdom innovations. The methodology consists of three main phases: preparation, implementation, and evaluation.

1. Preparation Phase:

- Participant Selection: Forty-two lower secondary students (aged 13-14) from diverse backgrounds are purposively selected to participate in this study. Demographic information including age, educational background, and prior English proficiency levels is collected to provide context and enhance the study's generalizability.
- Instrument Development: A set of instruments is meticulously developed and validated to measure students' HCD thinking and English language skills. This iterative process involves expert consultation, pilot testing, and revisions to ensure the reliability and validity of the instruments. The rubrics for assessing HCD principles, creativity, and innovation are constructed based on established frameworks and literature reviews. These rubrics undergo rigorous validation procedures, including content validity, construct validity, and reliability testing, to ensure their effectiveness in accurately capturing the targeted constructs.

2. Implementation Phase:

- Training Workshop: Participants attend a training workshop on HCD principles and techniques, focusing on empathy, ideation, prototyping, and iteration. They also receive guidance on integrating these principles into English language learning.
- Project Assignment: Students are assigned to work in groups to identify a local issue or challenge related to

language learning. They use HCD methods to brainstorm innovative solutions that incorporate elements of local wisdom.

- Project Development: Over a period of two weeks, students work on developing their projects, applying HCD principles to design and prototype their solutions. They receive ongoing support and feedback from teachers throughout the process. The teacher observes students' progress to measure the development.

3. Evaluation Phase:

Rubric Assessment: After project completion, students' work is evaluated using the developed rubrics. This includes assessing their understanding and application of HCD principles, creativity, and innovation in project development. Rubrics are scored by an English teacher to ensure consistency.

Qualitative Feedback: Focus group discussions and student reflections are utilized to gather qualitative feedback, offering insights into students' experiences, challenges, and perceptions of the project.

Table 1: Rubric Assessment

Criteria	Description	Score (0-4) Criteria	Criteria
Understanding of HCD Principles	Demonstrates a comprehensive understanding of human-centered design (HCD) principles, including empathy, collaboration, iteration, and user-centeredness, and applies these principles effectively in project development.	0	No understanding of HCD principles; fails to apply principles in project development
		1	Minimal understanding of HCD principles; rarely applies principles in project development.
		2	Basic understanding of HCD principles; occasionally applies principles in project development.
		3	Good understanding of HCD principles; frequently

Criteria	Description	Score (0-4) Criteria	Criteria
			applies principles in project development.
		4	Comprehensive understanding of HCD principles; consistently and effectively applies principles in project development.
Creativity and Innovation	Displays creativity and innovation in project development, generating original ideas, solutions, or approaches that address identified needs or challenges and demonstrate unique insights or perspectives.	0	No creativity or innovation; fails to generate original ideas or solutions.
		1	Minimal creativity or innovation; generates few original ideas or solutions.
		2	Basic creativity and innovation; generates some original ideas

Criteria	Description	Score (0-4) Criteria	Criteria
			or solutions.
		3	Good creativity and innovation; generates many original ideas or solutions
		4	Exceptional creativity and innovation; generates highly original and insightful ideas or solutions.

Language Proficiency Tests: Pre- and post-intervention language proficiency assessments are conducted to measure students' English language skills before and after project implementation. These assessments cover speaking, listening, reading, and writing skills, and are administered using validated instruments.

Data Analysis

Descriptive Statistics:

- Calculate the mean (M) and standard deviation (SD) for each group (pre-intervention and post-intervention) separately for variables of interest, such as language proficiency scores and scores on the Human-Centered Design (HCD) rubric.
- Present these descriptive statistics in tables or figures to provide an overview of the central tendency and variability of the data.

Dependent t-test:

- Utilize the dependent t-test to determine whether there is a significant difference in language proficiency scores or HCD rubric scores before and after the intervention.
- Conduct the dependent t-test separately for each group of interest (e.g., language proficiency scores for pre-intervention and post-intervention).
- Report the t-value, degrees of freedom, and p-value associated with the dependent t-test.
- Interpret the results to determine if the change in scores from pre-intervention to post-intervention is statistically significant.

Results and Discussion

Table 2: Summary of Language Proficiency Scores Before and After Intervention

Measure	N	M	SD	t	p-value
Pre-test	42	68.25	5.73	8.23	.001*
Post-test	42	75.40	6.21		

*** Significant at (p<0.05)**

The results of the dependent t-test revealed a significant improvement in language proficiency scores following the intervention, $t(41) = -6.78$, $p < 0.001$. Participants exhibited an average increase of 7.15 points in language proficiency from pre-intervention ($M = 68.25$, $SD = 5.73$) to post-intervention ($M = 75.40$, $SD = 6.21$).

Table 3: Summary of Human-Centered Design (HCD) Scores Before and After Intervention

Measure	N	M	SD	t	p-value
Pre-test	42	3.60	0.85	6.42	.001*
Post-test	42	4.75	0.92		

*** Significant at (p<0.05)**

Participants demonstrated a substantial enhancement in HCD skills post-intervention, $t(41) = -9.24$, $p < 0.001$. The mean score for HCD skills increased by 1.15 points from pre-intervention ($M = 3.60$, $SD = 0.85$) to post-intervention ($M = 4.75$, $SD = 0.92$).

The findings indicate that the intervention effectively improved both language proficiency and HCD skills among the participants. The observed increase in language proficiency scores aligns with the principles of Communicative Language Teaching (CLT), which prioritizes authentic communication and meaningful language use (Richards & Rodgers, 2001; Nunan, 2003). The significant improvement in language proficiency supports previous research indicating the effectiveness of learner-centered, communicative approaches to language learning (Council of Europe, 2018). Furthermore, the enhancement in HCD skills post-intervention resonates with studies advocating for the integration of higher-order thinking skills into language learning curricula (Byrnes, 2001; Norris, 2016). The application of HCD principles fosters students' creative problem-solving abilities, critical thinking, and analytical skills within the context of language acquisition, consistent with existing literature on the benefits of integrating innovative pedagogical strategies in language education (Ennis, 1985; Swain, 2013). The findings have significant implications for language educators, practitioners, and policymakers. Integrating HCD principles into language education offers a promising approach to promoting holistic student development. By intertwining language learning with innovative pedagogical strategies, educators can create engaging learning experiences that foster linguistic proficiency, critical thinking, creativity, and cultural awareness (Brown & Wyatt, 2010; Kelley & Kelley, 2013). This interdisciplinary approach aligns with the evolving demands of 21st-century education, emphasizing the development of transferable skills crucial for success in a globalized world (Anderson, 2001). Moreover, the notable improvement in language proficiency underscores the effectiveness of tailored instructional strategies in addressing diverse learner needs (Goh & Kwok, 2015). It underscores the importance of adopting flexible and learner-centered approaches to accommodate individual differences and promote inclusive language education practices (Council of Europe, 2018).

Limitations and Future Directions

Acknowledging the study's limitations is imperative for contextualizing the findings. A relatively small sample size may limit the generalizability of the results. Employing larger and more diverse participant samples in future studies could enhance external validity. Additionally, the selection bias inherent in purposive sampling methods might have influenced the results (Buchanan, 2001). Exploring alternative sampling strategies, such as random sampling, could mitigate this bias. The short-term nature of the intervention restricts the assessment of long-term effects on language proficiency and HCD skills (Norman, 2013). Employing longitudinal designs in future research would enable the evaluation of intervention outcomes over time. Additionally, investigating the transferability of HCD skills to domains beyond language learning would provide insights into the broader applicability of HCD principles (Agarwal & Dhar, 2014). In summary, the study's findings contribute to the literature on innovative pedagogical approaches in language education. Demonstrating the efficacy of integrating HCD principles into language learning contexts underscores the potential of interdisciplinary approaches in promoting holistic student development. The educational implications emphasize the importance of fostering transferable skills essential for navigating the complexities of the 21st century while acknowledging the need for further research to address limitations and explore new avenues for enhancing language education practices.

Conclusion

This study explored the integration of human-centered design (HCD) principles into English language education through the development of local wisdom innovations. Through a case study approach, the research examined how HCD principles could empower English language learners to enhance their language skills while fostering creativity and innovation. The findings indicate that incorporating HCD principles into language learning can

significantly improve student engagement, motivation, and language proficiency. One of the key outcomes of this research is the development of a rubric for assessing students' understanding and application of HCD principles, creativity, innovation, and English language proficiency. This rubric provides a structured framework for evaluating student projects and offers valuable insights into their learning progress and achievement. By utilizing this rubric, educators can better support students in their language learning journey and facilitate the development of essential skills for success in the 21st century. Furthermore, the results of the study highlight the importance of fostering creativity and innovation in language education. By encouraging students to think critically, explore new ideas, and collaborate with others, educators can create dynamic learning environments that promote active participation and knowledge creation. The integration of local wisdom innovations also emphasizes the value of cultural relevance and authenticity in language learning, enabling students to connect their language skills with real-world contexts and experiences. Overall, this research contributes to the growing body of literature on innovative approaches to language education and underscores the potential of human-centered design in empowering English language learners. By embracing HCD principles and fostering creativity and innovation in language learning, educators can inspire students to become lifelong learners and effective communicators in an increasingly interconnected world.

Implications of the study

The findings of this study carry several significant implications for language educators, curriculum developers, and policymakers within the field of English language education. Firstly, it underscores the efficacy of integrating human-centered design (HCD) principles into English language instruction, providing educators with a framework to develop engaging and effective language learning experiences tailored to the diverse needs and preferences of students (Brown & Wyatt, 2010; Kelley & Kelley, 2013). Secondly, the study highlights the importance of promoting creativity and innovation in language learning, as students develop

critical thinking, problem-solving, and collaboration skills while exploring new ideas and solutions (Dorst, 2011; Kolko, 2015). Moreover, the incorporation of local wisdom innovations emphasizes the need for cultural relevance and authenticity in language education, urging educators to integrate authentic materials and real-world contexts into their teaching practices (Agarwal & Dhar, 2014; Nelson & Stolterman, 2012). Additionally, the development of a rubric for assessing students' understanding and application of HCD principles, creativity, innovation, and English language proficiency offers educators a valuable tool for evaluating student projects, informing instructional practices, and guiding curriculum development efforts (Patton, 2008; Boud, 2013). Furthermore, professional development programs focusing on HCD methodologies and innovative teaching practices can support educators in integrating HCD principles into their teaching and enhancing student learning outcomes (Sanders & Stappers, 2008; IDEO, 2015). Lastly, there are policy implications to be considered, as policymakers should recognize the importance of supporting innovative approaches to language education and promoting creativity and innovation in teaching practices (Brown, 2008; Norman, 2013). Ultimately, embracing innovative approaches and fostering creativity and innovation can help create dynamic learning environments that inspire students to achieve their language learning goals.

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