INTERACTIVE PROJECT BASED PEDAGOGY AND CULTURALLY DIVERSE LEARNERS

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Abstrak

Penelitian ini bertujuan untuk merancang, mengembangkan, dan mengevaluasi model pembelajaran berbasis proyek interaktif yang dapat mengakomodasi keragaman budaya siswa dan meningkatkan motivasi, partisipasi, dan prestasi akademik mereka. Dengan menggunakan pendekatan Penelitian dan Pengembangan (R&D), model ini dirancang secara iteratif melalui tiga fase utama: analisis kebutuhan, desain prototipe, dan pengujian serta revisi. Populasi penelitian terdiri dari siswa kelas sebelas dari UMN Al-Washliyah dengan latar belakang budaya yang beragam. Data dianalisis secara kuantitatif menggunakan statistik deskriptif dan uji-t, dan secara kualitatif melalui analisis tematik. Hasil penelitian menunjukkan bahwa implementasi model pembelajaran berbasis proyek interaktif secara signifikan meningkatkan motivasi belajar (p<0,01), partisipasi aktif siswa, dan pemahaman konsep mata pelajaran (peningkatan rata-rata 12,5%). Selain itu, siswa melaporkan peningkatan kesadaran budaya dan keterampilan kolaborasi lintas budaya. Kesimpulannya, model pembelajaran yang dikembangkan telah terbukti efektif dalam memenuhi kebutuhan belajar siswa dengan keragaman budaya, sehingga dapat digunakan sebagai referensi bagi lembaga pendidikan dalam merancang strategi pedagogis inklusif dan interaktif.

Kata kunci: *PjBL, pedagogy, speaking skill, culturally responsive*

Abstract

This study aims to design, develop, and evaluate an interactive project-based learning model that can accommodate students' cultural diversity and improve their motivation, participation, and academic achievement. Using a Research and Development (R&D) approach, the model was designed iteratively through three main phases: needs analysis, prototype design, and testing and revision. The study population consisted of eleventh-grade students from UMN Al-Washliyah with diverse cultural backgrounds. Data were analyzed quantitatively using descriptive statistics and t-tests, and qualitatively through thematic analysis. The results showed that the implementation of the interactive project-based learning model significantly increased learning motivation (p<0.01), active student participation, and understanding of subject concepts (an average increase of 12.5%). n addition, students reported increased cultural awareness and cross-cultural collaboration skills. In conclusion, the developed learning model has proven effective in meeting the learning needs of students with cultural diversity, so it can be used as a reference for educational institutions in designing inclusive and interactive pedagogical strategies.

Keyword: *PjBL, pedagogy, speaking skill, culturally responsive*

1. INTRODUCTION

Pedagogical techniques have changed as a result of the quick adoption of digital tools in education, especially in classes with a diverse student body and language learners. Effective teaching in the twenty-first century necessitates not only digital literacy but also interactive, contextual, and culturally relevant instructional approaches. Nonetheless, a lot of instructional approaches continue to rely on decontextualized content, which lowers the authenticity of learning experiences and restricts student involvement.

The swift integration of digital tools into classrooms has fundamentally reshaped pedagogical techniques, particularly in settings characterized by heterogeneous student populations and language learners. While educators now possess unprecedented opportunities to deliver multimodal content, effective twenty‑first‑century teaching demands more than mere technological proficiency; it requires instructional designs that are interactive, situated within authentic contexts, and attuned to cultural nuances. Consequently, lesson plans that embed collaborative platforms, real‑time feedback mechanisms, and culturally resonant case studies tend to foster deeper engagement among learners who otherwise might remain peripheral participants. Nevertheless, a substantial proportion of contemporary curricula persist in presenting decontextualized material, thereby diminishing the perceived relevance of knowledge and constraining student involvement. This paradox—wherein high‑tech environments coexist with low‑authenticity pedagogy—underscores the urgency of reconciling digital affordances with meaningful, learner‑centered experiences.

Building on this observation, it follows that digital literacy must be coupled with pedagogical strategies that foreground cultural relevance and contextualized practice if instructional efficacy is to be sustained. When teachers scaffold language acquisition through authentic digital simulations, such as virtual exchanges with native speakers or culturally specific problem‑solving tasks, learners not only develop linguistic competence but also acquire transferable skills rooted in real‑world applicability. Moreover, the incorporation of formative analytics enables educators to tailor interventions to individual learner profiles, thereby mitigating the risk of generic, one‑size‑fits‑all instruction. As a result, classrooms that deliberately align technological tools with culturally responsive curricula tend to exhibit heightened motivation, increased participation, and improved learning outcomes across diverse student cohorts. In sum, the convergence of digital fluency and contextualized, culturally aware pedagogy constitutes the cornerstone of effective modern instruction.

Bell stated (2010) that PBL is a key strategy for creating independent thinkers and learners. Children solve real-world problems by designing their own inquiries, planning their learning, organizing their research, and implementing a multitude of learning strategies. Students flourish under this child driven, motivating approach to learning and gain valuable skills that will build a strong foundation for their future in our global economy.

One promising approach to enhancing digital pedagogy is the systematic integration of local cultural content into digitally mediated learning environments, a strategy that not only supplies learners with meaningful contextual scaffolds but also reinforces communal identity and promotes sustained engagement. By embedding indigenous narratives, symbols, and practices within multimedia platforms, educators create affordances that align learners' prior knowledge with new concepts, thereby facilitating deeper cognitive processing; for instance, when a history module incorporates oral traditions specific to a region, students are more likely to internalize chronological frameworks because the material resonates with their lived experiences. Moreover, the convergence of culturally resonant content with interactive pedagogical designs—such as collaborative problem‑based tasks, synchronous communication tools, and adaptive feedback mechanisms—empowers learners to construct knowledge actively, as they negotiate meaning through peer dialogue, negotiate

cultural nuances, and apply insights to authentic, real‑world challenges. Consequently, the synergistic effect of cultural relevance and interactive technology cultivates a learning ecology wherein identity affirmation and intellectual curiosity mutually reinforce one another.

Hafner (2011) shows that How it is possible to draw upon students' literacy practices in unstructured, informal learning contexts in order to design a technological learning environment capable of fostering learner autonomy in a structured setting. As we have seen, the students in this study took advantage of the affordances of the technological learning environment in order to exercise high degrees of autonomy. We argue that students invested in this digital video project because: (a) students were engaged in a 21st century task utilizing multimodal texts, media, and online environments that were meaningful to them; and (b) students were able to share their videos through the Internet, engaging an authentic audience including not only their peers but also their other social networks and the wider public. Thus, student learning in this project was not confined to the classroom in the traditional way. Rather, as students shared their videos, the traditional boundaries of the classroom broke down and learning extended into virtual spaces that were under the control of the learners, not the teachers.

CRT and project-based learning often yield positive results. Therefore, curricula, teaching materials, and pedagogies should be revised accordingly in contexts where culturally and linguistically different learners exist. In line with this, teacher education programs also aim to increase teacher candidates' awareness, knowledge, and skills related to CRT and project-based learning.

Integrating regional cultural content into digitally mediated learning environments is one promising strategy. Deeper participation, identity strengthening, and meaningful context are all facilitated by local culture. It allows students to actively create knowledge through teamwork, communication, and practical problem-solving when paired with interactive teaching. The Digitized Local Cultural Project (DLCP) Model is proposed as an innovative pedagogical approach that integrates:

1. Project-based learning principles
2. Digital tools and multimedia production
3. Culturally exploration

This model encourages students to create digital artifacts (e.g., videos, podcasts, digital storytelling) based on local cultural themes, thereby promoting both linguistic competence and cultural awareness. Despite the growing interest in digital and culturally responsive pedagogy, limited research has examined how digitized cultural projects function within an interactive pedagogical framework, particularly in improving students' communicative performance and engagement. Therefore, this study aims to:" Analyze the effectiveness of the DLCP model in enhancing students' learning outcomes". (Kehl et al., 2024)

2. METHOD

This study employed a quasi-experimental design combined with qualitative support data. The research compared an experimental group using the Interactive Project Based Pedagogy model with a control group using conventional instruction. Undergraduate students taking an English language course made up the participants. Twenty pupils in all. To ensure the validity and reliability of the data, this study employed multiple research instruments that captured both quantitative and qualitative dimensions of the learning process. A speaking performance test, administered as both a pre-test and post-test, was used to measure students' progress in key

aspects of speaking ability, including fluency, pronunciation, vocabulary use, and coherence. In addition, an observation checklist was utilized during classroom activities to systematically document students' levels of engagement, interaction, and participation throughout the implementation of the Interactive Project Based model. To gain insight into learners' perspectives, a structured questionnaire was distributed to assess students' perceptions of the learning experience, particularly in relation to motivation, cultural relevance, and the use of digital tools. Furthermore, semi-structured interviews were conducted to provide deeper qualitative insights into students' experiences, challenges, and attitudes toward the instructional model. The combination of these instruments enabled comprehensive data triangulation, thereby strengthening the credibility and richness of the research findings. The research was conducted in four stages; Pre-test to measure baseline speaking ability, treatment phase such as students in the experimental group implemented digital cultural projects, Activities included research, collaboration, content creation, and presentation; Post-test to assess improvement**;** Data collection through observation and interviews.

3. HASIL DAN PEMBAHASAN

The need analysis was conducted through questionnaires, classroom observations, and initial interviews with students from diverse cultural backgrounds. The results showed that: - 78% of students experienced anxiety about speaking in English. - 72% stated that speaking lessons did not accommodate their cultural background. - 81% of students desired contextual and collaborative project-based learning.

These findings underscore the urgency of developing a speaking learning model that integrates the principles of project-based learning and culturally responsive teaching. This aligns with recent literature that emphasizes the importance of inclusive pedagogy in multicultural contexts.

3.1. Improvement in Learning Outcomes

The findings revealed that students in the experimental group showed a statistically significant improvement in speaking performance compared to the control group. The post-test scores indicated:

- Increased fluency
- Improved pronunciation
- Expanded vocabulary

3.2. Student Engagement

Observation data showed higher levels of:

- Participation
- Collaboration
- Motivation

Students actively engaged in discussions and demonstrated greater confidence during presentations.

3.3. Design the Project Blueprint

COMPONENT	WHAT TO INCLUDE	HOW IT SUPPORTS SPEAKING
Driving Question	Culturally resonant , open ended	Sparks discussion and debate
Milestones	Research script drafting, rehearsal final presentation	Provides multiple speaking practice points
Roles & Responsibilities	Presenter, Interviewer, Visual designer,	Ensures every learner has a voice

	data analyst	
Assessment Rubric	Criteria for content, language accuracy, delivery, cultural sensitivity	Aligns oral performance with learning outcomes

The findings of this study clearly demonstrate that the Interactive Project Based model is effective in enhancing both linguistic and affective learning outcomes. Students not only showed measurable improvement in their speaking performance, such as greater fluency, more accurate pronunciation, and richer vocabulary use but also exhibited increased confidence and willingness to communicate.

These improvements are consistent with constructivist principles, which posit that learners develop knowledge more effectively when they are actively engaged in meaningful, context-rich experiences. Through the model, students were not passive recipients of information; rather, they became active creators of knowledge by exploring, interpreting, and presenting culturally grounded content.

A particularly significant contribution of the model lies in its integration of local culture into the learning process. Embedding cultural elements familiar to students—such as local traditions, stories, and social practices—created a sense of relevance and personal connection to the learning tasks. This cultural alignment fostered stronger emotional engagement, as students felt that their identities and backgrounds were acknowledged and valued in the classroom.

As a result, participation levels increased, and students were more motivated to express their ideas orally. This outcome strongly supports the principles of culturally responsive pedagogy, which emphasize inclusivity, respect for diversity, and the use of learners' cultural knowledge as a foundation for academic success.

Moreover, the incorporation of digital tools significantly strengthened the interactive nature of the pedagogy. Technology facilitated collaboration by enabling students to work together across different stages of the project, from research to production and presentation.

It also supported multimodal communication, allowing learners to combine text, audio, visuals, and video in expressing their ideas, thereby enriching their communicative competence. Importantly, digital platforms provided authentic audiences beyond the classroom, giving students a real sense of purpose and encouraging them to produce higher-quality work. This integration of interaction, culture, and technology ultimately created a holistic learning environment that nurtured essential 21st-century skills, including communication, creativity, collaboration, and critical thinking.

Despite these positive outcomes, several challenges emerged during the implementation of the Interactive Project Based model. Some students demonstrated limited digital literacy, which affected their ability to fully engage with the technological aspects of the project. Additionally, the time required to complete comprehensive digital projects posed constraints, particularly within a fixed academic schedule.

These challenges highlight the importance of providing adequate scaffolding, such as technical guidance, structured timelines, and continuous teacher support. Addressing these issues is essential to ensure that all students can benefit equitably from the model and that its implementation can be sustained effectively in diverse educational contexts.

4. CONCLUSION

This study demonstrates that the Interactive Project Based model is an effective pedagogical approach within the framework of interactive pedagogy. It significantly improves students' speaking skills, engagement, and cultural awareness. The model offers a practical and scalable solution for educators seeking to integrate: Digital learning, Cultural relevance, Interactive Teaching Strategies. Future research is recommended to explore its application in different educational levels and subject areas, as well as its long-term impact on learner autonomy.

Interactive project‐based pedagogy bridges the gap between language acquisition and cultural inclusion. By embedding speaking opportunities within authentic, student‐driven projects, educators empower culturally diverse learners to express themselves confidently, think critically, and collaborate meaningfully. The evidence is clear: IPBP not only elevates oral proficiency but also nurtures a classroom ethos of respect and mutual curiosity.

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