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FROM MYSTERY TO MASTERY: PROJECT-BASED LANGUAGE LEARNING AND THE PEDAGOGICAL PREMISES OF EDUCATION 5.0 IN HIGHER EDUCATION

DO MISTÉRIO À MAESTRIA: APRENDIZAGEM DE LÍNGUAS BASEADA EM PROJETOS E OS FUNDAMENTOS PEDAGÓGICOS DA EDUCAÇÃO 5.0 NO ENSINO SUPERIOR

DEL MISTERIO A LA MAESTRÍA: APRENDIZAJE DE LENGUAS BASADO EN PROYECTOS Y LOS FUNDAMENTOS PEDAGÓGICOS DE LA EDUCACIÓN 5.0 EN LA EDUCACIÓN SUPERIOR

Sandra Luna[1] **[https://orcid.org/0000-0001-9185-0593]**

Albina Silva[2] **[https://orcid.org/0000-0003-0840-4395]**

[1]*ESE, Polytechnic of Porto, Portugal, slu@ese.ipp.pt*

[2]*ESE, Polytechnic of Porto, Portugal, albinasilva@ese.ipp.pt*

Resumo

Este artigo apresenta uma iniciativa pedagógica que integra a Aprendizagem de Línguas Baseada em Projetos com os princípios da Educação 5.0 em duas turmas C1.1 de Inglês como Língua Estrangeira no ensino superior. Os alunos desenvolveram, de forma colaborativa, diferentes personagens para um caso de investigação que resultou em pequenos vídeos apresentados numa galeria virtual de 360º. Com base em dados quantitativos e qualitativos, o estudo destaca os resultados obtidos na proficiência linguística, na literacia digital e nas competências transversais, como o trabalho em equipa e a resolução de problemas. O *feedback* dos pares e as observações dos professores indicaram elevados níveis de envolvimento, criatividade e colaboração narrativa. Embora as melhorias na fluência e nas competências digitais tenham sido evidentes, os ganhos em termos de rigor linguístico e utilização avançada da língua foram mais limitados. O artigo conclui com diretrizes práticas para os docentes que pretendem implementar tarefas PBLL inclusivas e melhoradas pela tecnologia, que promovam a agência do aluno e se alinhem com o espírito pedagógico da Educação 5.0.

Palavras-chave: Aprendizagem de Línguas Baseada em Projetos, Educação 5.0, Inglês como Língua Estrangeira, Pedagogia digital, Agência do aluno.

Abstract

This article presents a pedagogical initiative integrating Project-Based Language Learning (PBLL) with the principles of Education 5.0 in two C1.1 English as a Foreign Language (EFL) classes in higher education. Students collaboratively developed different characters for an investigative mystery culminating in short videos showcased in a 360º virtual gallery. Drawing on both quantitative and qualitative data, the study highlights perceived gains in language proficiency, digital literacy, and transversal competencies such as teamwork and problem-solving. Peer feedback and teacher observations indicated high levels of engagement, creativity, and narrative collaboration. While improvements in fluency and digital skills were evident, gains in accuracy and advanced language use were more limited. The article concludes with

practical guidelines for educators seeking to implement inclusive, technology-enhanced PBLL tasks that foster learner agency and align with the pedagogical ethos of Education 5.0.

Keywords: Project-Based Language Learning, Education 5.0, EFL, Digital Pedagogy, Student Agency.

Resumen

Este artículo presenta una iniciativa pedagógica que integra el Aprendizaje de Lenguas Basado en Proyectos (PBLL, por sus siglas en inglés) con los principios de la Educación 5.0 en dos grupos de nivel C1.1 de Inglés como Lengua Extranjera en la educación superior. Los estudiantes desarrollaron, de forma colaborativa, distintos personajes para un caso de investigación que culminó en pequeños vídeos presentados en una galería virtual de 360º. A partir de datos cuantitativos y cualitativos, el estudio destaca los resultados obtenidos en cuanto a la competencia lingüística, la alfabetización digital y las competencias transversales, como el trabajo en equipo y la resolución de problemas. La retroalimentación entre pares y las observaciones del profesorado indicaron altos niveles de implicación, creatividad y colaboración narrativa. Aunque se observaron mejoras claras en la fluidez y en las competencias digitales, los avances en términos de precisión lingüística y uso avanzado del idioma fueron más limitados. El artículo concluye con orientaciones prácticas para docentes que deseen implementar tareas PBLL inclusivas y potenciadas por la tecnología, que fomenten la agencia del alumnado y se alineen con el espíritu pedagógico de la Educación 5.0.

Palabras-clave: Aprendizaje de Lenguas Basado en Proyectos, Educación 5.0, Inglés como Lengua Extranjera, Pedagogía digital, Agencia del alumnado.

INTRODUCTION

Traditional models of language teaching have long been criticised for their reliance on decontextualised, form-focused instruction that prioritises grammatical accuracy over communicative competence (G. H. Beckett, 2025; Kuo et al., 2020). These approaches tend to isolate linguistic structures from authentic use, offering limited scope for interdisciplinary thinking or real-world problem-solving (G. H. Beckett et al., 2019; Hung et al., 2019). As a result, they often fall short in preparing students for the communicative and collaborative demands of contemporary academic, professional, and social contexts (G. H. Beckett, 2025).

In response, active learning methodologies have gained prominence for offering more interactive and student-centred approaches (Ertmer & Glazewski, 2015; Ertmer & Simons, 2006). Within this shift, Education 5.0 has emerged as a forward-looking framework that promotes digitally enriched, ethically grounded pedagogies centred on the learner. It emphasises not only knowledge acquisition, but also the development of critical thinking, autonomy, creativity, and soft skills – key competencies for meaningful participation in today's technology-mediated world (Judijanto et al., 2025; UNESCO, 2021).

This article presents findings from a pedagogical initiative implemented with two C1.1 English as a Foreign Language (EFL) classes in higher education during the first semester of the 2024/2025 academic year. Drawing on constructivist principles, a Project-Based Language Learning (PBLL) approach was adopted to promote learner agency, collaboration, and contextualised knowledge construction (Bell, 2010; Hung et al., 2019; Wang et al., 2024). The project simulated authentic communicative scenarios while fostering critical thinking, teamwork, and digital fluency.

Its impact was assessed through structured peer feedback on public presentations and a self-reflection questionnaire administered at the end of the semester. The analysis focused on perceived development in three interrelated domains: (i) language and communication skills – including fluency and accuracy; (ii) technical and ICT skills – particularly in research, media production, and digital collaboration; and (iii) soft skills – such as teamwork, problem-solving, time management, and adaptability.

By examining how this project supported linguistic and transversal competencies, the study aims to contribute to the growing body of research on active learning in language education and offers practical insights for educators aiming to align their practice with the principles of Education 5.0.

To guide the reader through our approach, the article is divided into four sections. Following this introduction, Section 1 outlines the theoretical and pedagogical underpinnings of Project-Based Learning (PBL) and PBLL and its intersection with Education 5.0. Section 2 presents the project's rationale, structure, and deliverables, including the development of a 360º virtual gallery using H5P on Moodle. Section 3 explores student feedback and reflections. Finally, the conclusion offers a synthesis of key insights along with practical guidelines for replication and adaptation.

1 THEORETICAL AND PEDAGOGICAL FOUNDATIONS

This section outlines key concepts that shaped our approach. It begins with criticisms of traditional EFL teaching and the shift towards active, student-centred methods, then examines how Education 5.0 frames this transition. Finally, it considers the core principles of PBL, highlighting its main affordances and limitations in language education.

1.1 Rethinking EFL Education: From Form-focus to Communicative Competence

Traditional educational models frequently emphasise memorisation for examination purposes, a practice that hinders the development of independent thinking (Belmekki, 2024; Ghosh, 2024). In EFL contexts, form-focused instruction can lead students to see language lessons as drills in vocabulary and grammar, rather than opportunities for research, collaboration, and applied communication (G. Beckett, 2024; G. H. Beckett & Slater, 2005; Liang et al., 2019; Slater, 2020).

In response to the limitations of conventional methods, many scholars argue for reorienting language education towards communicative competence, highlighting the need for approaches that better prepare learners for authentic language use (Oscarson, 2009; G. Beckett, 2024; Benson, 2011). One such approach is Project-Based Instruction (PBI), which was introduced in ESL education to foster student-centred learning and to bridge the gap between classroom tasks and real-world communication (Liang et al., 2019; Zhong, 2023). Grounded in collaboration and inquiry, PBI creates meaningful opportunities for learners to develop target language abilities through peer interaction. In this way, it supports a shift from passive knowledge absorption to active language use, where learning is driven not only by exposure to comprehensible input but also by negotiation of meaning, interactive exchange, and sustained output. These communicative demands encourage students to express opinions, exchange information, and participate in authentic dialogue – practices central to second language acquisition (Benson, 2011; Dooly & Masats, 2020; Dressler et al., 2020; Hmelo-Silver et al., 2019; Saricaoglu & Geluso, 2019).

A critical element of this pedagogical shift is what G. H. Beckett & Slater (2005) refer to as language socialisation – a guided process through which learners adopt a new understanding of language learning, integrating language development with content knowledge and higher-order skills such as critical thinking, research, and collaboration. Their study shows that making project goals and resources explicit helps mitigate this friction. One student described learning through presentations and interactions with librarians; another reflected on gains in data analysis, reporting, and academic vocabulary.

To support this process of language socialisation, Beckett and Slater's *Project Framework* (2005) offers a methodological tool that explicitly links language use, academic thinking, and content knowledge. According to the

authors, "*the Project Framework is a tool that addresses the simultaneous learning of language, content, and skills. It serves as a mediation tool* (Vygotsky, 1978)*, which provides a bridge to new ways for students to think about language learning, and the new learning activities being carried out in the new institutional context* (p.110). [...] *The Framework allows ESL students to see the value of project-based instruction by making explicit the various components* (p. 115) [...] *which work together to promote higher level academic literacy: language, thinking skills, and content knowledge*" (p. 108).

1.2 Active Learning and Education 5.0

The contemporary educational landscape, particularly in light of emerging frameworks such as Education 5.0, requires a fundamental shift towards active and experiential learning to meet the complex demands of the 21st century (G. H. Beckett & Slater, 2005; Judijanto et al., 2025). Building on the innovation-driven ethos of Education 4.0, Education 5.0 renews emphasis on human-centred learning by integrating technological fluency with values such as empathy, creativity, ethics, and collaboration (UNESCO, 2023). This holistic, socially responsive approach aligns closely with the communicative and intercultural aims of EFL instruction and with participatory pedagogies such as Project-Based and Problem-Based Learning.

Education 5.0 marks a clear pedagogical departure from traditional, teacher-centred instruction, replacing one-way transmission with experiential, student-driven learning (Beckett, 2005). This shift challenges over-reliance on rote memorisation and note reproduction, which can stifle critical thinking and learner autonomy (Beckett, 2005). Instead, it fosters the development of creativity, problem-solving, and critical thinking through collaborative tasks such as group projects and structured discussions (Rane et al., 2024). These environments enhance teamwork and communication - skills essential for addressing complex, real-world challenges (Rane et al., 2024; Wang et al., 2024).

Pedagogical encounters within this model are envisioned as collaborative, interdisciplinary, and problem-posing (UNESCO, 2021). They aim to foster curiosity and allow students to explore, create, and engage meaningfully with both the familiar and the unfamiliar. This vision supports broader educational goals that emphasise cooperation, solidarity, and the unlearning of bias, while embracing diversity and intercultural understanding (UNESCO, 2021).

Language education plays a key role in this transformation, as Education 5.0 underscores the need to equip learners with the linguistic and cultural competencies required in a globalised world (Judijanto et al., 2025). Framed not only as a cognitive process but also as a vehicle for intercultural awareness, critical engagement, and ethical participation, language learning becomes an integrative practice. This perspective dissolves the boundaries between content mastery and practical skill development, allowing each to reinforce the other rather than compete (Rane et al., 2024).

This integrated view of language learning finds practical expression in active learning strategies - such as project-based and inquiry-based instruction - which are positioned as participatory and collaborative alternatives to conventional lessons (G. Beckett, 2024). These approaches engage students in simultaneously acquiring, applying, and generating knowledge (Rane et al., 2024), thereby fostering deeper learning and transferable competence.

Rane et al. (2024) also argue that technology plays a vital role in Education 5.0 by enhancing individual learning productivity and access. For example, digital writing tools can scaffold language production by automating proofreading, translation, and feedback (UNESCO, 2023). Yet, scholars caution against over-reliance on such tools, reminding us that empathy, ethics, and co-construction remain "deeply human acts best facilitated by human beings, not technological short-cuts" (UNESCO, 2021, p.54).

1.3 PBL in EFL in Higher Education

Rooted in progressive education, PBL is a student-centred instructional approach that engages learners in designing, developing, and executing meaningful tasks. Inspired by Dewey's (1938) emphasis on experiential learning as central to democratic education, it invites students to acquire knowledge, apply concepts, and cultivate problem-solving skills in authentic contexts (Strobel & van Barneveld, 2009; Zhang & Ma, 2023). It also builds on cooperative and self-directed learning theories, which emphasise collaboration, autonomy, and active knowledge construction (Condliffe, 2017).

What sets PBL apart from more traditional approaches is its focus on real-world problems that require learners to take ownership of both process and outcome. By situating learning within practical and often interdisciplinary challenges, it fosters engagement, intrinsic motivation, and a deeper sense of responsibility (Blumenfeld et al., 1991). These affordances make it particularly well-suited to educational contexts aiming to promote not only language development but also transferable 21st-century competencies.

In EFL contexts, PBL is often referred to as Project-Based Language Learning (PBLL), where the approach is adapted to support both communicative competence and linguistic accuracy. Rather than acquiring language in isolation, learners apply it within purposeful interaction and sustained communicative tasks. PBLL requires students to express opinions, negotiate meaning, and collaborate with peers, creating conditions that are essential for second language acquisition (Rane et al., 2024), as the process of using the language to solve problems and create products results in more authentic and lasting learning.

Key benefits and characteristics of PBL/PBLL in higher education include:

(i) *Integrated Development of Language, Content, and Skills* – PBLL supports the simultaneous acquisition of linguistic competence, disciplinary knowledge, and academic skills (G. H. Beckett & Slater, 2005; Rane et al., 2024). Students expand their vocabulary while engaging in research, data analysis, and report writing. Tools such as *The Project Framework* can help visualise this integration, guiding learners and instructors in tracking progress across content, language, and skills (G. H. Beckett, 2025; Rane et al., 2024).

(ii) *Authentic Contexts and Tasks* – PBLL immerses students in meaningful, real-world scenarios that simulate communicative situations beyond the classroom. As Condliffe (2017) notes, it gives students a real reason for writing, a genuine audience. This authenticity enhances the practical relevance of classroom activities and increases motivation (Blumenfeld et al., 1991; Strobel & van Barneveld, 2009).

(iii) *Development of 21st-Century Skills* – Project-based approaches foster critical thinking, creativity, problem-solving, and digital literacy-core components of Education 5.0 (Rane et al., 2024; Zhang & Ma, 2023). Collaborative tasks demand effective communication and coordination, helping students articulate ideas, listen actively, and negotiate meaning (Wang et al., 2024).

(iv) *Learner Agency and Self-Direction* – PBLL promotes autonomy by positioning learners as active participants who explore, investigate, and propose solutions. Structured reflection tools – such as learning diaries, prompts, and self-assessment – reinforce metacognitive engagement and support the development of self-directed learning (Ertmer & Simons, 2006; Hmelo-Silver et al., 2019)

(v) *Collaborative Learning* – Collaboration is central to PBLL, enabling learners to co-construct knowledge, share expertise, and develop interpersonal skills (UNESCO, 2023; Wang et al., 2024). Research suggests that technology-enhanced collaboration fosters deeper engagement and leads to improved learning outcomes (Ertmer & Simons, 2006; UNESCO, 2023).

(vi) *The Teacher as Facilitator* – In PBLL environments, the teacher's role shifts from content deliverer to facilitator. Rather than directing instruction, teachers guide inquiry, provide scaffolding, and prompt reflective thinking (Ertmer & Glazewski, 2019; Strobel & van Barneveld, 2009). This shift supports learner autonomy and encourages ownership of learning.

(vii) *Flexible Frameworks for Support* – Although we did not apply *The Project Framework* (G. H. Beckett & Slater, 2005) in its original form, its core principles informed our approach. In particular, we drew on its emphasis on explicitly linking content, language, and skills to support learning trajectories. Visual planning tools, adapted from the literature, were used to help students structure their work and monitor progress (G. H. Beckett & Slater, 2005; Rane et al., 2024).

Despite its many strengths, implementing PBL in EFL higher education contexts presents challenges (Condliffe, 2017; Zhang & Ma, 2023). Students accustomed to teacher-led instruction may be sceptical of its value for language

learning, and educators must navigate group dynamics, facilitate inquiry, and assess non-traditional outcomes (Condliffe, 2017; Hmelo-Silver, 2004).

Scaffolding is key to addressing these issues-particularly in contexts with less autonomous learners or without dedicated facilitators (Hmelo-Silver, 2004). Support may be "hard" (designed into materials) or "soft" (provided in real time by teachers) (Ertmer & Glazewski, 2015, 2019). However, research shows that hard scaffolds are less effective when not embedded in classroom routines or complemented by teacher support. Students often disregard reflective prompts unless they are reinforced through modelling and follow-up (Ertmer & Glazewski, 2019). More evidence is also needed to determine how best to balance digital and human scaffolding to sustain inquiry and reflection (Ertmer & Glazewski, 2015).

Overall, the evidence suggests that PBL enhances student learning in areas such as critical thinking, academic achievement, and learner motivation (Condliffe, 2017; Strobel & van Barneveld, 2009; Zhang & Ma, 2023). While long-term retention tends to improve, some studies report slightly lower scores on short-term assessments (Strobel & van Barneveld, 2009). Ongoing research is needed to examine how PBL promotes knowledge-in-use and to explore its scalability across diverse contexts (Miller & Krajcik, 2019). More studies are required on its impact on university-level EFL students, as well as on how technology can support core literacies and transversal skills.

2 PROJECT DESIGN AND IMPLEMENTATION

This section contextualises the project developed in our C1.1 EFL classes, linking it to the principles outlined earlier. It describes the institutional and curricular context, learning objectives, and pedagogical rationale. We also outline the project's structure, tools, and deliverables, concluding with an overview of the 360º virtual gallery used to present student work.

2.1 Project Aims and Pedagogical Rationale

This project was carried out with two C1.1 English classes at the *Escola Superior de Educação* (ESE), Polytechnic Institute of Porto (P. Porto). Students enrolled in the Foreign Languages and Cultures undergraduate programme follow a progressive English curriculum – B2 in the first year, C1 in the second, and C2 in the third. Each level spans two semesters, and each semester includes a project that accounts for 20% of the final course grade.

C1.1 is taught in the first semester of the second year and comprises 60 hours of classroom instruction and 102 hours of autonomous study. Independent work is supported by online materials on Moodle, which serves as an extension of classroom-based learning.

The 2024/2025 edition of the C1.1 project was thematically aligned with topics within the syllabus, such as Going to Extremes, Fairness, and Travel and Adventure. This thematic framing provided fertile ground for integrating creative narrative work. Grounded in the principles of PBLL, our task was designed to promote linguistic development, digital fluency, and transversal skills through collaborative engagement in a fictional investigative scenario.

Students, working in teams, were tasked with creating and developing a character for a murder mystery set at the fictional *Cymru International Language Academy* in Wales. Each character functioned as a suspect in the shared storyline involving the murder of the town mayor. Teams were responsible for crafting backstories, motives, alibis, and relationships, progressively revealed through the project deliverables.

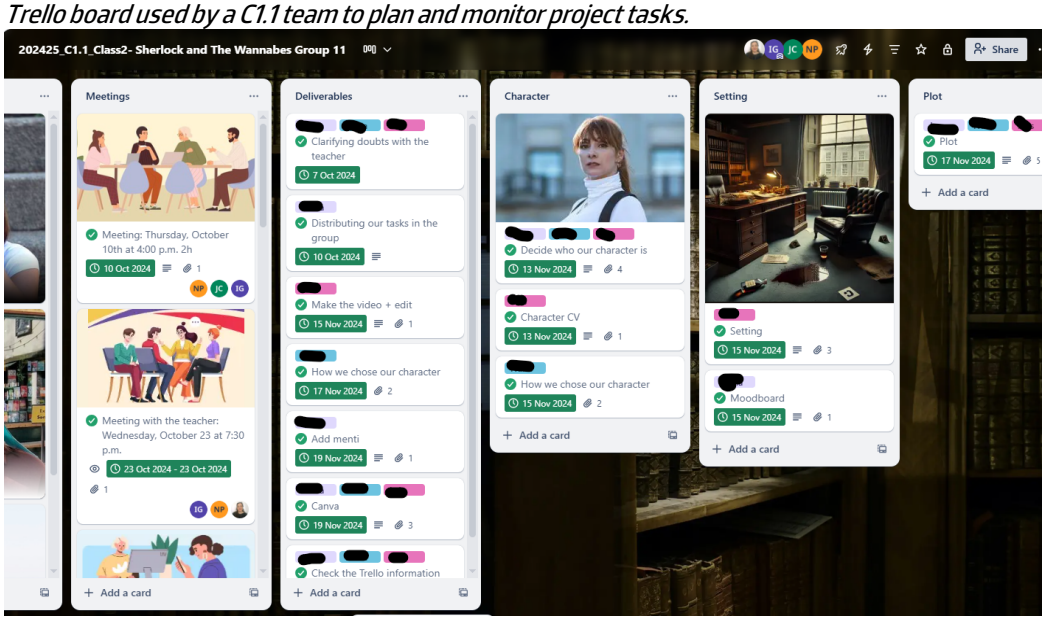
Introduced via an in-class presentation and a detailed Moodle brief, the nine-week project (23 September – 23 November 2024) was completed outside scheduled contact hours, relying on digital tools and autonomous group coordination.

2.2 Project Workflow and Deliverables

Students worked in self-selected teams of three, with groups of two or four permitted in exceptional cases. Each team registered their team's name, chosen character, and presentation date via a dedicated wiki on the course's Moodle page. To support project coordination, all groups were required to create a Trello board and share it with their teacher. These boards served both organisational and reflective purposes and typically included lists such as Group ID, Character, Plot, Setting, Deliverables, Meetings, References and Research, and Teacher Comments. Figures 1 and 2 present anonymised examples, illustrating the range of planning strategies students adopted.

Figure 1

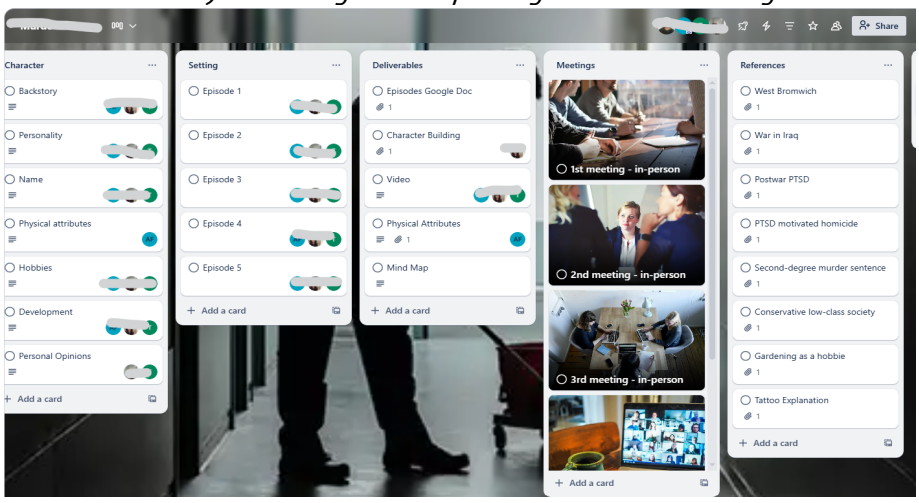
Trello board used by a C1.1 team to plan and monitor project tasks.



Note: Adapted from a student board. All identifying details have been anonymised.

Figure 2

Alternative Trello layout showing narrative planning and resource tracking.



Note: Adapted from a student board. Names and personal data have been removed.

The project involved four main deliverables:

- A 1/2-minute video episode (MP4 format) featuring the group's character. Students' spoken narration was mandatory, and videos could blend original footage with online content, provided all sources were credited. AI-generated voices were not permitted.
- A written script (Word format) including dialogue, scene descriptions, and citations of any external media used.
- A final presentation (PDF format), delivered publicly in class, in which each group explained their character's development and creative process, including language strategies and challenges encountered.
- A group report serving as a collaborative reflection. Students described individual contributions, group dynamics, key takeaways, and areas for improvement.

Each team was also required to attend at least two online supervisory meetings with the class teacher, scheduled through Moodle.

Throughout the process, students applied advanced language skills in genre-specific contexts, with emphasis on dialogue, sequencing, and narrative structure. Peer feedback played a key role in the final in-class presentations, with structured evaluation forms completed by classmates.

The final videos were subsequently compiled into an interactive 360º gallery using H5P on Moodle, discussed in Section 2.3.

2.3 Final Output: the 360º virtual Gallery

Following the final in-class presentations, all video episodes and accompanying metadata (e.g., team names, character summaries, and group identifiers) were collected. To showcase student work in an engaging and meaningful way, we employed H5P's 360º virtual tour feature, integrated into the course page on ESE's closed Moodle platform.

The gallery was designed to simulate the project's fictional setting – the Cymru International Language Academy – by constructing a virtual school using 360º panoramic images. Each room in this environment housed a selection of project videos, along with brief descriptions, student names, class, and team identifiers. Upon entering the virtual space, students were placed in an entrance hall and could freely navigate the rooms, choosing which videos to view.

This activity offered an exploratory, game-like experience that reflected the immersive, student-centred ethos of the project. While we are unable to publicly share the full gallery or video walkthrough due to permissions, selected screenshots of the interface are presented in Figures 3 and 4 to illustrate how student work was displayed within the space.

Figure 3

Entrance to the 360º Virtual Gallery
Student-facing interface of the H5P gallery, simulating the project's fictional setting.

Note: Adapted from licensed panoramic content (Behance); attribution included within the gallery.

Figure 4

Interactive Room View with Character Videos
Clickable hotspots allowed students to explore peer-created content and navigate freely between rooms.

Note: Content displayed within a closed institutional Moodle platform; no public access granted.

Student reactions to the virtual gallery, along with its pedagogical affordances and limitations, are further discussed in Section 3.

3. EVIDENCE FROM PRACTICE: REFLECTIONS AND FEEDBACK

3.1 Student Reflection Questionnaire

Of the 74 students enrolled in the C1.1 English course, 68 participated in the project, and 55 completed the end-of-semester reflection questionnaire. The aim was to gather student perceptions of their learning across three interrelated domains: language and communication, digital and technical competencies, and soft skills.

The questionnaire combined closed- and open-ended items. Students reflected on perceived improvements in reading, writing, speaking, and listening; their use of and confidence with digital tools; and the development of transversal skills such as teamwork, problem-solving, time management, adaptability, and communication. Where applicable, a five-point Likert scale (1 = very little; 5 = immensely) was used to rate perceived progress. The questionnaire was administered anonymously via Google Forms, in keeping with Education 5.0's emphasis on digital participation and accessible self-assessment.

3.1.1 Language Skill Development

Of the 55 students who completed the questionnaire, 44 responded to the section on language skill development, while 11 reported no perceived improvement in this area. Using a five-point Likert scale (1 very little; 5 immensely), respondents rated their progress in reading, writing, speaking, and listening as a result of participating in the project.

As shown in Table 1, the highest average ratings were observed for speaking (*mean* = 4.14) and writing (*mean* = 4.00), followed by listening (*mean* = 3.84) and reading (*mean* = 3.59). These results suggest that the project was particularly effective in promoting productive language use – especially oral and written expression – through its emphasis on voice recording, video scripting, and public presentation. Receptive skills were also positively rated, though to a slightly lesser extent, likely reflecting the project's focus on student production over comprehension-based tasks.

These findings support the value of PBLL in fostering communicative competence in multimodal, context-rich settings and align with targeted C1-level outcomes, particularly in speaking and writing.

Table 1

Self-Reported Improvement in Language Skills (*N* 44)

Skill	Number of Responses	Average Rating (1-5)
Reading	44	3.59
Writing	44	4.00
Speaking	44	4.14
Listening	44	3.84

Note. Self-reported ratings from 44 respondents using a 5-point Likert scale (1 = very little, 5= Immensely).

3.1.2 ICT Skill Development

Fifty students provided responses to the section of the questionnaire focused on digital and technical skills. These items aimed to gauge students' confidence in using various digital tools for research, collaboration, content creation, and presentation – four key competencies aligned with both C1-level language work and Education 5.0's emphasis on digital fluency.

As presented in Table 2, students reported the greatest perceived improvement in using tools for collaboration (*mean* = 3.78) and creating or editing digital content (*mean* = 3.64), followed by online research tools (*mean* = 3.62). The lowest rating was assigned to the use of presentation software (*mean* = 3.40), though this still suggests a positive development overall.

These findings reflect the design of the project itself, which placed a strong emphasis on team-based digital coordination (e.g. Trello boards), multimodal content production (e.g. videos and scripts), and asynchronous supervision. While students reported moderate confidence gains across all areas, the slightly lower average for presentation tools may suggest a need for more targeted scaffolding in future iterations, particularly as students were expected to present their work orally and visually to peers.

Table 2

Self-Reported Improvement in ICT Skills (*N* 50)

Digital Skill	Number of Responses	Average Rating (1-5)
Using online research tools	50	3.62
Collaborating through digital platforms	50	3.78
Creating or editing digital content	50	3.64
Using tools for presentations	50	3.40

Note. Self-reported confidence rating on a 5-point Likert scale (1= Very little, 5 = Immensely), covering key ICT skill areas.

3.1.3 Soft Skills Development

Fifty students responded to the section of the questionnaire concerning soft skills-competencies which are often emphasised in Project-Based Learning and Education 5.0 frameworks. Participants were asked to rate their perceived improvement in teamwork, communication, time management, adaptability, and problem-solving, using a five-point Likert scale (1 = very little; 5 = immensely).

As shown in Table 3, the highest average rating was given to adaptability (*mean* = 4.02), followed closely by problem-solving (*mean* = 3.94) and teamwork (*mean* = 3.76). These scores reflect the demands of a collaborative, creative task that required negotiation of roles, integration of diverse perspectives, and responsiveness to both team and task constraints. Communication (*mean* = 3.72) was also highly rated, likely reinforced by the public presentation format and use of peer feedback. By contrast, time management received the lowest rating (*mean* = 3.32), suggesting that some students may have struggled with balancing deadlines or coordinating efforts across the project's duration.

The results underscore the role of PBLL in promoting a broad set of transferable competencies, particularly when learners are given autonomy and responsibility over the management and execution of complex tasks. At the same time, they highlight the need to provide additional scaffolding in future editions of the project, especially in areas such as time planning and workload distribution.

Table 3

Self-Reported Improvement in Soft Skills (*N* 50)

Digital Skill	Number of Responses	Average Rating (1-5)
Teamwork	50	3.76
Problem-solving	50	3.94
Time management	50	3.32
Adaptability	50	4.02
Communication	50	3.72

Note. Scores reflect students' perceived improvement in each skill area on a 5-point Likert scale (1= Very little, 5 = Immensely).

3.1.4 Reflections on Areas for Growth

Although students generally reported perceived improvement across a range of competencies, their responses to the final open-ended item reveal a consistent desire to further develop certain soft skills. When asked which skills they would most like to improve, students most frequently mentioned time management, followed by communication, teamwork, and decision-making.

Time management emerged as the most recurrent theme, with several students noting challenges in prioritising tasks, meeting deadlines, and balancing group coordination with individual responsibilities. This aligns with the lower average rating for time management reported in the closed items (see Section 3.1.3), suggesting that while students were aware of its importance, they felt less successful in applying it effectively.

Some students also expressed a wish to become more confident and clear communicators, both within their teams and when presenting their work. Others highlighted the need to enhance their ability to work collaboratively, particularly in terms of managing differing perspectives and distributing responsibilities fairly.

These reflections underscore the value of including explicit scaffolding for soft skill development – such as guided planning tools, structured check-ins, and clearer group roles – in future editions of the project. They also reinforce the pedagogical premise of Education 5.0, which positions self-awareness, adaptability, and lifelong learning as essential components of the learning process.

3.2 Peer Feedback on Public Presentations

As part of the final stage of the project, each team presented their video and character to the rest of the class. To foster a culture of constructive critique and collaborative learning, students were asked to provide structured feedback on the presentations via digital forms hosted on Moodle. A separate form was created for each team, and attending students were expected to submit feedback for all groups presenting that day.

Prior to presentations, students had a dedicated class session on *Language for Feedback*, introducing principles of effective and respectful peer assessment. This session emphasised constructive, specific, and task-focused

comments. Personal remarks – such as those related to delivery nerves – were discouraged in favour of feedback on clarity, creativity, technical execution, and narrative consistency.

Each feedback form included 11 Likert-scale items (rated from 1 to 4, where 4 = Strongly Agree) and 2 short-answer questions. The closed-ended items were aligned with 10 assessment categories: *(i) Clarity and Coherence, (ii) Character Depth, (iii) Group Engagement, (iv) Originality, (v) Use of Language, (vi) Narrative Flow, (vii) Supporting Evidence, (viii) Visual and Technical Elements, (ix) Body Language and Voice, and (x) Overall Impression.* Students completed the forms in real time via Moodle on laptops or mobile devices; in cases of technical difficulty, handwritten notes were later transcribed.

A total of 1,595 anonymised responses were collected across 23 teams. For the purposes of this section, we focus on six of these categories: *(i) Visual and Technical Elements, (ii) Character Depth, (iii) Clarity and Coherence, (iv) Use of Language, (v) Originality, and (vi) Overall Impression*. These dimensions were selected because they align most closely with the course's emphasis on narrative construction and language-in-use, as well as with core principles of Education 5.0 and PBLL, including creativity, communication, and learner agency.

The data were extracted, cleaned, and aggregated by group and question, allowing us to calculate mean scores per evaluative criterion. As shown in Table 4, the highest-rated aspects were *Visual and Technical Elements* (*M* = 3.38), *Character Depth* (3.36), and *Clarity and Coherence* (3.35), closely followed by *Originality* (3.34), *Overall Impression* (3.34), and *Use of Language* (3.33). These results suggest that students valued strong narrative development, audiovisual execution, and compelling character design—all elements that had been explicitly modelled and supported throughout the project.

Table 4

Overall Average Peer Feedback Scores by Criterion (*N* 1,595)

Criterion	Average Score (1-4)
Character Depth	3.36
Clarity and Coherence	3.35
Originality	3.34
Overall impression	3.34
Use of Language	3.33
Visual and Technical Elements	3.38

Note. Ratings are based on a 4-point Likert scale (1= Strongly Disagree, 4= Strongly Agree).

While all ten criteria received generally positive evaluations, the strength and balance of these particular areas seem to suggest that the project succeeded in fostering critical engagement, storytelling competence, and peer-supported reflection—central goals in PBLL and Education 5.0 frameworks.

3.2.1 Nature and Quality of Peer Comments

In addition to the quantitative ratings provided on the Moodle feedback forms, students were also required to submit brief written comments identifying each team's main strengths and areas for improvement. A total of 486 strength-

based comments and 484 improvement-focused comments were collected. These were analysed thematically using frequency analysis of keywords and short phrases (*n-grams*), with attention to both content and tone.

The analysis revealed that praise most frequently focused on aspects such as character development, creativity, and the overall quality of the presentations. Comments like *well-developed character*, *engaging plot*, and *very creative video* appeared frequently across groups, suggesting that students were attentive to both content and delivery. Many students also used positively charged language such as *interesting*, *great*, or *very well done*, indicating strong peer recognition and appreciation of their classmates' efforts.

In comments identifying areas for improvement, the most common suggestions related to presentation clarity, time management, and language use. Notably, students tended to frame criticism constructively, often softening their feedback with phrases such as *I think*, *maybe consider*, or *a bit more*. This tone suggests that the preparatory session on Language for Feedback could have been effective in shaping peer interactions that were tactful, respectful, and grounded in pedagogical purpose. Importantly, there was no evidence of personal or non-constructive remarks, a finding which underscores the potential of structured peer review to cultivate ethical, collaborative communication practices in line with the values of Education 5.0.

Overall, peer comment data demonstrate that students were able to engage thoughtfully and constructively with each other's work, reinforcing the project's dual emphasis on communicative competence and critical reflection.

3.3 Key Insights and Observed Impact

Beyond the formal data collected through questionnaires and peer feedback, several noteworthy observations emerged during the project's implementation. As instructors, we noted higher levels of student engagement, motivation, and creative investment compared to previous project cycles. Collaboration extended beyond team boundaries, with many students coordinating shared plotlines and character arcs across groups, enriching the overall narrative and fostering a sense of community storytelling.

One class, in particular, expressed a clear preference for this project over earlier iterations. While the exact reasons remain speculative, this enthusiasm may be attributed to the creative freedom afforded by the task design and the diversity of the character pool. Special care was taken to ensure inclusive representation in terms of gender, sexual orientation, race, religion, and age, allowing students to select characters they found relatable. Because each character could only be chosen once per class, teams were encouraged to negotiate choices collaboratively, promoting early peer interaction and planning.

In-class presentations revealed a high level of audience engagement. In several cases, students brought their characters to life, extending the fictional narrative through live performance. Although no systematic observational data were gathered, reactions to the final 360º virtual gallery further confirmed the project's impact: students responded enthusiastically to the immersive format and expressed pride in seeing their work displayed in an interactive digital environment.

Informal feedback from groups also highlighted perceived gains in digital and communicative competencies. Students experimented with a range of tools-including AI-based platforms for editing and design, and showed noticeable improvement in research, referencing, and media production. While fluency visibly improved, gains in grammatical accuracy and spontaneous advanced vocabulary use were less marked, suggesting areas for further scaffolding in future iterations.

Overall, these observations underscore the potential of well-structured, inclusive PBLL projects to foster linguistic development, digital fluency, and creative ownership – core aims of Education 5.0.

CONCLUSION AND FUTURE DIRECTIONS

This article has examined the design, implementation, and outcomes of a project-based initiative with two C1.1 English classes in higher education. Combining elements of PBLL with a narrative-driven mystery format, the project

engaged students in using language, digital tools, and soft skills in integrated and creative ways. Drawing on the principles of Education 5.0, it aimed to foster autonomy, collaboration, critical thinking, and ethical communication, while promoting real-world language use and digital fluency.

Findings from both quantitative and qualitative data suggest that the project achieved many of its aims. Students reported improvement in productive language skills – particularly speaking and writing – as well as in ICT and soft skills such as collaboration, problem-solving, and adaptability. Peer feedback was taken seriously and conducted respectfully, indicating that the preparatory session on feedback literacy had a positive impact. Informal teacher observations pointed to high levels of engagement, inter-group collaboration, and creative ownership. Many students exceeded task requirements, developing narrative subplots and experimenting with digital tools, including AI-assisted design and editing. Such behaviours exemplify the learner agency and multimodal competence promoted by Education 5.0.

Nonetheless, some limitations emerged. While students gained fluency and confidence, progress in grammatical accuracy and advanced vocabulary was more modest. Challenges with time management and team coordination also surfaced. These findings suggest the value of targeted scaffolds–linguistic, organisational, or technological–in future project iterations.

Based on this experience, we propose the following guidelines for educators interested in designing similar projects:

- It is helpful to prepare a diverse cast of fictional characters in advance, taking care to represent a range of genders, ethnicities, backgrounds, and life experiences. However, the design should also allow students to adapt or co-develop these characters. This balance between structure and flexibility can enhance both engagement and inclusiveness.
- Collaborative digital platforms such as Trello and Moodle can play a central role in supporting workflow and communication throughout the project. These tools should be used not only for submitting deliverables, but also as active planning spaces where students monitor deadlines, document tasks, and share resources. This ongoing interaction fosters accountability and scaffolds autonomous group work.
- Students should receive explicit training in peer feedback techniques prior to assessing their classmate's work. In our case, a session on Language for Feedback was instrumental in helping students move beyond vague praise or personal remarks. Guidance on tone, phrasing, and feedback focus contributed to the quality and usefulness of responses.
- Scheduling at least two supervision meetings during the project timeline proved essential. These check-ins provided opportunities to clarify expectations, troubleshoot difficulties, and guide students in developing both content and language. They were particularly useful in preventing misunderstandings and ensuring that groups remained aligned with project goals.
- While the project supported the development of fluency and digital literacy, progression in grammatical accuracy and advanced language use was more limited. To address this, we recommend integrating optional language support materials – such as short video tutorials or focused workshops – especially targeting genre-specific language features.
- Finally, the way in which student work is presented can have a strong motivational impact. The 360º virtual gallery offered an immersive and aesthetically engaging format that enhanced student pride and ownership. Even within closed institutional platforms, public-facing dissemination can significantly raise the perceived value of students' efforts.

Ultimately, this project illustrates how PBLL, when thoughtfully designed and ethically implemented, can bring language learning into alignment with the values, and aims of Education 5.0, supporting not only communicative proficiency, but also digital fluency, creative agency, and the development of transferable, future-ready skills.

REFERENCES

Beckett, G. (2024). *Project-based language learning for young adults*. Routledge.

Beckett, G. H. (2025). *A paradigm shift for language education: Project-based learning and teaching*. Routledge. https://doi.org/10.4324/9781032700205

Beckett, G. H., & Slater, T. (2005). The Project Framework: a tool for language, content, and skills integration. *ELT Journal*, *59*(2), 108–116. https://doi.org/10.1093/eltj/cci024

Beckett, G. H., Slater, T., & Mohan, B. A. (2019). Philosophical foundation, theoretical approaches, and gaps in the literature. In G. H. Beckett & S. Slater (Eds.), *Project-based language learning with young adults: From theory to practice* (pp. 3–22). Routledge.

Bell, S. (2010). Project-Based Learning for the 21st century: Skills for the future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *83*(2), 39–43. https://doi.org/10.1080/00098650903505415

Belmekki, M. (2024). Project-based learning implementation in higher education: Theoretical and practical issues. *The Journal of Quality in Education (JoQiE)*, *14*(24), 94–104. https://doi.org/10.37870/joqie.v14i24.383

Benson, P. (2011). *Teaching and researching autonomy* (2nd ed.). Routledge.

Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist*, *26*(3–4), 369–398. https://doi.org/10.1080/00461520.1991.9653139

Condliffe, B. (2017). *Project-based learning: A literature review*. https://www.mdrc.org/publication/project-based-learning

Dewey, J. (1938). *Experience and education*. Macmillan.

Dooly, M., & Masats, D. (2020). 'What do you zinc about the project?': Examples of technology-enhanced project-based language learning. In G. H. Beckett & T. Slater (Eds.), *Global perspectives on project-based language learning, teaching, and assessment: Key approaches, technology tools, and frameworks* (pp. 126–144). Routledge.

Dressler, R., Raedler, B., Dimitrov, K., Dressler, A., & Krause, G. (2020). Project-based learning in the advanced German class: Integrated content and language learning. In G. H. Beckett & T. Slater (Eds.), *Global perspectives on project-based language learning, teaching, and assessment: Key approaches, technology tools, and frameworks* (pp. 69–84). Routledge.

Ertmer, P. A., & Glazewski, K. D. (2015). Instructional design for problem-based learning. In R. A. Reiser & J. V Dempsey (Eds.), *Foundations of learning and instructional design technology: The past, present, and future of learning and instructional design technology* (pp. 188–203). Pearson Education. https://doi.org/10.2307/j.ctt6wq6fh.12

Ertmer, P. A., & Glazewski, K. D. (2019). Scaffolding in PBL environments: Structuring and problematizing relevant task features. In M. Moallem, W. Hung, & N. Dabbagh (Eds.), *The Wiley handbook of problem-based learning* (pp. 321–342). John Wiley & Sons.

Ertmer, P. A., & Simons, K. D. (2006). Jumping the PBL implementation hurdle: Supporting the efforts of K–12 teachers. *Interdisciplinary Journal of Problem-Based Learning*, *1*(1), 40–54. https://doi.org/10.7771/1541-5015.1005

Ghosh, S. (2024). Rehumanizing education in the age of technology. In K. K. Garg, B. S. Babu, & V. E. Balas (Eds.), *Artificial intelligence in education: Impact on teaching, learning, and research* (pp. 1–15). CRC Press.

Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review*, *16*, 235–266. https://doi.org/10.1023/B:EDPR.0000034022.16470.f3

Hmelo-Silver, C. E., Bridges, S. M., & McKeown, J. M. (2019). Facilitating problem-based learning. In M. Moallem, W. Hung, & N. Dabbagh (Eds.), *The Wiley handbook of problem-based learning* (pp. 297–320). John Wiley & Sons.

Hung, W., Moallem, M., & Dabbagh, N. (2019). Social foundations of problem-based learning. In M. Moallem, W. Hung, & N. Dabbagh (Eds.), *The Wiley handbook of problem-based learning* (pp. 51–80). John Wiley & Sons.

Judijanto, L., Ili, L., & Wardhana, M. G. (2025). Education 5.0: Collaboration and creativity in improving students' digital intelligence. *International Journal of Teaching and Learning (INJOTEL)*, *3*(4), 369–382.

Kuo, A. C., Sutton, P. S., Wright, E., & Miller, B. K. (2020). Altering the view of language instruction in project-based learning: Examining bilingual teachers' unit design experiences. In G. H. Beckett & T. Slater (Eds.), *Global perspectives on project-based language learning, teaching, and assessment: Key approaches, technology tools, and frameworks* (pp. 244–262). Routledge.

Liang, J., Xie, F., & Gao, M. (2019). Beyond exams: Research-based dynamic, technology-mediated, project-based framework for meaningful language learning in a secondary EFL setting in China. In G. H. Beckett & S. Slater (Eds.), *Project-based language learning with young adults: From theory to practice* (pp. 263–282). Routledge.

Miller, E. C., & Krajcik, J. S. (2019). Promoting deep learning through project-based learning: a design problem. *Disciplinary and Interdisciplinary Science Education Research*, *1*, 7. https://doi.org/10.1186/s43031-019-0009-6

Oscarson, A. D. (2009). *Self-Assessment of Writing in Learning English as a Foreign Language: A Study at the Upper Secondary School Level* [Göteborg Studies in Educational Sciences 277]. Acta Universitatis Gothoburgensis.

Rane, N. L., Choudhary, S. P., & Rane, J. (2024). Education 4.0 and 5.0: Integrating Artificial Intelligence (AI) for personalized and adaptive learning. *Journal of Artificial Intelligence and Robotics*, *1*(1), 29–43. https://doi.org/10.61577/jaiar.2024.100006

Saricaoglu, A., & Geluso, J. (2019). Students co-learning linguistics through PBL: A cross-cultural telecollaborative implementation. In G. H. Beckett & S. Slater (Eds.), *Project-based language learning with young adults: From theory to practice* (pp. 104–125). Routledge.

Slater, T. (2020). The knowledge framework: An organizational tool for highlighting the "LL" in technology-integrated PBLL. In G. H. Beckett & T. Slater (Eds.), *Global perspectives on project-based language learning, teaching, and assessment: Key approaches, technology tools, and frameworks* (pp. 185–203). Routledge.

Strobel, J., & van Barneveld, A. (2009). When is PBL more effective? A meta-synthesis of meta-analyses comparing PBL to conventional classrooms. *Interdisciplinary Journal of Problem-Based Learning*, *3*(1), 44–58. https://doi.org/10.7771/1541-5015.1046

UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing. https://doi.org/10.54675/ASRB4722

UNESCO. (2023). *Global education monitor 2023: Technology in education: A tool on whose terms?* UNESCO Publishing. https://doi.org/10.54676/JKLA7966

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Harvard University Press.

Wang, Z., Han, C., & Zhao, L. (2024). The impact of project-based learning in higher education on cultivating innovative talent. *International Journal of New Developments in Education*, *6*(8), 148–153. https://doi.org/10.25236/IJNDE.2024.060823

Zhang, L., & Ma, Y. (2023). A study of the impact of project-based learning on student learning effects: A meta-analysis study. *Frontiers in Psychology*, *14*, 1202728. https://doi.org/10.3389/fpsyg.2023.1202728

Zhong, Y. (2023). Project-based language learning and its implications for English teaching in Chinese universities. *Proceedings of the 2nd International Conference on Interdisciplinary Humanities and Communication Studies*, 102–109. https://doi.org/10.54254/2753-7048/31/20231856