International Journal of Positivity & Well-Being

Volume 3, Issue 1, 2025, 76-91

ISSN: 2980-3497 www.intwellbeing.com

DOI: 10.61518/ijpw-87 Research Article

Received: 02/11/2024 Accepted: 27/01/2025 Published: 15/03/2025

Fostering Human Wellbeing Through Project-Based Learning in Higher Education

Yükseköğretimde Proje Tabanlı Öğrenme Yoluyla Bireysel İyi Oluşun Desteklenmesi

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Abstract

This paper aims to explore how Project Based Learning (PBL) techno-pedagogy blended learning integration in higher education institutions (HEIs) allows for fostering learners' well-being and solving local communities' problems with new transferable skills supported by digital tools. A multisite ethnography mixed research design in three higher education institutions allowed to describe students' wellbeing through Project Based Learning Pedagogical approach according to the PERMA Model: Positive Emotions, Engagement, Relationships, Meaning, and Achievement. This research was conducted with a sample of 435 students and 8 teachers / educators in Cote d'Ivoire, a West Africa Francophone country. Data collection used classroom observation and semi-structured interviews to describe participants' experience with PBL through content and conversation analysis methods. Findings showed that PBL integration in local pedagogy in HEIs results from a 21st century pedagogical transformation based on real problem solving to support learners' skills and communities. Yet, many contextual challenges like facility and resource constraints, structural constraints, large class sizes, information overload (ICT gap), time constraints, human capital constraints, lack of technology, and limited learning disturb teaching and learning outcomes of PBL on learners. However, the shift to PBL in the educative system contributes to 21st century skills enhancement and users' well-being. As such, a recommendation for the digital era is for educational institutions to promote project-based learning in pedagogy to support lifelong learning and human well-being, to foster current and next generations skills, including but not limited to flexibility, resilience, and problem-solving.

Keywords: Human Wellbeing, Project-Based Learning, 21st Century Skills, Sustainability, Lifelong Learning

Öz

Bu makale, yükseköğretim kurumlarında proje tabanlı öğrenme (PBL) ve teknoloji-pedagojisiyle harmanlanmış öğrenme entegrasyonunun, öğrencilerin iyi oluşlarını destekleme ve dijital araçlarla desteklenen yeni aktarılabilir beceriler aracılığıyla yerel toplulukların sorunlarını çözme olanaklarını nasıl sağladığını incelemeyi amaçlamaktadır. Üç farklı yükseköğretim kurumunda gerçekleştirilen, çoklu alan etnografisiyle harmanlanmış bir araştırma tasarımı, Proje Tabanlı Öğrenme pedagojik yaklaşımı çerçevesinde öğrencilerin iyi oluşlarını PERMA Modeli (Pozitif Duygular, Katılım, İlişkiler, Anlam ve Başarı) temelinde değerlendirmeye olanak tanımıştır. Bu karma araştırma, Batı Afrika'nın Fransızca konuşulan ülkelerinden biri olan Fildişi Sahili'nde 435 öğrenci ve 8 öğretmen/ eğitimciyle gerçekleştirilmiştir. Bu karma araştırma, Batı Afrika'nın Fransızca konuşulan ülkelerinden biri olan Fildişi Sahili'nde, toplamda 435 öğrenci ve 8 öğretmen/eğitimci ile ile yürütülmüştür. Veriler, katılımcıların PBL deneyimlerini içerik ve söylem analizi yöntemiyle değerlendirmek amacıyla sınıf gözlemleri ve yarı yapılandırılmış mülakatlar yoluyla toplanmıştır. Bulgular, yüksek öğrenim kurumlarında PBL entegrasyonunun, öğrenenlerin becerilerini ve toplulukları desteklemek amacıyla gerçek problem çözmeye dayalı 21. yüzyıl pedagojik dönüşümünün bir sonucu olduğunu ortaya koymuştur. Bununla birlikte, tesis ve kaynak yetersizliği, yapısal sınırlamalar, kalabalık sınıflar, bilgi yüklemesi (aşırı bilgi içeriği yoğunluğu), zaman kısıtlamaları, insan sermayesi eksikliği, teknoloji eksikliği ve sınırlı öğrenme olanakları gibi bağlamsal zorluklar, PBL'nin öğretim ve öğrenim üzerindeki sonuçlarını olumsuz yönde etkileyebilmektedir. Buna karşın, eğitim sisteminde PBL'ye geçişin, 21. yüzyıl becerilerinin gelişimini desteklediği ve öğrencilerin iyi oluşuna katkı sağladığı görülmektedir. Bu bağlamda, dijital çağda eğitim kurumlarının, yaşam boyu öğrenimi ve bireylerin iyi oluşunu desteklemek, aynı zamanda esneklik, dayanıklılık ve problem çözme becerilerini geliştirmek amacıyla pedagojide Proje Tabanlı Öğrenmeyi teşvik etmeleri önerilmektedir.

Anahtar Kelimeler: Bireysel İyi Oluş, Proje Tabanlı Öğrenme, 21. Yüzyıl Becerileri, Sürdürülebilirlik, Yaşam Boyu Öğrenme

Introduction

Education plays a crucial role in ensuring future generations are able and well-equipped to face the challenges of the 21st century for sustaining all aspects of well-being for humankind (Esteban-Guitart, 2023; Leite, 2022). In this context, shifting in the education system, digitalization is a process that was accelerated these recent years due to the globalization and disruptions from the COVID 19 outbreak. Therefore, in today's world, the digitalization and internationalization of trends necessitate a shift in teaching models from traditional to innovative approaches in order to provide learners with effective skill acquisition and Sustainable Development Goals (SDGs) awareness (Leite, 2022; Zunaidah, 2024). Indeed, the digital revolution offered many opportunities for skills growth according to the fund of knowledge perspective during the various interactions offline and online to support digital users' well-being in whole fields (Esteban-Guitart, 2023). However, in Global South countries, with many digital challenges existing, the integration of techno-pedagogy Blended Learning like Project-Based Based Learning (PBL) calls for the use of digital tools in local educational institutions. So, digital tools serve to empower citizens, increase their communication skills to explore, learn, rethink, and disseminate innovative ideas for human well-being through 21st-century skills acquisition by applying schools' knowledge to solve real societal problems (Adeoye et al., 2024; Gougou, 2024). This also concerns human positive psychology and well-being in all fields and particularly in education.

In fact, the significance of research on human Wellbeing in the Educative system is a very important topic in academia and the educative system through various studies led in different contexts in developed and Global South countries (Chankseliani et al., 2021; Kovich et al., 2023; Yu, 2024). Pedagogical transformation in the digital era also requires particular attention related to human well-being (Lütge, 2023). This includes the adoption of Project-Based Learning (PBL) to foster learning effectiveness. Similarly, for Liu et al. (2020), PBL is an inquiry-based learning method that embodies learning by doing. This reality impacts the whole educational system, from traditional case studies to real projects, allowing learners to use local and online resources to solve community problems in a 21st-century pedagogy approach. The result is a curriculum transformation with Project Based Learning integration in teaching from primary schools ~~as~~ to Higher Education Institutions (HEIs) and professional fields. Therefore, from Kindergarten to HEIs and postgraduate programs, the various teaching environments and practices may help to modify human development positively (Žerovnik & Šerbec, 2021). The well-being question appears as a fundamental topic knowing that the educational system must prepare the next generation of citizens and provide a sustainable environment to support communities' sustainability through 21st-century skills adoption (Giesenbauer & Müller-Christ, 2020; Paschal & Gougou, 2022).

In the Global South, as in Western countries, many factors affect youth employment opportunities specifically in intercultural contexts (Álvarez, 2021; Gougou, 2024). In educational institutions, these factors concern the teaching approaches, class size, Information and Communication Technologies (ICT) shift, multilingualism, and teaching resources availability. Yet, people desire optimal well-being, but barriers and lack of societal support prevent many individuals from realizing a satisfying, meaningful life even in schools (Kovich et al., 2023). These challenges often increase stress, distress, and many mental health disorders in educational institutions. The key to the success of the educational shift from "teaching to learning" requires an educational transformation supported by PBL to support human well-being.

In this context, shifting to the usage of PBL in 21st-century skills acquisition is an approach to doing so to apply schools' knowledge for solving real societal problems that influence stakeholders' well-being as citizens and change makers. It is an important way for global citizenship education and inclusion in times of unprecedented change and uncertainty. Therefore, for sustainable development and economic prosperity, the African continent needs an innovative and self-imposed workforce supported by HEIs (Giesenbauer & Müller-Christ, 2020). Yet, while PBL has been used in higher education within the

Global North for a while, the practice has not yet taken root in Africa (Getuno et al., 2022). So, this paper aims to explore how project-based learning integration in higher education institutions allows the fostering of learners' well-being and solves local communities' problems with new transferable skills supported by digital tools in Africa.

Problem statement

In the world, the question of youth empowerment by doing more than theorizing in school requires a transformation of the whole teaching approach. Indeed, in the face of unprecedented changes in society due to intercultural context, it is important to develop an inclusive learning environment to reduce the feeling of discrimination and increase the academic skills application to solve society's problems. Unfortunately, the traditional teaching approach is more teacher centered and did not allow learners to practice, even in HEIs. This lack of practice skills in HEIs results in a lack of jobs, frustrations, and burning out because of a lack of ideas to manage many real social challenges through problem-solving and critical thinking. So, there is a real need for learners to get practical skills to deploy academia in knowledge and technology transfer for supporting society's sustainability. Therefore, all educational systems and institutions of the world are frequently influenced by various transformations in society, like digital disruptions, crises, and intercultural exchanges impacting individuals, people, and human daily practices. In the educational system, these contextual issues affect educative stakeholders (teachers, admin, learners, and parents) well-being due to the constraints: structural constraints, large class sizes, information overload (ICT gap), time constraints, human capital constraints, lack of technology, and limited learning.

Simultaneously, the promotion of the 21st century to nurture transformative pedagogy skills calls to foster soft skills (communication and collaboration, creativity, critical thinking and problem solving, digital mastery, student leadership, citizenship) to foster human well-being and Sustainable Development Goals (SDGs). In this perspective, this transformation aims for creativity and involving young leaders in day-to-day societal challenges management by empowering current and next generations of citizens for their well-being and the community's social growth. To reach this goal, in the Global South and Western countries, this fact increases the adoption of mechanisms to share practical skills in critical thinking and problem solving through project-based learning. The scope of this approach is to transfer knowledge from academia to society in order to create new artifacts able to sustain human well-being growth according to SGDs. This is a common concern in both developed and developing countries too. Therefore, Higher Education Institutions (HEIs), one base of intelligent growth and youth empowerment, play a crucial role by fostering the acquisition of new skills in favor of the community and individual accomplishment from problem-solving according to the fund of knowledge perspective of sharing by empowerment. Yet, many contextual challenges remain obstacles, including but not limited to pedagogical mastery, teaching environments, and learners' motivation of students' well-being in the local HEIs as in the world.

Particularly in the Global South context, like Africa, this transformation of pedagogical approaches in HEIs is an innovation regarding the high rate of unemployment and failures after academic graduation. If there is not the possibility for cross-teaching and practice through Project-Based Learnings in education, the system could be imbalanced due to low educational outcomes that could result in additional crises among young people and negatively affect human well-being for the whole of society. So, this current study in Cote d'Ivoire, a West Africa francophone country, underlines how PBL integration in HEIs fosters human well-being and more societal sustainability by providing students appropriate skills for their psychological, social, and emotional wellness. In a changing context, it is very crucial to question how the usage of PBL in educative pedagogy influences human well-being and societal sustainability, knowing that youth creativity remains the fuel of development and innovation to build start-ups and

new tools. Specifically, this study questions the outcomes of PBL in HEIs in Africa as a provider of new practical sustainable skills. It contributes to supporting students' accomplishments and next decision-makers skills to change positively in the whole of society.

This fact justifies the need to question the problem of PBL integration in HEIs knowing that many contextual challenges prevent the application of this pedagogical tool perfectly for students' positive outcomes and human well-being in a blended learning pedagogy.

Theoretical Framework

Thinking on well-being includes the adoption of a theoretical framework based on the positive psychology field in order to support our research with well-being theories and models for validation. Specifically, in positive psychology paradigms, the PERMA model developed by Seligman (2018) promotes well-being through five key elements: *Positive Emotions, Engagement, Relationships, Meaning,* and *Achievement*. Moreover, according to Kovich et al. (2023), these key elements refer to the following ideas: 1) *Positive Emotion* includes subjective reports of happiness, hope, joy, and satisfaction; 2) *Engagement* refers to focus, interest, or absorption in an activity; 3) *Relationships* include closeness and connection with family, friends, or colleagues. These relationships are important throughout a person's lifespan and contribute to well-being in many ways; 4) *Meaning* is belief or membership in something larger than oneself and may be derived from religion, spirituality, or advocacy; 5) *Accomplishment*, refers to pursuing throughout life for the sake of "winning". Accomplishment often requires perseverance and resilience and may include academics, athletics, or career achievements. According to Goh et al. (2022), each element in the PERMA Model is a variable of human well-being, particularly in a research context of educational institutions to foster effectiveness through active 21st-century pedagogical approaches.

Similarly, Project-Based Learning (PBL) refers to an inquiry-based instructional method that engages learners in knowledge construction by having them accomplish meaningful projects and develop real-world products (Giesenbauer & Müller-Christ, 2020; Guo et al., 2020; Gougou et al., 2023). The different steps of classroom management in a PBL approach are the driving question, focus on learning goals, participation in educational activities, collaboration among students, usage of scaffolding technologies, and creation of tangible artifacts that influence their well-being and accomplishment. Thus, PBL is a transformative educational approach that impacts the stakeholder's well-being through the school environment, ~~to~~ communities and country policy by providing a sustainable educational background able to foster learners' wellness.

In brief, human well-being through PBL in the educational system is a very important topic, especially in the Global South countries like Cote d'Ivoire according to previous theories mentioned above. So, in our paper, the PERMA Model is used as a theoretical lens to frame this investigation and reach excellent quality in the educational system. In fact, the combination of PERMA elements promotes flourishing, which is the optimal functioning of individuals, groups, communities, nations, and society at large and specifically in the educational system context (Goh et al., 2022; Kovich et al., 2022; Leontopoulou, 2020; Seligman 2018). That is to say, the positive psychology PERMA model allowed researchers to analyze the educative and psychological dynamic question related to fostering Human Wellbeing Through Project Based Learning in Higher Education in this study. The particularity of this study takes into consideration High Educational Institutions involved in French and bilingualism teaching context. This scientific process calls to establish a strong research method related to our topic scope. The next step of this paper will explain the research procedure adopted to achieve this goal.

Method

This paper adopted a mixed descriptive study based on a multisite ethnography case study (Hine 2015) in order to provide knowledge about the perception and impact of project-based learning in selected

HEIs through a research action in Cote d'Ivoire, a West African francophone country. Therefore, according to the study scope, researchers investigated in their own teaching context and classrooms to record participants experiences as students and colleagues, allowing them to identify their practices and well-being through the PBL approach process. This selection criteria were *accessibility to a classroom, teaching practice including PBL,* and *learners wellbeing recording*. As PBL is not well known by many teachers, this research design contextualizes the data collection validity and reduces biases to ensure diverse perspectives through in-depth analysis of needs, challenges, and outcomes of PBL according to participants points of view and practices (Gallagher & Savage, 2023; Gougou & Mahona, 2024; Kumar 2021). Moreover, the choice of a case study offered the advantage of investigating in accessible HEIs where researchers have a teaching position or connections according to inclusion/exclusion criteria focused on Educative Institutions (HEIs), teaching methods (PBL), and location (Cote d'Ivoire). In this perspective, it is noticeable that this mixed research action aimed at creating a viable research procedure through inclusive and exclusive criteria. This approach offered the reliable opportunity to involve participants in the research and to apply findings to empower other practitioners involved in PBL and wellbeing questions. This fact strengthens the research process for describing clearly the outcomes and results of the PBL integration in the classrooms utilizing the transformative teaching approach influencing students' wellness.

Sample

In this study, researchers investigated three (3) higher education institutions in Cote d'Ivoire, a West African Francophone country. Participants were selected according to a convenient sample of students and teachers involved in PBL in HEIs located in Yamoussoukro and Abidjan, the political and economic capital cities of Cote d'Ivoire: *Insitut Universitaire d'Abidjan (IUA), Insitut National Polytechnique Felix Houphouet Boigny (INPHB),* and the *University of Abidjan (UNIAbidjan).*

According to convenient sampling principles, participants selected were students and their teachers interacting during teaching activities using case studies or the PBL approach to solve various real problems encountered in society through technology integration in research and critical thinking class activities. Therefore, this study covered firstly a sample of students of the selected higher education institutions related to the PBL activities outcomes on their well-being and success expectations (Kovich et al., 2023; Yu, 2024). Secondly, participants were colleagues' (teachers and/or professors) to obtain their views and feedback about the effect of this new pedagogy on students' skills and the ability to communicate easily by using digital communication tools in research and problem-solving tasks (Suwaed et al., 2022; Zunaidah, 2024). According to the sampling size, this research took into consideration 435 students and 8 teachers according to their class activities and the outcomes of PBL on the learner's well-being and 21st-century skills. Students' sample of observation and interviews is mentioned in the graph below:

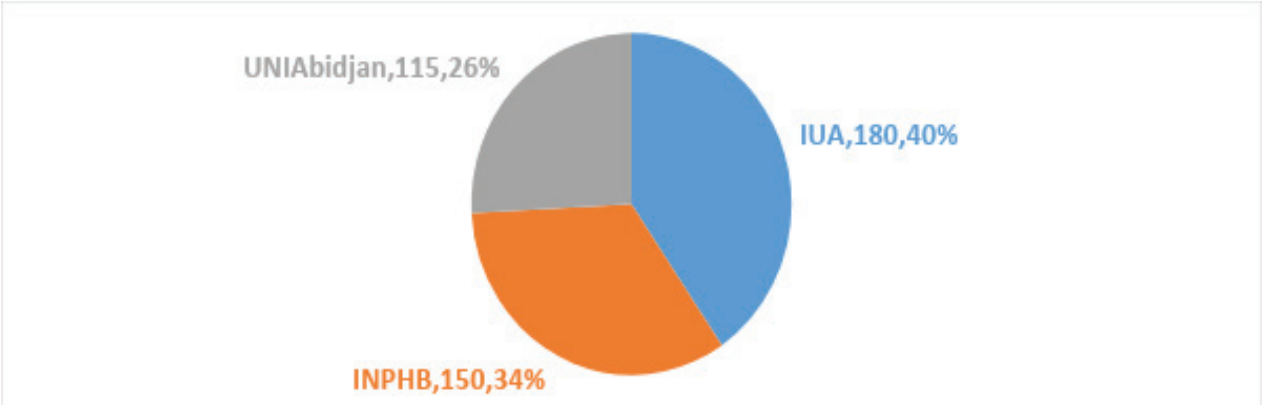


Figure 1: Students sampling

The main participants studies are organized in three sets: 1) *Literature and language (English, French)*; 2) *Communication and Information technology*; 3) *Business Management*. After the sample and sampling choice, researchers could collect data through tools shown in the next section.

Data Collection

In this mixed research action, three tools were used to collect the data from the participant's views and daily experiences according to PBL and wellbeing scopes in selected HEIs.

Firstly, classroom observation during the PBL tasks and assessments as well as homework allowed for the recording of the motivation, challenges, and progress of the learners of this method applied in their learning context. The observation took into consideration the five PERMA model variables and 21st-century skills acquisition in problem-solving activities from March to May 2024. For these two (2) months, students were observed by the researchers during class activities to record the effects of PBL on their personal and academic well-being in the three (3) selected HEIs. The observation criteria's were focused on learners *Positive Emotions (satisfaction, confidence, fear, etc.), Engagement (in PBL assignments), Relationships (with others), Meaning (membership, citizenship, community service involvement)* and *Achievement (success and Expectations)* through innovative ideas during the PBL assessments.

Secondly, researchers adopted an interactive approach through interviews to obtain participants views. They used an interview of students and some colleagues to acquire views of the impact of PBL on the human well-being skills acquisition according to their context (Yu 2024; Kovich et al. 2023). The choice of a semi-oriented interview with students allowed the collection of ideas about their wellbeing and skills outcomes in PBL pedagogy. A pretest with 5 students was led first. Then the whole interview of 15 students took place in May 2024 through a guide using the 3 items: *Project-based learning integration in local pedagogy; contextual challenges; Outcomes on well-being and 21st-century skills enhancement.* So, five questions were asked to respondents (as teachers and students): 1) What are your feelings about the integration of PBL or practice case studies in the teaching activities and assessments? 2) What are the benefits of this approach? 3) What are the challenges encountered related to your well-being through PBL activities? 4) How does PBL contribute to your well-being and 21st-century skills enhancement? 5). What are your suggestions for a better integration of PBL to support well-being in academic and non-academic activities? These one-to-one and face-to-face interviews took around 15 minutes per respondent. The sharing of the students and educators' experiences gave insights on the PBL application perception and outcomes in human well-being, specifically in the context of selected HEIs in Cote d'Ivoire. Thirdly, as a source to promote 21st-century pedagogical skills through PBL, a little questionnaire was filled out by 12 students in the selected HEIs too. This interaction with participants helped to adjust data processing depending on the feedback from the observation and constituted a key element of the data processing underlined in the next section.

Data Analysis

The scope of this study is to explore how project-based learning integration in higher education institutions allows fostering of learners' well-being to solve local communities' problems with new transferable skills supported by digital tools. Content and communication analysis were used to present the results of the interviews according to students' points of view (Wu & Zhang 2024; Lehtinen 2021). This analysis method was suitable to categorize clearly the views of participants according to their experience with PBL in HEIs for effective learner well-being/personal development for a sustainable society through critical thinking and problem solving oriented by 21st century pedagogy in learning. Finally, these data were processed, categorized, and interpreted in 2 subsections for the findings and analysis section: 1) *Benefits of Project Based Learning (PBL); 2) Project based learning (PBL) challenges.*

Therefore, after the description of this research methods section, the next section presents the findings and discussion, including the PERMA model in data interpretation on PBL influences on participants well-being in HEIs through positive psychology in learning activities.

Findings and Analysis

Findings underlined that in a digital era context, the integration of PBL in HEIs offers many benefits related to learners' well-being and empowerment through this student-centered pedagogy integration in Higher Education Institutions (HEIs) in Cote d'Ivoire. However, some contextual challenges are also mentioned in the second subsection.

Benefits of Project-Based Learning (PBL)

Project-Based Learning benefits in student's empowerment

Human well-being is very important in education, and learners' creativity can be supported by adequate methods applying digital communication technology tools. It is a crucial question in educational and professional institutions pedagogy requirements for human well-being in selected HEIs. It is noticeable in this student statement below:

> "Personally, practical case studies, and project-based learning helped me to explore another field related to real problems in societies. In our economic sciences activities, we used to examine new solutions to businesses problems during class assessments. I found that it is more creative and discovered many ways to solve problems with different alternatives." (IUA, Master's in Economy).

Another student pointed out this view:

> "Often, as young people, we have many ideas to generate innovative business offers and reduce the unemployment rate. Yet, the traditional teaching method is more focused on the theories. But, since the introduction of project-based learning in the pedagogy, I feel more motivated in teamwork to learn from peers and develop our own projects. It is pleasant to launch business ideas and think to implement them in the future as business solutions or ways to innovate for developing our own startups" (UniAbidjan, BA in Business Management).

Similarly, another BA student in IUA mentioned that,

> "In the beginning, I found case studies annoying because it required too much time out of class to reflect, find ideas online, write, and present. But last year, I understood that it can be a source of opportunities in order to get a job. It reduces the stress through new ideas shared with peers and increased belonging. These are very important aspects to apply our ideas and thoughts in PBL. It helps to be more engaged and aware of society's challenges to solve real issues in communities" (IUA, BA in Communication).

A teacher using PBL shared her observation in the statement below:

> "In general, I have noticed that most of my students are more engaged and motivated to participate in daily classes when they can see the big picture of what we are working towards in the semester. They can see how that week's lesson builds off the week before and scaffolds into the future so they can complete the projects. It may not be perfect, but there are many discussions about feedback and coaching and how to adjust. It is powerful. I love the energy of my classes." (INPHB)

According to classroom observation and all participants' points of view, PBL or case study learning increased student positive psychology by giving the possibility of doing to learners. PBL explores real facts. This pedagogy involves students in solution-making while allowing them the ability to share their own ideas based on their understanding of a problem to solve it through creativity, critical thinking, and communication with peers. PBL generates more connections between theories and practices by doing so to increase learners' ability to innovate and create alternative solutions to daily problems directly for community well-being and self-accomplishment. It shows that PBL results in a positive self-perception and students identity growth through all interactive activities during the learning at school or immersive engagement in communities or business as an agent of change in the Knowledge and Technology Transfer (KTT) approach (Gougou, 2023; Lim, 2023; Podgórska & Zdonek, 2024). The findings show that PBL positively increased learners' psychological well-being by offering an inclusive environment for self-identity acceptance in an intercultural perspective of social accomplishment. This increases learners job opportunities through empowerment activities, service learning, innovative thoughts, and networking. This fact presents PBL as an approach of supporting learners' accomplishments in a whole educational context, fostering a stressless learning environment. This is similar in the Kovich et al. (2023) study, underlining that well-being in education can be a source of human growth in students and educative stakeholders through positive psychology connecting learners in daily real problems encountered around them. Moreover, it encourages critical thinking to develop learners' global citizenship values such as tolerance, inclusion, equity, peace, sustainability, resilience, intercultural communication skills, etc. This fact is mentioned in Wang (2022), Cash (2017) and Almulla (2020) studies stating that project-based learning integration in the educational system engages students in deeper learning by doing. It is a pedagogical approach to empower students critical thinking and problem-solving for discoveries about the teaching topic itself, content, and various skills in authentic contexts.

Benefits in students' employment and resilience

According to participants, PBL supports students' employment and resilience. Related to the outcomes for human well-being, the investigation in higher education institutions in Cote d'Ivoire revealed the findings below: For a student in Communication in IUA**,**

> "PBL helped to be in touch with some enterprises for internships, and this increases the employment opportunities offered to students in our high school. In team projects, we use hybrid (online/offline) communication and collaboration to share our ideas. Digital literacy is very important to the extent that in our field. It is important to know technology for our projects. We also use leadership through task sharing, critical thinking, and creativity to innovate and solve problems."

A teacher in UniAbidjan remarked that:

> "It helps to create more cohesion in communication and collaboration. Students are engaged when it's a project they choose. They can utilize all the theories they've been learning and actually do something practical with it. It's so fun to watch them discover more about who they are and watch their excitement as they engage with others and put together mind-blowing solutions to problems. So creative and talented." (UniAbidjan)

According to a postgraduate student in IUA:

> "For me, it balances the learning activities by blending the skills acquired. As I am in the IT domain, we need to be connected with various real problems in order to be effective at work after graduation. It is often funny to learn by practicing and get ideas from peers in PBL."

Another teacher observation is mentioned in the statement below:

> "In my business English class, students worked on the chairing a meeting project, where each student had a role they needed to play, and the chairman needed to guide the meeting to successful completion. This project utilized collaboration, communication, critical thinking, problem-solving, and student leadership. Each week students needed to complete personal tasks as well as group tasks utilizing all aspects of 21st-century skills." (INPHB)

According to the participants, project-based learning in local academic pedagogy increases students' creativity, well-being, and professional integration by enhancing their 21st-century skills as lifelong learners in critical thinking, teamwork, digital literacy, problem-solving, and intercultural communication abilities. As an outcome, it improved lifelong learning outcomes, resilience (mental health, well-being, soft skills mastery, etc.), positive social integration, and job opportunities. Findings underlined that this approach allowed for increased youth entrepreneurship and resilience through problem-solving skills. So that learners become the next leaders and sources of innovation. Therefore, faced with employment challenges (lack of jobs, low income, pressure, burnout, and so on), PBL offered new ways to create new businesses as startup opportunities to sustain the society's development by providing economic growth, environmental preservation, and community well-being. For Getuno et al. (2022) and Almulla (2020), this leads to nurturing learning, which supports youth innovation and creativity. It means that PBL builds a dialogue between academics and the real world to solve society's real challenges through the knowledge shared and acquired by students during their training in HEIs. In this perspective, according to a teacher participant statement:

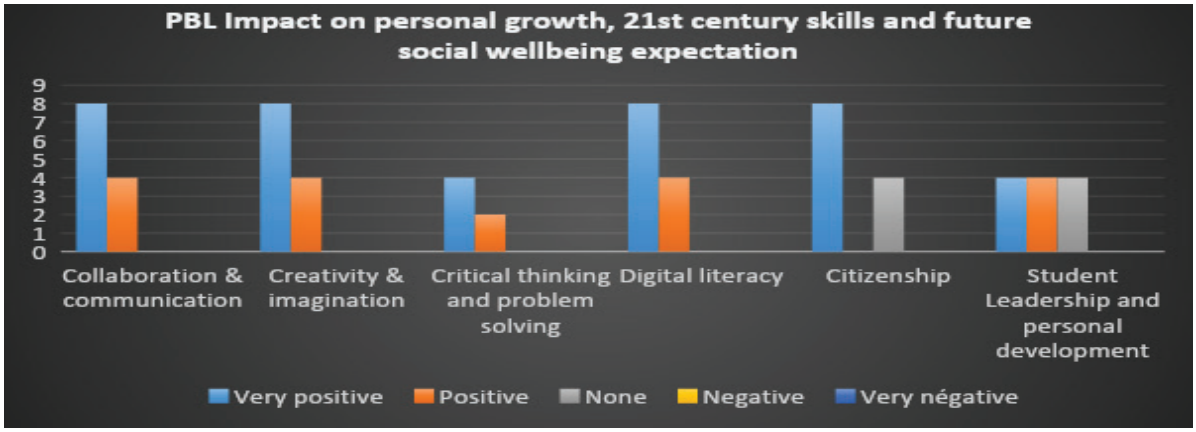
> "Do it as much as possible. It is so beneficial. It's not always black and white, and there can be several adjustments that need to be made along the way, and overall, it's incredibly enriching for students and teachers. I think the goal of teaching is not necessarily teaching what to think, but how to think. We need to train not just the mind but also help to develop the whole person: body, mind, and spirit so they can know who they are, how to connect with others, and how to engage in the world to help grow and sustain our communities." (INPHB).

Fostering PBL in education is an important lever of human development and fostering a more resilient society. Indeed, this world encounters a multitude of challenges these years, and the fact that empowering students for resilience in the educative system with more practice approaches helps the next generation

of leaders to be aware of the planet and their own environment's needs. This educational development theory encourages students to be actors of transformation and self-accomplishments. In other words, project-based learning integration in local pedagogy offers new skills acquisition as a lever of academic pedagogy, equipping learners for job opportunities and 21st-century skills supporting their well-being.

PBL Impact on personal growth, 21st-century skills and social wellbeing expectation

According to the findings, project-based learning integration in local pedagogy positively influences students' creativity, well-being, and professional integration by enhancing their 21st-century skills as lifelong learners in selected HEIs in Cote d'Ivoire. A survey related to PBL impact on personal growth, 21st-century skills, and future social well-being expectations provided the results below:



Source: Participant's point of view in IUA, INPHB, UniAbidjan

According to the above data, project-based learning integration in local pedagogy increases students' creativity, well-being, and professional integration by enhancing their 21st-century skills as lifelong learners in critical thinking, teamwork, digital literacy, problem-solving, and intercultural communication abilities. Consequently, PBL supports students' positive experience and mental well-being in academic training and connection to the community. It increases students' creativity, well-being, and professional integration by enhancing their 21st-century skills as lifelong learners in critical thinking, teamwork, digital literacy, problem-solving, and intercultural communication abilities. This finding is underlined by other researchers, mentioning that these skills enhanced through PBL result in job opportunities, personal growth, and accomplishments for a sustainable society. In this scope, as part of global citizenship education, 21st-century skills promotion through PBL allowed active participation in preventing, reducing, and even repairing environmental damage according to SDGs perspectives (Leite, 2022; Martinez, 2022; Paschal & Gougou, 2022; Shamaieva et al., 2023; Suwaed 2022). One effort to play an active role in raising awareness of the environment is through education, especially. Similarly, Kumar (2021) emphasizes that these outcomes include the fact of personal growth by knowing how to live together, valuing diversity, and developing civic and digital literacy. For students, it is also about learning to be lifelong learners, being a team member, and thinking of oneself as a global citizen for community sustainability. Hence, educators should ensure that students improve their intercultural competence as well.

In brief, findings underlined that in a digital era context, project-based learning integration in local pedagogy increases students' creativity, well-being, and professional integration by enhancing their 21st-century skills as lifelong learners and intercultural communication abilities. However, as innovative pedagogy, in the next section, our findings focused specifically on challenges encountered by participants related to PBL integration in education to foster human well-being.

Challenges of Project Based Learning (PBL)

In teaching and learning contexts, many challenges prevent the perfect integration of PBL in HEIs due to sociocultural environments, psychological backgrounds, pedagogy, and teaching habits, according to the participants. A student stated:

> "In PBL, we need computers, the internet, and the ability to master research online in academic tasks. But in our context, it is not easy because we need more funds and digital mastery to use the tools and platforms. In addition, we must submit the findings in a file, including buying new materials and using new digital skills. That is a big challenge because few of us master technology, and this issue is high in our low-income context." (IUA, BA Communication).

Another student mentioned that traditional education policy background affects the implementation of learners' findings, affecting their engagement:

> "We have a good idea or project, yet we don't have the possibility to exploit them in real business opportunities and launch startups. Faced with unemployment, our project could be used to create jobs and make money. However, there is not support to apply our projects for a Knowledge and Technology Transfer (IUA)".

On the pedagogical approach, this challenge is mentioned by another teacher participant:

> "Even if 21st-century pedagogy is integrated, the overuse of past traditional pedagogy is still there, and many students expect quizzes as assessments. They need to change their mindset in order to understand the useful effect of PBL or case studies in the learning. The neglect to assure the perfect job through the projects is another issue of this shift in classrooms. In our country, youth unemployment is very high, and it is a pedagogical mastery challenge for teachers and learners too." (UniAbidjan).

According to the teachers and students' points of view, teaching environmental challenges related to the infrastructures, materials, and educational policies could negatively affect PBL integration in the educative system for students' well-being. It is underlined by the research participants that the teaching materials and environment, such as low ICT, Lab, lack of startup incubators, can affect the practical integration of PBL in some cases, such as the one of digital imbalance.

Indeed, participants underlined digital mastery and accessibility (Internet, digital skills, technology) as a big issue due to the need to enrich the local class project assessment in real problem solving with online information and research done by others (students, practitioners, researchers) in the same context. This increases students' fear and stress to commit mistakes due to the psychosocial habit and social pressure to be ~~as~~ a facilitator or knowledge provider. These findings are similar to the scope of the Getuno et al. (2022) study on the challenges of PBL adoption and implementation in African universities: f*acility and resource constraints, structural constraints, large class sizes, information overload (ICT gap), time constraints, human capital constraints, lack of technology, and limited learning*. All these challenges impact the pedagogical integration due to teachers and students' inexperience or their own misunderstanding of their role in PBL class or case studies assessment (Lim, 2023). Similarly, Yu (2024) studied identified challenges in PBL implementation and suggested avenues for future inquiry. Therefore, some contextual challenges, such as digital mastery and accessibility or implementation of learners' ideas, affect their engagement in society through knowledge and technology. Transfer initiatives to get job opportunities, support the local community's sustainability and human well-being (Álvarez, 2021; Gallagher & Savage, 2023).

Moreover, *educative policy background is often a challenge. However,* tremendous changes have occurred throughout the years, and recently more and more importance has been given to the 21st Century Skills, even though some teachers still follow traditional methods and do not incorporate such skills as collaboration, creativity and innovation, critical thinking, communication, problem-solving, and ICT skills. However, as mentioned by participants, it is a revolutionary approach requiring more attention in the educational system and ~~a~~ support to transform learners' findings into marketable opportunities and reduce both poverty and gaps for human well-being. Unfortunately, the integration of PBL in the local educational system often encounters imbalanced pedagogy and a lack of many teaching resources, allowing learners and teachers to apply this approach effectively for each other's well-being. In the extension with other studies, it is also evident that common challenges that are encountered in PBL integration are as follows: *a) time-management, b) teamwork, c) motivation, d) learners' attitude, e) unexpected situations, f) shifting roles, g) lack of resources, h) preparation i) assessment* (Lim, 2023; Podgórska & Zdonek, 2024). These challenges can create stress and discouragement and prevent the well-being of both learners and teachers, according to *positive Emotion, Engagement, Relationships, Meaning and Accomplishment.*

In brief, in this study, contextual challenges encountered by the participants are related to various factors affecting PBL integration and human well-being in the whole educational system and particularly in HEIs policies in Cote d'Ivoire. These challenges related to the sociocultural environment, psychological background, pedagogy, and teaching environment disturb teaching and learning outcomes on learners' satisfaction and well-being.

Conclusions and Recommendations

This study aimed to explore how project-based learning integration in higher education institutions allows for fostering learners' well-being and solving local communities' problems with new transferable skills supported by digital tools. The mixed-method approach in 3 higher education institutions in Cote d'Ivoire revealed that PBL contributes to positive psychology in the learning environment and equips both teachers and learners and the whole of society for sustainable development through lifelong learning and 21st-century skills adoption. Contextual challenges such as digital mastery and accessibility or the implementation of learners' ideas affect their engagement in society through knowledge and technology transfer initiatives to get job opportunities and support the local community's sustainability and human well-being. These findings support that educational institutions must promote project-based learning in pedagogy to support lifelong learning and human well-being, to foster current and next generations skills such as flexibility, resilience, problem-solving, and similar things. As a limitation, this empirical study utilized small samples that did not reflect the situation in the whole teaching context including primary schools, secondary schools, and others.

Implication and Recommendations

According to the findings, PBL integration in educative policy calls to transform the curricula design and educative approach to offer practical assignments to learners. This includes updating national educative policy by offering continued professional development opportunities to teachers and a HEIs partnership with society for students PBL tasks to support innovation and community sustainability (Hill 2019; Guo 2020; Lim 2023; Žerovnik & Šerbec 2021). This educational policy in educative institutions will imply equipping learners for their skills acquisition and well-being by solving real problems thanks to PBL assignments and 21st-century skills acquisition. Therefore, the practical implication consists of promoting project-based learning in pedagogy to support communities' problem-solving, lifelong learning, and human well-being, to foster the current and next generations' skills as flexibility, resilience, and similar things. These recommendations take into consideration the implications for policy and practice of PBL in educative systems as mentioned below:

- Integration of PBL in human education to foster positive emotion, engagement, relationships, meaning, and accomplishment for a good usage of ICT in classrooms and students' growth (Butler & Kern 2016; Hill et al. 2019; Martinez 2022; Lim 2023);

- Educational institutions must promote project-based learning in pedagogy to support lifelong learning and human well-being (flexibility, resilience, etc.).

- Fostering human well-being in current and next generations calls for PBL to support citizens of the digitalized era through 21st-century skills (critical thinking, problem-solving, digital mastery, intercultural communication).

- Integration of MOOCs in PBL and classrooms to open minds to another world for students' well-being (Gougou 2024)

- Provided professional development to use PERMA and positive psychology to support PBL and 21st-century skills acquisition in the whole educational system (Leontopoulou 2020).

Similarly, for Getuno (2022), the way forward in overcoming PBL challenges in African HEIs identified six main solutions to the challenges of PBL use in African HEIs: human resource training on PBL, redesigning competence-based curriculum, providing required facilities and infrastructure, university-industry partnerships, careful planning, and overhauling the educational system.

Declarations

Acknowledgements: Not applicable.

Authors' contributions: All authors have equal contribution in this manuscript.

Competing interests: "The authors declare that they have no competing interests"

Funding: No financial support was received from any organization Ethics approval and consent to participate:

Ethics approval and consent to participate: It is declared that scientific and ethical principles have been followed while carrying out and writing this study. Ethical document obtained. The participants provided informed consent. All the sources used have been properly cited.

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