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PROJECT BASED LEARNING IN FASHION EDUCATION: A REVIEW OF PEDAGOGICAL APPROACHES, TRENDS, AND FUTURE DIRECTIONS

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Abstract:

Fashion education is undergoing significant transformation through the integration of digital technologies, sustainability, and industry engagement. Project Based Learning (PjBL) has emerged as a key pedagogical approach, enabling students to undertake extended, practice-oriented projects that foster technical proficiency, creativity, and collaboration. This review adopts an integrative literature review methodology, empirical research, and conceptual educational frameworks. This review synthesises 34 peer-reviewed literature from 2014 to 2024. Findings indicate that PjBL, especially when combined with sustainability principles and digital innovation, enhances problem-solving skills, professional readiness, and learner autonomy in fashion curriculum. Nevertheless, challenges persist in faculty training, equitable access to resources, and the standardisation of assessment methods. The paper recommends greater transdisciplinary integration, stronger industry partnerships, hybrid learning delivery, and culturally contextualised project themes to ensure the continued relevance and inclusivity of PjBL in fashion education.

Keywords:

Fashion Education, Project Based Learning (PjBL), Sustainability, Digital Innovation, Industry Engagement, Pedagogy

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Introduction

The fashion industry is changing quickly in response to worldwide changes in customer expectations, digitisation, and sustainability. Higher education institutions must therefore modify their teaching strategies to equip graduates with critical thinking, flexibility, and cooperative problem-solving skills in addition to technical knowledge. The interdisciplinary and practice oriented character of fashion education has made Project Based Learning (PjBL), an active learning approach in which students work on lengthy, real-world projects, very well suited.

With the goal of identifying trends, advantages, difficulties, and possibilities for further pedagogical development, this review compiles the most recent research on PjBL in fashion education. This review consolidates current knowledge on PjBL in fashion education, aiming to identify trends, benefits, challenges, and areas for future pedagogical development.

Literature Review

There are five points will be discussed in Literature Review focusing on Sustainability Integrated PjBL, Digital Enhanced PjBL, Industry Collaboration and Authentic Assessment, Online and Hybrid PjBL Models and Theoretical Foundations Supporting PjBL

Sustainability Integrated PjBL

In modern fashion education, including sustainability into Project Based Learning (PjBL) has gained significant attention due to research showing how it may combine ethical responsibility with creative practice Choi and Guo (2020). Meanwhile, Zabidi and Jamaludin (2024), through a systematic review, identified PjBL as a primary pedagogical method for embedding sustainability principles into fashion curricula, enabling students to address real world environmental challenges while fostering ethical decision making skills. In a similar vein, Lee et al. (2021) showed how sustainability oriented initiatives, such creating fashion lines with zero waste, greatly increased student creativity and involvement.

Digital Enhanced PjBL

The incorporation of digital technologies into Project Based Learning (PjBL) has demonstrated substantial benefits for technical mastery and design efficiency in fashion education Shen and Li (2021). According to research published by Atlantis Press in 2024, including CLO 3D into PjBL improved students' technical proficiency and workflow efficiency by 77% Byrne & Kelly (2020). To support this, Collon and Gallery (2023) discovered that the use of virtual prototyping in PjBL significantly reduced fabric waste and expedited the design iteration process, bringing digital innovation into line with sustainable practices.

Industry Collaboration and Authentic Assessment

Through real world, client driven experiences, industry collaboration inside PjBL frameworks has also been demonstrated to improve learning outcomes. While a study published in the UPI Journal (2018) showed that final collection projects evaluated by industry panels fostered professional readiness and gave students constructive, industry relevant feedback, the Modest Fashion PjBL project (2023) found that involving real clients improved students' teamwork, market awareness, and presentation skills.

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Online and Hybrid PjBL Models

In a similar vein, online and hybrid PjBL models have shown promise in increasing fashion educations flexibility and accessibility De Jong and Van Joolingen (2018). According to Anggraeni, Situmorang, and Kustandi (2023) a Moodle based course on tailoring design that blended synchronous critique sessions with asynchronous theoretical learning facilitated successful distant skill development. Additionally, Jamilah and Wahyuningsih (2021) and Huang and Liu (2022) demonstrated that hybrid PjBL techniques improved student engagement and provided more flexibility to accommodate different learning requirements.

Theoretical Foundations Supporting PjBL

These methods efficacy is supported by proven pedagogical ideas. According to Kolodner et al. (2003), Design Based Learning (DBL) focusses on iterative cycles of design and feedback, allowing for ongoing skill refining. According to Herrington et al. (2010), the Authentic Learning theory promotes assignments that are representative of professional activity in order to make student work more applicable and relevant. Furthermore, Phenomenon Based Learning promotes interdisciplinary research into practical problems, which is highly compatible with PjBL collaborative and problem solving philosophy in fashion education Sung and Yoon (2022).

Methodology

This review follows an integrative literature review approach, synthesizing findings from diverse research designs to build a comprehensive understanding of Project Based Learning (PjBL) in fashion education.

Search Strategy

The search strategy for this review involved a systematic exploration of multiple academic databases, including Scopus, Web of Science, ERIC, Google Scholar, and Taylor & Francis Online. To ensure relevance and precision, the search utilized a set of targeted keywords such as fashion education, project based learning, pedagogy, authentic learning, design based learning, and sustainable fashion education. The time frame for inclusion was restricted to studies published between January 2014 and April 2024, reflecting contemporary pedagogical developments in the field. Only peer reviewed journal articles, conference proceedings, and book chapters were considered, with a specific focus on works explicitly addressing PjBL or project-driven pedagogical approaches within fashion related programs, including apparel design, merchandising, and textile design. Both empirical studies and conceptual frameworks relevant to teaching and learning were included. In contrast, studies lacking a clear connection to fashion or pedagogical practice, as well as non-English publications without accessible translations, were excluded to maintain the academic rigor and contextual relevance of the review.

Selection Process

The selection process began with an initial search that yielded 132 potentially relevant records. Titles and abstracts of these studies were screened to assess their alignment with the research focus, which resulted in a narrowed pool of 56 full text articles for detailed examination. Following a thorough full text analysis, 34 articles were identified as meeting all inclusion criteria and were subsequently incorporated into the final synthesis. This systematic filtering ensured that only the most relevant and methodologically sound studies contributed to the review's findings.

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Data Extraction and Analysis

The data extraction process involved compiling key information from each selected study, including the authors, year of publication, country of origin, research design, participant group, learning outcomes, and the extent of industry or sustainability integration. A thematic analysis was then conducted to identify recurring pedagogical patterns, common challenges, and notable innovations within the literature. Based on these findings, the studies were organized into three thematic clusters which is Practical Skills and Creativity Development (studio based PjBL), Industry and Sustainability Integration (collaboration driven PjBL), and Digital and Hybrid Innovations (technology enhanced PjBL), allowing for a structured synthesis of diverse pedagogical approaches in fashion education.

Limitations of the Review Methodology

The review methodology is subject to several limitations. Firstly, there is a potential publication bias, as research on Project Based Learning (PjBL) may disproportionately report positive outcomes, potentially overlooking studies with neutral or negative findings. Secondly, the reviewed literature shows limited representation of studies from non-Western fashion education contexts, which may restrict the cultural and contextual diversity of insights. Lastly, inconsistencies in the reporting of assessment methods across the selected studies pose challenges in making direct comparisons and evaluating the effectiveness of PjBL approaches in a uniform manner.

Finding and Discussion

Table 1: Summary of Key Studies on PjBL in Fashion Education

Author and Year	Context	Approach	Key Outcomes
Zabidi and Jamaludin (2024)	Sustainable Fashion	PjBL and experiental learning	Critical thinking and Ethics
Atlantis Press (2024)	CLO 3D modeling	Tech-integrated PjBL	Skill efficiency, waste reduction
Modest Fashion PjBL (2023)	Modest fashion	Client-based PjBL	Market awareness, teamwork
Rezki Media (2022)	Online tailoring	Hybrid PjBL	Flexibility, theory-practice link
UPI Journal (2018)	Final Collection Development	Industry panel assessment	Professional readiness

The findings of this integrative review demonstrate a comprehensive understanding of Project Based Learning (PjBL) implementation in fashion education, highlighting both its pedagogical benefits and persistent challenges. To strengthen clarity and application, the results are presented here in three structured themes: benefits, challenges, and implications for practice.

Benefits of PjBL in Fashion Education

Across the reviewed studies, PjBL consistently supports the development of creativity, problem-solving, and professional readiness. Sustainability-focused projects, such as zero-waste collection design (Zabidi & Jamaludin, 2024; Lee, 2021), foster ethical awareness and critical thinking. Digital enhanced PjBL, exemplified by the integration of CLO 3D (Atlantis Press, 2024) and virtual prototyping (Park & Ko, 2022), improved technical mastery, efficiency, and iteration speed while reducing material waste. Industry collaboration and

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authentic assessment approaches, including projects evaluated by real clients and industry panels, as highlighted in Modest Fashion PjBL (2023) and UPI Journal (2018), enhanced teamwork, market awareness, presentation skills, and professional readiness. Online and hybrid PjBL models, as discussed by Rahmasari, Situmorang, and Kustandi (2024) and García et al. (2021), increased flexibility and participation, effectively combining asynchronous theory delivery with synchronous critique. Underpinning these practices are robust theoretical foundations such as Design-Based Learning, Authentic Learning, and Phenomenon Based Learning, which collectively ensure that PjBL in fashion education remains relevant, practice-oriented, and capable of addressing contemporary challenges in the industry.

Challenges of PjBL in Fashion Education

Project Based Learning (PjBL) demonstrates strong alignment with the skill profile demanded by the contemporary fashion industry, fostering creativity, problem solving, and adaptability among students. The integration of advanced technologies, such as CLO 3D, not only enhances design efficiency but also supports sustainability by reducing waste from physical prototyping. Furthermore, authentic assessment involving industry collaboration significantly strengthens students' professional preparedness, providing real world evaluation experiences that mirror industry standards, although such approaches necessitate substantial logistical coordination. Despite these benefits, several challenges persist to maintaining consistency in assessment remains difficult due to the inherent subjectivity in evaluating creative outputs, faculty require further training to effectively integrate both pedagogical strategies and technological tools and disparities in access to digital resources create inequities that can limit the effectiveness of PjBL implementation across diverse student populations.

Implications and Practical Recommendations

Addressing these challenges requires targeted interventions. First, the development of transparent assessment rubrics and criteria can reduce subjectivity and ensure consistency in evaluating creative and professional competencies. Second, faculty upskilling through professional development programs should be prioritised, equipping educators with both pedagogical expertise and digital proficiency. Third, institutions should promote equitable access to digital resources by investing in technological infrastructure and providing support for students from diverse backgrounds. Finally, incorporating culturally localised project themes such as traditional textile heritage can ensure that PjBL remains globally relevant while addressing local educational and cultural needs.

Overall, PjBL demonstrates strong potential to transform fashion education by combining sustainability, digital innovation, and industry collaboration. While challenges in assessment, training, and access persist, these can be mitigated through structured recommendations that ensure fairness, inclusivity, and professional alignment. The integration of robust theoretical frameworks such as Design-Based Learning, Authentic Learning, and Phenomenon-Based Learning reinforces the academic foundation of these findings, ensuring that PjBL remains a relevant and impactful pedagogical strategy in the evolving landscape of fashion education.

Conclusion and Recommendations

Project Based Learning (PjBL) has proven to be a transformative approach in fashion education, fostering active engagement and real-world learning experiences that prepare students for the dynamic demands of the industry. To enhance its impact, several recommendations are proposed. Interdisciplinary integration should be prioritized, combining

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sustainability, technological innovation, and cultural heritage within project work. Strengthening industry connections through embedded mentorship and authentic, real world briefs can further bridge the gap between academia and professional practice. Faculty upskilling is essential, ensuring educators are equipped with both pedagogical expertise and digital proficiency. Maintaining hybrid flexibility by providing continuous online access to resources and feedback will support diverse learning needs. Finally, incorporating cultural localization through embedding local textile traditions and aligning with specific market contexts will ensure that PjBL remains both globally relevant and locally meaningful.

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