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Short Paper

The Fashion Curriculum and New Media Technology Skills of the Students at Guangdong: Basis for Curriculum Enhancement

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Abstract

The global fashion industry is undergoing a profound digital transformation, demanding a workforce skilled in both traditional design principles and contemporary digital tools. This study investigates the relationship between the implementation of the fashion curriculum and the development of new media technology skills among undergraduate students majoring in Costume Performance in Guangdong Province, China. The study focused only on the integration of new media technologies in the school's fashion curriculum. A descriptive-correlational research design was employed, collecting quantitative data to assess curriculum implementation across objectives, content, teaching strategies, and evaluation, alongside students' self-assessed competencies in cognition, attitude, and practical skills regarding new media technologies. Findings indicate that students held consistently positive evaluations of the existing curriculum. More significantly, a strong and statistically significant positive correlation was identified between the perceived quality of curriculum implementation and the level of students' new media technology skills, confirming the formal curriculum's pivotal role as a primary facilitator for digital competency acquisition. The study concludes that while the current

pedagogical framework is well-regarded, its strategic enhancement is imperative to address gaps in strategic application and progressive skill scaffolding. Recommendations include embedding advanced digital tools, fostering industry collaboration, and adopting competency-based assessments.

Keywords – fashion performance, fashion curriculum, new media technology, digital literacy, industry alignment

INTRODUCTION

The contemporary global fashion industry is undergoing a seismic and irreversible digital transformation, fundamentally restructuring its value chain from initial concept generation and design to production, marketing, omnichannel distribution, and post-consumption engagement (Bertola, 2020). This revolution is fueled by converging advancements in artificial intelligence (AI) and machine learning, big data analytics, augmented and virtual reality (AR/VR), blockchain technology, and the dominant, interactive platforms of social media. Within this hyper-connected and digitally mediated landscape, proficiency in new media technologies and overarching digital literacy have transcended their status as supplementary skills to become indispensable core competencies for any fashion professional seeking relevance, resilience, and leadership. Guangdong Province, a pivotal hub for China's fashion manufacturing and design, and a national leader in digital economy initiatives, epitomizes this transformative momentum. Strategic provincial policies such as "Digital Guangdong" and the "Silk Road 2.0" initiative provide a coherent framework that actively fosters the integration of cutting-edge technologies within local fashion enterprises. This integration manifests in AI-powered trend forecasting, immersive virtual showrooms, digital twin simulations for supply chain optimization, blockchain-enabled transparency for sustainability, and sophisticated, data-driven consumer relationship management.

This technological shift has precipitated a corresponding paradigm shift in labor market demands within the region. Employers now express a pressing need for graduates who embody a hybrid skillset: foundational expertise in traditional fashion disciplines—including garment construction, textile science, and live runway presentation—must be seamlessly coupled with advanced capabilities in leveraging new media technologies. These digital competencies are essential for innovation in design expression, crafting compelling brand narratives across digital channels, analyzing complex consumer datasets to inform strategy, and competing effectively in a dynamic global marketplace. This evolving industrial landscape places a heightened responsibility on higher education institutions (HEIs) to act as critical bridges over a widening skills chasm (Davidson & Chase, 2025). Consequently, the fashion curriculum must be rigorously re-examined and reconceptualized not as a static repository of knowledge but as a dynamic, facilitating condition and deliberate pedagogical intervention. It must evolve beyond offering occasional digital workshops or standalone software courses.

Instead, it requires the systematic and longitudinal integration of comprehensive new media technology training throughout its pedagogical architecture. Such integration aims to bolster students' performance expectancy—their belief in the tangible utility and applicability of these digital skills—and to equip them methodically with the multifaceted competencies demanded by both contemporary and anticipatory fashion industry practices.

Despite this clear imperative, a significant and persistent disconnect is frequently observed between the rapid, pervasive digitization of the global fashion sector and the relatively static, often tradition-oriented pedagogical frameworks that continue to govern many costume and fashion performance education programs. Preliminary observational studies and stakeholder dialogues conducted between 2020 and 2023 within Guangdong institutions revealed a consistent pattern: while students demonstrated proficient mastery of classical runway techniques, photographic posing, and the physical presentation of garments, they concurrently exhibited notable difficulties when engaged in digital content creation (e.g., professional video editing, graphic design for social media), virtual environment and stage design, algorithmic analysis of audience engagement metrics, strategic planning of social media campaigns, and data-informed personal branding. These digital proficiencies are increasingly central to the operational and creative ecosystems of modern fashion. This observed skills gap is corroborated by industry diagnostics. A 2023 report by the Guangdong Fashion Association indicated that 78% of surveyed local fashion enterprises prioritize recruiting candidates who possess dual expertise in physical performance artistry and sophisticated digital storytelling capabilities. Paradoxically, the same report suggested that graduates from local fashion performance programs reported approximately 42% lower confidence in their digital skill sets compared to peers from educational institutions in other regions or countries known for more technologically adaptive and integrated curricula.

By moving beyond anecdotal or purely qualitative evidence, this research provides quantitative validation of this relationship, thereby establishing a robust, data-driven evidence base. Building upon this foundation, the study proposes a targeted, evidence-informed curriculum enhancement framework. This scholarly endeavor responds to an urgent regional socio-economic imperative for cultivating a future-ready creative workforce. Simultaneously, it seeks to contribute meaningfully to the global academic discourse concerning educational adaptation, curricular innovation, and human capital development in the context of the broader Fourth Industrial Revolution.

LITERATURE REVIEW

The Digital Transformation of the Fashion Industry

The digital revolution has transcended the status of a passing trend to become the very bedrock of the contemporary fashion industry's operational, creative, and commercial processes (Bertola, 2020). Technologies such as AI, big data, AR, VR, and

omnipresent social media platforms have fundamentally redefined the lifecycle of fashion. This spans from algorithmic trend prediction and generative design, through automated and on-demand manufacturing (e.g., 3D printing), to immersive retail experiences (virtual try-ons) and influencer-driven, community-based marketing. In Guangdong, this macro-trend is amplified and guided by proactive provincial strategies. "Silk Road 2.0," for instance, is not merely a trade initiative but a vision that explicitly seeks to integrate the region's rich traditional apparel heritage (like Lingnan embroidery and Qipao craftsmanship) with digital innovation, creating a unique "tech-heritage" fusion. This transformation generates an unequivocal imperative for educational institutions. To remain relevant and fulfill their societal contract, they must modernize their curricula to reflect these new realities, ensuring graduates are bilingual in the languages of traditional craftsmanship and digital fluency (Sun et al., 2025).

Fashion Curriculum as a Facilitating Condition

The academic curriculum serves as the primary institutional lever for developing students' competencies. This study is anchored in Tyler's (2013) seminal Model of Curriculum design, which emphasizes rational planning and alignment between clear educational objectives, selected content, organized learning experiences, and effective evaluation procedures. In the digital age, this model must be dynamically applied to ensure new media technologies are not peripheral add-ons but are systematically integrated into each of these components (Sata, 2024). The rise of new media has precipitated fundamental changes in how information is created, disseminated, and consumed, necessitating concomitant shifts in pedagogical methods, content selection, and evaluation paradigms. Within this framework, the curriculum operationalizes as a "facilitating condition"—a structured environment that either enables or constrains the acquisition and application of new media skills (Ostanina et al., 2023). Its design directly influences students' opportunity to learn, practice, and refine these critical capabilities.

New Media Technology Skills in Fashion Education

For the purpose of this study, new media technology skills are conceptualized as a tripartite construct: **Cognition** refers to the understanding of digital tools, platforms, and underlying principles (e.g., how social media algorithms work, the ethics of digital representation). **Attitude** encompasses the willingness to engage with, adapt to, and ethically critique technology, including confidence and self-efficacy beliefs. **Practical Skills** denote the hands-on proficiency in using specific tools, such as video editing software (Adobe Premiere, DaVinci Resolve), 3D garment simulation software (CLO 3D, Browzwear) (Shetabi, 2024), AR/VR effect creation (Spark AR, Lens Studio), and strategic management of social media platforms. Research indicates that while student cohorts may demonstrate generally high new media literacy in consumption, significant disparities exist in creation and critical analysis skills, often mediated by demographic factors such as gender, prior educational background, and internet usage patterns (Jones & Procter, 2023; Luan et al., 2023). These findings underscore the necessity for a

deliberately inclusive and differentiated approach to curriculum design, one that acknowledges diverse starting points and actively works to promote equitable skill development for all learners.

Gaps in Current Pedagogical Frameworks

Despite the availability of proven pedagogical models and digital tools, their integration into fashion curricula remains inconsistent and often superficial. A synthesis of recent theoretical and empirical studies reveals three predominant, interconnected gaps: **(1) Industry-Curricular Disconnect:** There is a persistent lag where curricula fail to reflect the rapidly evolving suite of digital competencies prioritized by employers, leading to a graduate skills mismatch (Davidson & Chase, 2025; Sun et al., 2024). **(2) Demographically Mediated Literacy Disparities:** Variations in access, prior experience, and socio-cultural perceptions of technology can create unequal learning trajectories, challenging the curriculum's ideal role as a universal equalizing facilitator (Jones & Procter, 2023). **(3) Pedagogical Fragmentation:** Effective, innovative teaching strategies for digital skill acquisition (e.g., project-based learning, immersive simulations, capstone projects) are often implemented in isolation rather than as part of a coherent, scaffolded curricular sequence (Zou et al., 2023). This study sought to address these gaps by not merely identifying them qualitatively but by quantitatively investigating the strength and nature of the relationship between holistic curriculum implementation and comprehensive student skill development, thereby providing an empirical foundation for targeted and coherent curricular enhancement. Recent studies further highlight the potential of multimodal teaching strategies—integrating visual, auditory, interactive, and project-based elements—to enhance skill acquisition in fashion education, particularly in digital and technical domains (Gao et al., 2024).

METHODOLOGY

This study employed a descriptive-correlational research design, a methodology suitable for examining relationships between variables in educational contexts (Essel et al., 2022). This non-experimental approach was selected to systematically describe the current state of curriculum implementation and students' self-assessed skill levels, and to examine the nature and strength of the relationship between these two sets of variables without manipulating them. It comprised undergraduate students majoring in Costume Performance across higher education institutions in Guangdong Province. A sample of 120 participants was drawn using stratified random sampling from four universities.

The primary data collection tool was a structured survey questionnaire. It was adapted from established instruments measuring learning implementation and technology skills, contextualized for the specific domain of fashion performance education in China (Luan et al., 2023). The final questionnaire consisted of two main sections: **Curriculum Implementation Evaluation:** 24 items measuring four dimensions (six items each) on a 5-point Likert scale (1=Very Poor to 5=Excellent): Objectives, Content,

Teaching Strategies, and Evaluation Methods. **New Media Technology Skills Self-Assessment:** 18 items measuring three domains (Six items each) on a 5-point Likert scale (1=Very Unproficient to 5=Very Proficient): Cognition, Attitude, and Practical Skills.

Table 1. Demographic Characteristics of Participants

Characteristic	Frequency	Percentage
Gender		
Female	76	63.3%
Male	44	36.7%
Year Level		
1st Year	45	37.5%
2nd Year	21	17.5%
3rd Year	50	41.7%
4th Year	4	3.3%

The instrument underwent rigorous content validation by a panel of five experts in fashion design, digital media arts, and educational technology. A pilot test was conducted with 30 students from a non-participating university. Reliability analysis using Cronbach's alpha yielded a coefficient of 0.89 for the entire instrument, and subscale alphas ranged from 0.82 to 0.87, confirming high internal consistency and reliability for formal administration.

The data collection was conducted online with informed consent, ensuring anonymity and confidentiality. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 26. Analysis proceeded in two stages:

Descriptive Statistics: Frequencies, percentages, means, and standard deviations were calculated to summarize participant demographics and to provide a profile of both curriculum implementation ratings and self-assessed skill levels.

Inferential Statistics: Independent samples t-tests and one-way Analysis of Variance (ANOVA) were used to test for significant differences in skill levels based on demographic factors (gender and year level). The core analysis employed Pearson's Product-Moment Correlation (r) to examine the strength and direction of the linear relationships between each dimension of curriculum implementation and each domain of new media technology skills. The significance level was set at $p < 0.05$.

RESULTS

This study's quantitative analysis provides a comprehensive overview of students' perceptions of the course and their corresponding self-assessed skill levels. Students' evaluations of the fashion course implementation remained positive across all dimensions. Students' high satisfaction with the educational framework is reflected in their confidence in their own abilities with new media technologies. Students' self-assessed skills in cognitive, attitudinal, and practical application areas all reached "proficient" or "very proficient." The simultaneous presentation of these two datasets establishes a fundamental link between a well-implemented course and the development of key digital skills, laying the foundation for a more in-depth correlational analysis of this relationship in the subsequent sections.

Based on student self-assessment data, the system analyzed performance in the application of new media technology across three dimensions: cognition, attitude, and skills. Descriptive statistical analysis was employed to examine the demographic characteristics of the respondent students and their evaluations of fashion course implementation and new media technology application.

Cognitive Dimension

The assessment of students' mastery of the new media technology knowledge system revealed a composite mean score of 4.15, indicating a systematic understanding of technological principles and innovative applications. This outcome reflects students' effective assimilation of the curricular knowledge framework, demonstrating notable strengths in continuous learning capabilities and creative integration.

Table 2. Assessment of New Media Technology Application in Cognition

Statements	Mean	Interpretation	SD
1. Knowledge and basic operation of new media technology	4.14	Proficient	0.77
2. Application of new media technology can be operated in multiple professional fields	4.13	Proficient	0.73
3. Able to integrate creativity into new media technology applications	4.17	Proficient	0.74
4. In terms of new media technology, able to flexibly discover and solve problems	4.12	Proficient	0.74
5. Continuously learn and update your technical capabilities to respond to the rapid development and changes of the industry	4.19	Proficient	0.74
Cognition	4.15	Proficient	0.7

Note. 4.21-5.00 = Very Proficient | 3.41-4.20 = Proficient | 2.61-3.40 = Average

Table 2 shows that students demonstrated strengths in systematic knowledge reserves in the cognitive dimension, particularly in their ability to continuously learn and integrate creative technologies, demonstrating that they have established a theoretical framework and iterative awareness for new media technologies. However, their understanding of cross-disciplinary transferability is relatively weak, reflecting a lack of curriculum instruction on the adaptability of technology to diverse industry scenarios. Strengthened training on the "technology-scenario" connection is needed to bridge this knowledge gap.

These findings are consistent with recent studies underscoring the importance of digital literacy in education. For instance, Johnson et al. (2022) noted that targeted training significantly boosts both competence and confidence in using new media tools, thereby enhancing academic engagement and performance. Similarly, Lee and Kim (2023) highlighted that self-perceived proficiency correlates strongly with motivation and innovation in digital learning contexts. The high proficiency levels observed in this study reflect successful integration of technology in teaching and learning processes, which not only enhanced students' learning experiences but also prepared them for the evolving demands of the digital fashion industry.

Moreover, the role of new media in expanding educational accessibility and engagement was well-documented. As noted by Dhume et al. (2019), frequent use of social media and digital tools among students further supports the notion that today's learners are highly engaged with digital technologies, which facilitates their proficiency in new media applications. Additionally, frequent use of social media and digital tools among students—as noted by Dhume et al. (2019)—further supports the notion that today's learners are highly engaged with digital technologies, which facilitates their proficiency in new media applications.

Attitude Dimension

Students' attitudes toward technology application were highly positive, with an overall mean score of 4.22. This result confirms that students highly recognize the value of new media, particularly in terms of practical participation and flexible technology application.

The attitude dimension performed significantly better, with particularly strong performance in technical application flexibility and active participation in practical activities, demonstrating students' strong intrinsic drive for technology and willingness to innovate. This high consistency provides an ideal foundation for psychological acceptance of course upgrades, but caution should be exercised against the "motivation-skill conversion paradox" where strong attitudes fail to translate effectively into practical outcomes.

These findings align with existing educational research underscoring the role of attitude in technology adoption. Garcia and Lopez (2021) affirmed that positive attitudes

correlate strongly with technology acceptance and sustained engagement, leading to better learning outcomes. Similarly, Sharma et al. (2022) emphasized that a favorable outlook toward digital tools encourages experimentation and collaboration. The high attitude scores observed in this study reinforce that students are not only technically capable but also psychologically prepared to embrace digital innovations—a vital precursor to successful learning in modern educational environments.

Table 3. Assessment of New Media Technology Application in Attitude

Statements	Mean	Interpretation	SD
1. Willing to understand and apply the content of the fashion course	4.22	Very Proficient	0.7
2. Actively participate in the interactive and practical sessions in the course	4.24	Very Proficient	0.65
3. Flexibly apply new media technologies to different aspects of the fashion industry	4.24	Very Proficient	0.68
4. Willing to further improve skills through fashion courses, especially in the combination of new media and fashion	4.19	Proficient	0.73
5. Enhance technical support of courses (such as the use of teaching platforms, provision of digital tools, application of demonstration activities, etc.)	4.2	Proficient	0.71
Attitude	4.22	Very Proficient	0.63

Note. 4.21-5.00 = Very Proficient | 3.41-4.20 = Proficient | 2.61-3.40 = Average

Furthermore, the integration of new media literacy into the curriculum, as noted by Jensen (2020), supports the development of such positive attitudes by providing structured opportunities for practice and application, thereby helping students adapt more effectively to digital demands.

Skills

The overall mean score for students' practical technical skills was 4.07, indicating that they meet the requirements for basic tool application, but there is a significant gap in their advanced practical skills. In particular, their performance in algorithm-driven promotion and effect control is relatively weak.

Although the skill dimension has reached a proficient level, it is the lowest of the three dimensions, highlighting the uneven development of core capabilities: basic tool operations are up to standard, while algorithm-driven promotion and effect conversion control are significantly lagging behind, revealing that the course has a structural deficiency in cultivating high-level practical capabilities such as data-based decision-

making and market verification, and it is necessary to build a "technology-market" closed-loop training mechanism through industry-education collaborative projects.

Table 4. Assessment in the new media technology application by the student respondents in terms of Skills

Statements	Mean	Interpretation	SD
1. Able to use new media video editing software to produce high-quality videos.	4.07	Proficient	0.75
2. Understand the operating rules and interactive skills of new media live broadcast platforms and be able to carry out live broadcast activities.	4.08	Proficient	0.82
3. Use new media special effects technology (such as AR, VR special effects) to add creativity and highlights to performances.	4.09	Proficient	0.79
4. Able to master the dissemination rules and algorithm mechanisms of new media platforms and effectively promote their own performances.	4.06	Proficient	0.79
5. When using new media technology for performance planning and promotion, you can achieve ideal results.	4.06	Proficient	0.8
Skills	4.07	Proficient	0.74

Note. 4.21-5.00 = Very Proficient | 3.41-4.20 = Proficient | 2.61-3.40 = Average

These findings correspond with recent research on educational technology integration. Johnson et al. (2021) emphasized that students' self-perceived technology skills greatly influence their engagement and outcomes in digital learning environments. The high proficiency reported here supports the notion that students are not only adopting new tools but are also integrating them meaningfully into learning contexts. However, the slight dip in confidence regarding promotional strategies and algorithmic literacy may indicate areas where pedagogical attention is needed—especially given the importance of these skills in the contemporary fashion landscape, where digital presence and engagement are critical.

Furthermore, studies such as Suh & Lee (2023) acknowledge that while technology-enhanced fashion courses are well-received, a disconnect sometimes remains between curricular content and real-world industry expectations. This reinforces the value of continuously updating course modules to include practical training in digital promotion, platform algorithms, and evaluative metrics.

Relationship Between Curriculum and Skills

The empirical findings of this study substantiate a robust and statistically significant symbiotic relationship between the implementation of the fashion curriculum and the development of students' new media technology skills. The strong positive correlations (Pearson's r ranging from 0.734 to 0.843, $p < 0.001$) across all dimensions of the curriculum and skill domains indicate that the formal curriculum functions not merely as a context for learning, but as the primary facilitating condition and a direct driver of digital competency acquisition.

This relationship is characterized by a clear mechanistic pathway: the curricular objectives and content establish the essential cognitive foundation and declarative knowledge, while the teaching strategies and evaluation systems operationalize this knowledge into pragmatic skills and shape positive attitudes. Notably, the evaluation dimension demonstrated the strongest correlation with students' attitudes ($r = 0.843$), underscoring its pivotal role beyond mere assessment—it acts as a critical pedagogical instrument that fosters a proactive mindset toward technology adoption. Conversely, the slightly weaker, though still strong, correlation between course content and practical skills ($r = 0.734$) suggests that the translation of knowledge into demonstrable competency requires more than well-structured content; it necessitates immersive, application-oriented pedagogical bridges.

Table 5. Correlation Matrix: Curriculum Implementation and New Media Technology Skills

New Media Tech Skills	**Objectives**	**Content**	**Strategies**	**Evaluation**
Cognition	0.782	0.784	0.785	0.813
Attitude	0.804	0.812	0.805	0.843
Skills	0.749	0.734	0.761	0.775

Note. $p < 0.05$, $p < 0.01$, $p < 0.001$

This matrix reveals several key insights:

Overall Synergistic Relationship: The consistently high correlations across the matrix empirically validate the hypothesis that a well-implemented curriculum is intrinsically linked to stronger student skill development. The curriculum and skill development appear to exist in a mutually reinforcing cycle; **The Potent Role of Evaluation:** The single strongest correlation in the entire matrix is between the Evaluation dimension and students' Attitude (**r* = .843). This suggests that the methods and philosophies of assessment—far from being merely a grading exercise—profoundly shape learners' technological self-efficacy, confidence, and overall mindset. When assessment is authentic, formative, and focused on real-world digital outputs (e.g., portfolios, campaign reports), it builds "feedback loops of confidence," a concept aligned with modern competency-based assessment literature (Cano et al., 2023); and **The Challenge of Translating Knowledge into Skill:** While still strong, the correlation

between Course Content and Practical Skills (*r* = .734) is the lowest in the matrix. This indicates that well-structured and relevant content knowledge, though essential, is insufficient on its own for developing demonstrable practical competency. The translation of declarative knowledge ("knowing what") into procedural skill ("knowing how") requires deliberate pedagogical bridges. This is reflected in the stronger correlation between Teaching Strategies and Practical Skills (*r* = .761), underscoring the vital importance of active, applied, experiential, and project-based learning strategies in skill formation.

Analysis of Demographic Differences

Independent samples t-tests revealed one statistically significant demographic difference. A significant difference was found in self-assessed Cognitive skill scores based on gender (*t*(118) = 2.45, *p* < .05). Male students (M = 4.28, SD = 0.50) reported higher confidence in their cognitive understanding of new media technologies than female students (M = 4.08, SD = 0.55), despite having no significant differences in their scores for Attitude or Practical Skills. This finding aligns with and amplifies existing international research on persistent gender-based confidence gaps in digital and technological literacies, even in the absence of objective performance differences (Jones & Procter, 2023). Conversely, a one-way ANOVA test found no statistically significant differences in any of the three skill domain scores across the four academic year levels (F-values non-significant). This null finding suggests a potential shortcoming in the current curricular structure: it may lack a clearly defined, progressive, and differentiated pathway for skill advancement, where skill development is visibly and measurably scaffolded from foundational first-year courses to complex, integrative fourth-year applications.

DISCUSSION

The empirical results of this study provide compelling, quantitatively grounded evidence that positions the intentionally designed and delivered formal curriculum as the principal institutional mechanism for cultivating new media technology competencies within fashion higher education. The robust correlations (*r* = 0.734 to 0.843) between all facets of curriculum implementation and corresponding student skill levels offer strong validation for the theoretical postulate that pedagogical architecture is a direct and powerful determinant of technological skill acquisition outcomes. These findings significantly extend the practical application of Tyler's (2013) foundational curriculum model into the complex terrain of digital pedagogy. As critically analyzed by Sata (2024), Tyler's principles of alignment remain profoundly relevant. This study demonstrates that a coherent, deliberate alignment between clearly articulated digital learning objectives, updated and industry-relevant content, active and student-centered teaching strategies, and authentic, formative evaluation systems creates a synergistic instructional ecosystem. Within such an ecosystem, digital competencies are not left to serendipity or extracurricular initiative but are systematically nurtured and developed. This corroborates the findings of Zou et al. (2023), who empirically demonstrated through capstone course

models that such curricular coherence is essential for transforming abstract theoretical knowledge into the tangible, industry-ready capabilities demanded by employers—a translation process clearly evidenced in our correlation matrix where Teaching Strategies and Evaluation showed particularly strong links to Practical Skills.

The particularly powerful relationship uncovered between evaluation systems and student attitudes (*r* = 0.843) demands a substantive reconceptualization of the pedagogical role of assessment. This strong correlation implies that assessment modalities function as powerful pedagogical interventions in their own right, fundamentally shaping learners' technological self-efficacy, identity, and mindset. When assessments mirror real-world, professional challenges—such as creating a comprehensive digital fashion portfolio, designing and pitching a social media influencer campaign with analytics, or receiving iterative feedback from industry practitioners—they do more than measure learning; they actively generate what can be termed "feedback loops of confidence." This aligns with emerging research on multimodal teaching strategies, which demonstrate that integrating diverse instructional modes—such as virtual simulations, collaborative projects, and digital portfolios—can significantly enhance both technical proficiency and strategic thinking in fashion students (Gao et al., 2024). This finding necessitates a strategic paradigm shift in fashion education: moving from a default view of evaluation as a summative, judgmental endpoint for assigning grades, towards embracing it as a continuous, formative, and confidence-building process that is deeply integrated throughout the entire learning journey. This shift is strongly supported by contemporary scholarship on competency-based assessment in higher education (Cano et al., 2023).

A critical, practice-oriented insight emerging from the data is the discernible disjunction between students' perceived operational technical proficiency and their confidence in strategic, analytical application. Students reported relative competence in tool manipulation tasks (e.g., applying AR filters, editing a video clip) but expressed notable under confidence in higher-order strategic skills such as leveraging platform algorithms for audience growth, interpreting analytics to inform decisions, or designing integrated, data-driven cross-platform campaigns. This bifurcation echoes what scholars have identified as a pervasive "digital strategy gap" in fashion and related creative fields, wherein technical execution skills develop faster than the strategic and critical thinking needed to deploy them effectively for business or artistic goals. Sun et al. (2025), in their cross-cultural study applying the TPACK (Technological Pedagogical Content Knowledge) framework, similarly argue that authentic digital fashion literacy requires a sophisticated fusion of technical execution with strategic intelligence and critical content knowledge. This essential duality must be explicitly engineered into the curriculum through dedicated modules on digital marketing analytics, case studies evaluating campaign ROI, and complex projects that require students not only to create digital content but also to justify their creative and platform choices with strategic rationale and projected metrics. The integration of AI tools for trend analysis or content personalization, as

discussed in adjacent fields (Richter et al., 2025), could further enrich this strategic layer of the curriculum.

The pedagogical implications extend to equity considerations. The observed gender-based disparity in cognitive confidence, despite equivalent practical performance, amplifies the findings of Jones and Procter (2023) on the socio-cultural mediation of technological self-perception. Such confidence gaps, well-documented in employability literature, can adversely impact career aspirations, self-promotion, and negotiation trajectories, independent of an individual's actual capability. This necessitates the intentional design of inclusive pedagogical practices. Curriculum designers and instructors should incorporate metacognitive scaffolding techniques that make strategic thinking visible, implement structured peer learning and critique protocols to normalize the learning process, and proactively showcase diverse role models—including female and minority leaders—who are successfully navigating tech-fashion intersections. The goal is to ensure all students, regardless of gender or background, develop the cognitive assurance and professional identity to match and fully leverage their technical abilities.

Furthermore, the high student endorsement of industry-aligned strategies underscores the vital importance of external, authentic validation in the learning process. This aligns with the work of Davidson and Chase (2025), who posit that deep, structured industry collaboration provides the essential "authenticity bridge" that transforms abstract academic exercises into tangible career readiness and professional identity formation. The positive student feedback on such collaborations reinforces the call from industry bodies like the Guangdong Fashion Association for more practice-oriented training. It also suggests that deeper, more immersive, and formally structured industry engagement—through extended internships, live client briefs, or co-taught modules—could be a key operational mechanism for resolving the identified disconnect between technical skill and strategic application, by embedding strategic thinking within authentic, consequential projects.

In synthesis, this discussion situates empirical findings within an enriched theoretical framework. It confirms that a strategically enhanced curriculum—one that maintains Tyler's coherence, leverages assessment as a motivational and formative engine, deliberately bridges the technical-strategic divide, embeds inclusive confidence-building practices, and fosters deep industry connectivity—constitutes the essential educational infrastructure for cultivating the sophisticated digital fluency demanded by the contemporary global fashion ecosystem.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the comprehensive analysis of the data, this study draws the following conclusions:

The findings of this study led to several substantive conclusions regarding the role of the fashion curriculum in developing new media technology competencies among undergraduate students in Guangdong Province. Primarily, the formal curriculum is empirically established as a central driver and essential facilitating condition for digital skill acquisition.

The significant positive correlations observed confirm that a robustly implemented curriculum is directly associated with enhanced student competencies across cognitive, attitudinal, and practical domains. Secondly, while student satisfaction with the existing curriculum's structure and intent is notably high, discernible and actionable gaps persist. These gaps pertain to a need for more interactive and transparent learning objectives, greater consistency in self-assessment mechanisms, a marked increase in diverse and frequent hands-on practical experiences, and a sharper curricular focus on cultivating higher-order strategic and analytical capabilities alongside foundational technical proficiency.

A third critical conclusion highlights a persistent and pedagogically significant discrepancy between students' operational technical competence and their confidence in strategic, analytical application. This underscores an urgent imperative for curricula to transcend basic software training and explicitly integrate technical tool mastery with strategic thinking, data literacy, ethical reasoning, and campaign-level analytics. Furthermore, the study reveals that achieving equity in technology skill development requires deliberate pedagogical intervention. The observed gender-based confidence gap in the cognitive domain—despite equivalent ratings in practical performance—illustrates that pedagogical equity is not automatic and necessitates targeted, inclusive strategies to foster self-efficacy and professional identity across all student demographics. Finally, the absence of significant differences in skill scores across academic year levels suggests that the current curriculum may lack a clearly articulated and differentiated pathway for progressive skill advancement. This points to the need for a more intentionally scaffolded, spiral, and tiered curricular design to make learning progression explicit and measurable from foundational to advanced levels.

Recommendations

To strategically address the identified gaps and enhance the fashion curriculum and pedagogy for the demands of the digital age, a multi-faceted set of recommendations is proposed, grounded in the study's findings and supporting literature.

For curriculum design and pedagogy, it is recommended to systematically embed industry-standard digital tools—such as CLO 3D, Adobe Creative Suite, and AR/VR development platforms—as core, non-optional components of relevant courses, supported by a phased multi-year implementation plan. Concurrently, the development

of a tiered, spiral curriculum framework is essential to architect a transparent skill development pathway. This framework should delineate specific learning outcomes for each year, guiding students from foundational digital literacy in Year 1, through applied content creation and tool mastery in Year 2, to strategic campaign management and data analytics in Year 3, culminating in capstone integration and professional portfolio development in Year 4. A fundamental shift towards competency-based and authentic assessment regimes is also crucial. This involves reforming evaluation methodologies to prioritize demonstrable competencies and real-world outputs, such as through standardized digital portfolio assessments, industry-validated projects, and rubrics that evaluate both technical execution quality and the strategic rationale behind creative decisions.

At the institutional and industry collaboration level, recommendations call for moving beyond superficial engagements to establish formal, long-term school-enterprise partnerships. These partnerships should facilitate structured internship programs, "live" industry briefs for course projects, co-developed micro-credentials, and sustained mentorship, thereby constructing an essential "authenticity bridge" to career readiness. Complementary to this, institutions must invest in dedicated faculty development programs focused on building educators' Technological Pedagogical Content Knowledge (TPACK) and commit capital investment to maintain state-of-the-art digital studio spaces, licensed software access, and robust IT support.

IMPLICATIONS

For educators, administrators, and curriculum developers, the study offers actionable insights and a roadmap for modernization. It provides a Concrete Roadmap for Curriculum Modernization; Highlights the Central Role of Pedagogy in Skill Translation;

Shifts Focus from Technical Operators to Strategic Thinkers; Advocates for Assessment Reform as a Pedagogical Tool. It addresses the Creative Industry Skills Gap: Contributes to national and international efforts to bridge the critical skills gap in higher education, showcasing a viable model for aligning creative arts curricula with the demands of Industry 4.0.

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DECLARATION

Conflict of Interest

There are no conflicts of interest exist between the authors regarding the content of the paper.

Informed Consent

Informed consent form was obtained from all participants involved in the study.

Ethics Approval

The researchers secured Ethical clearance from Trinity University of Asia Ethics Clearance Committee with protocol Number 2025-2nd-CASE-Huang-v1.

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