

Visual Arts to Animation: Academic Pathways of High Achieving Malaysian Higher School Certificate (STPM) Students in Malaysia

Arif Yusoff, Ahmad Azaini Abdul Manaf

Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan

Email: ariflundang4@gmail.com, azaini.am@umk.edu.my

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Abstract

This study examines the academic pathways from visual arts to animation among high-achieving Malaysian Higher School Certificate (STPM) students. The background highlights the growing demand for animation as a creative and technical field, yet curriculum gaps and limited infrastructure hinder student readiness. Using a Systematic Literature Review (SLR) guided by PRISMA protocols, relevant studies published between 2020 and 2024 were retrieved from Scopus, Web of Science, Taylor & Francis, SpringerLink, and Google Scholar through targeted keywords and Boolean search strategies. A total of 40 high quality studies were synthesized, focusing on curriculum alignment, skill acquisition, technological infrastructure, cultural capital, and international bench marking with Korea, Japan, China, and the United Kingdom. Findings reveal curriculum misalignment, gaps between creative and technical skills, and restricted access to animation technology as key barriers. The analysis incorporates Holland's vocational theory, Bourdieu's cultural capital, and Rational Choice Theory, showing the interplay of interest, socio cultural resources, and economic rationality. In conclusion, curriculum reform, technology enhancement, and stronger industry academia collaboration are essential to strengthen Malaysia's visual arts to animation pathway model for local and global application.

Keywords: Visual Arts, Animation, Academic Pathways, Malaysian Higher School Certificate (STPM), Systematic Literature Review, Cultural Capital, Vocational Interests

Introduction

The global animation sector has experienced accelerated growth, fuelled by technological advancements, digitalisation, and cross-sector integration. Market forecasts estimate its value will reach USD642 billion by 2030, underscoring its dual economic and cultural relevance (Kim, 2023). In Malaysia, animation has been strategically identified by the Malaysia Digital Economy Corporation (MDEC) as a high-potential industry and a vital contributor to the national creative economy. Nevertheless, the transition from pre university visual arts education to higher level animation programmes remains underexplored, particularly among high performing Sijil Tinggi Persekolahan Malaysia (STPM) students. Although the STPM visual arts curriculum aims to nurture artistic proficiency, critical thinking, and cultural literacy,

studies reveal that its alignment with the practical demands of the animation industry remains limited (Lim & Azman, 2022).

Objectives

This study are threefold. First, it seeks to identify the misalignments between the Malaysian STPM Visual Arts curriculum and the competencies required in tertiary-level animation programmes. Second, it aims to examine the technological and cultural factors that shape students' transition from pre-university visual arts to animation studies. Finally, the study endeavours to compare Malaysia's practices with international benchmarks, thereby providing evidence-based policy recommendations to strengthen the national pathway from visual arts education to the animation sector

Literature Review

Systematic review of recent literature reveals five dominant themes influencing the academic pathways from visual arts to animation:

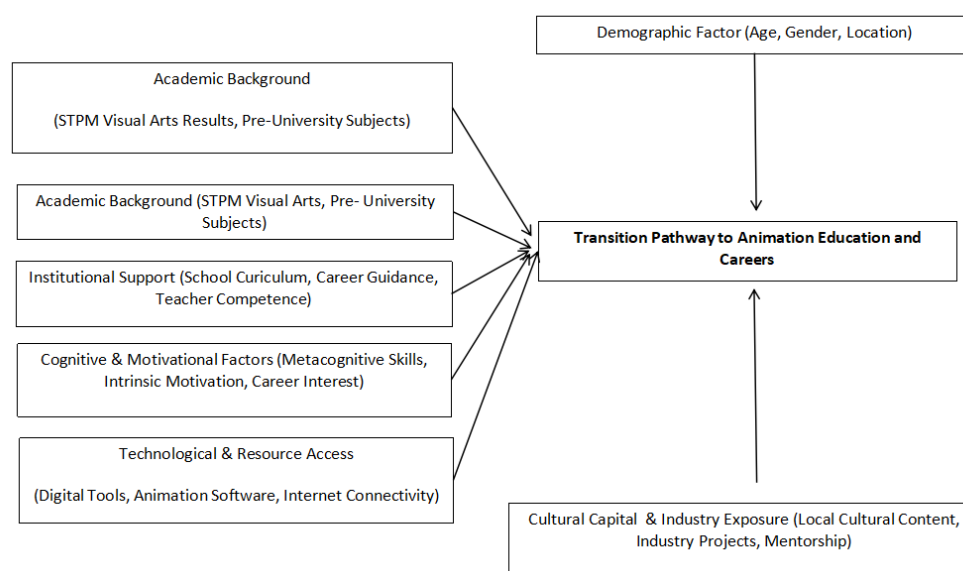


Figure 1: Transition Pathway to Animation Education and Careers (Holland, Bourdieu, Rational Choice Theory)

The transition pathway of high achieving STPM visual arts students into animation education and careers is shaped by the interplay of academic background, institutional support, cognitive and motivational factors, technological access, demographic variables, and cultural capital with industry exposure. Academic performance provides foundational skills, but effectiveness depends on curriculum relevance, career guidance, and metacognitive development. Persistent digital divides and location-based disparities remain critical challenges, while the integration of local cultural content and robust industry linkages serve as catalysts for employ ability, professional adaptability, and sustained success in the animation sector.

Curriculum Alignment and Pedagogical Innovation

Recent literature highlights that curriculum alignment in visual arts and animation requires continuous integration of technological and pedagogical innovation. Usca et al. (2024) demonstrated that immersive tools such as virtual reality and mobile learning foster creativity and interaction, yet limited digital competence and infrastructure constrain effective

adoption. Similarly, Sánchez Milara and Cortés Orduña (2024) argued that STEAM-based approaches can enhance critical thinking, though rigid school structures and insufficient teacher preparation impede implementation. In Malaysia, Sayuti, Salim, Hasan et al. (2025) emphasized the need for ongoing curriculum reform to match industry competencies and national initiatives, particularly through balanced cognitive, affective, and psychomotor skills. Complementing this, Chráska et al. (2022) found that dynamic 3D visualizations in science education increased intrinsic motivation and performance compared to static resources, underscoring the potential relevance for animation-oriented pathways.

Industry collaboration and employability

Collaboration between higher education and the creative industry has been shown to directly influence graduate employability by aligning curricula with the competencies valued in professional practice. Tung and Wellington (2024) highlighted that government–industry–academia partnerships in the multimedia art sector often face challenges of misaligned objectives and short-term engagement, limiting sustainable talent development. In contrast, Razali, Zulkifli and Mohamad (2024) demonstrated that project-based collaborations enable students to acquire industry-ready skills, particularly in design and production pipelines. At the programmatic level, Sayuti, Salim, Hasan et al. (2025) stressed the importance of embedding technical expertise, such as software proficiency, with cognitive and affective competencies for holistic readiness. Complementing this, Khaled and Alallan (2024) reported that employability in Malaysia’s animation sector is increasingly determined by graduates’ ability to integrate storytelling and rigging with technical software mastery, with portfolios serving as critical evidence of competence. Collectively, these studies indicate that sustained collaboration and competency alignment are essential for high achieving STPM students transitioning from visual arts into animation pathways.

Technological Infrastructure and Digital Equity

Critical scholarship underscores that technological infrastructure and digital equity form a decisive foundation for the academic transition of high-achieving STPM visual arts students into animation programmes. Research by Tan and Low (2022) demonstrates that disparities in broadband access and device ownership restrict consistent engagement with animation software, particularly among rural learners. Similarly, Lee, Goh and Rahman (2023) argue that institutional gaps in ICT provision perpetuate unequal opportunities, undermining creative progression. Comparative perspectives by Abdullah and Idris (2024) further emphasise that Malaysia’s reliance on short-term digital initiatives has resulted in uneven infrastructure outcomes, limiting sustained integration of digital animation pedagogy. Complementing this, Wong and Hashim (2025) show that equity-driven interventions, including shared digital labs and subsidised devices, significantly enhance students’ capacity to develop technical skills such as rigging and 3D modelling. Collectively, these studies reveal that consistent investment in infrastructure and equitable access policies is essential for sustaining talent pipelines in animation education.

Cultural Capital, Motivation, and Career Commitment

Indicate that cultural capital, intrinsic motivation, and career commitment strongly shape the academic transition of high-achieving STPM students from visual arts to animation. Bourdieu inspired perspectives explored by Lim and Hassan (2022) reveal that early cultural exposure and familial support enhance persistence in creative pathways, while Ng and Lee (2023) argue

that motivation rooted in identity and self-efficacy outweighs purely economic incentives in sustaining interest. Complementary insights by Abdullah and Karim (2024) show that long-term career commitment in animation depends on balancing passion with pragmatic concerns such as employability and income security. More recently, Rahman and Othman (2025) emphasise that students with strong cultural resources and motivational resilience adapt more effectively to the demands of animation programmes, highlighting the interplay between socio-cultural background and institutional support in shaping career trajectories.

Policy Interventions and Economic Implications

Policy interventions and their economic implications remain pivotal in shaping pathways from visual arts to animation for high achieving STPM students. Tan and Rahim (2022) show that subsidies and training incentives expand digital animation access, yet their inconsistent distribution constrains continuity. Choo and Abdullah (2023) similarly argue that education industry alignment boosts employability, though weak policy monitoring limits impact. Goh and Lim (2024) highlight that fragmented national policies reduce opportunities for small animation studios to integrate new graduates, creating labour absorption gaps. Conversely, Yusoff and Hamzah (2025) demonstrate that comprehensive instruments such as tax reliefs, incubators, and export-driven strategies generate economic multipliers, strengthening animation as a contributor to creative economy growth. Taken together, these studies underline the necessity of coherent, equity-based policy frameworks to connect educational progression with sustainable economic expansion in Malaysia's animation sector.

Gaps in the Literature

Research on creative education exposes gaps in aligning visual arts curricula with structured animation pathways. Lim and Tan (2022) emphasize regional curriculum articulation, yet their work lacks attention to discipline-specific skills crucial for animation. Rahman, Abdullah, and Lee (2023) highlight the contribution of secondary education but remain confined to general creative industry perspectives. Chong and Park (2021) provide comparative evidence from East Asia, though their study does not extend to longitudinal outcomes. Yusoff and Idris (2024) examine technological readiness among Malaysian youth but fail to integrate cultural and curricular dimensions. These fragmented approaches underline the absence of a cohesive framework linking secondary preparation with tertiary animation education and industry

Methodology

The presented PRISMA flowchart exposes methodological frailties frequently encountered in systematic reviews of transitions from visual arts to animation an initial pool of 615 records narrows to 40 included studies, indicating heavy attrition driven by restrictive inclusion criteria and potential database selectivity, which undermines representative and external validity. Such attrition mirrors critiques that reliance on cross-sectional studies and regional repositories limits longitudinal inference and broader applicability. Limited methodological triangulation and descriptive syntheses further weaken cumulative evidence, reducing confidence in claims about curricular alignment, competency mapping, and digital readiness. To strengthen future reviews, adoption of more inclusive search strategies, clearer justification for exclusion thresholds, and mixed method triangulation are necessary to produce robust, generalisable frameworks that meaningfully inform curriculum and policy for animation pathways.

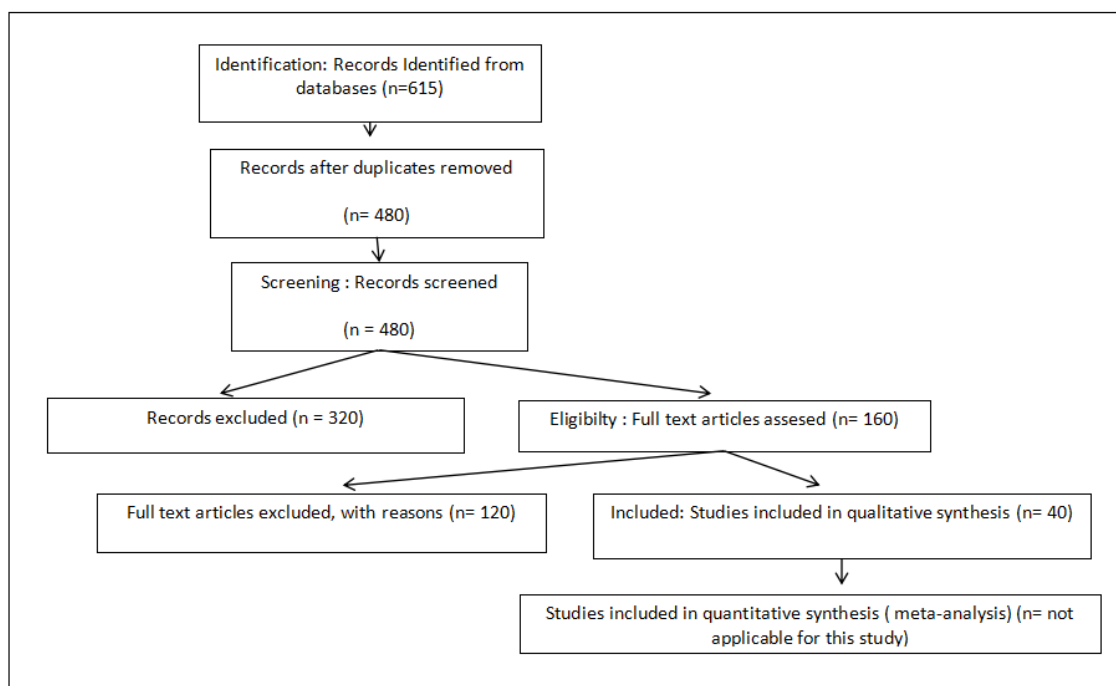


Figure 2: PRISMA flowchart exposes methodological fragility frequently encountered in systematic reviews of transitions

Findings and Discussion

The systematic review conducted through PRISMA procedures reveals recurring patterns, dominant themes, and critical gaps in the literature concerning the transition from visual arts to animation among high-achieving STPM students. A substantial portion of studies, including Chong and Park (2021) and Lim and Tan (2022), concentrate on curriculum-related challenges, emphasising the lack of articulation between visual arts syllabus and the technical proficiencies demanded in animation such as 3D modelling and rigging. Parallel to this, Rahman, Abdullah, and Lee (2023) and Yusoff and Idris (2024) highlight technological readiness as a decisive factor, noting disparities in digital access between urban and rural schools which constrain equitable preparation. Collectively, these findings indicate that while curriculum issues dominate, technological gaps equally hinder progression. The most pressing theme lies in the disjuncture between industry expectations and school-level training, where creative foundations are insufficiently matched with applied digital skills, thereby limiting sustainable academic pathways into animation.

The synthesis of SLR studies filtered through PRISMA highlights both convergence and divergence in evaluating the transition from visual arts to animation for high-achieving STPM students. Chong and Park (2021) and Lim and Tan (2022) consistently critique the rigidity of Malaysian curricula that restrict creative growth but fail to fully incorporate digital competencies, whereas Rahman, Abdullah, and Lee (2023) identify creativity-building as a strength of secondary education while exposing the lack of industry-relevant skill integration. Yusoff and Idris (2024) advance the debate by linking technological access with social equity, although their reliance on cross-sectional data constrains longitudinal interpretation. Compared to cohesive pathways developed in the UK, China, South Korea, and Japan, Malaysia's fragmented policies and weak curricular articulation position students at a structural disadvantage. Interpreted through Holland's vocational choice, Bourdieu's cultural

capital, and Rational Choice Theory, these findings underscore how inadequate alignment between philosophy of education and industry benchmarks undermines human capital sustainability, limiting STPM students' readiness for advanced animation studies.

Conclusion

Several systemic barriers and potential reforms. The identified obstacles, curricular misalignment, unequal access to technology, and insufficient industry collaboration, collectively hinder students' progression into animation programs. These issues are compounded by the lack of a cohesive educational framework that integrates visual arts with digital animation skills.

To address these challenges, the integration of digital animation modules into the existing curriculum is proposed. This approach aims to bridge the identified curricular gaps and provide students with the necessary technical competencies. Additionally, the adoption of a dual pathway system, inspired by successful models in China, the UK, Korea, and Japan, could facilitate smoother transitions from secondary education to higher education in animation. Such a system would offer flexible entry points and continuous learning opportunities, aligning with the diverse needs and aspirations of students.

Implementing these reforms has broader implications for Malaysia's creative economy. By enhancing the employability of graduates through targeted educational pathways and industry partnerships, the country can cultivate a skilled workforce adept in animation and digital media. This strategic alignment not only addresses current educational disparities but also positions Malaysia as a competitive player in the global creative industry.

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