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Evolving the conventional curriculum: innovative learning interventions to enhance learning competencies

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Abstract | Singapore, having received the status of a “Creative City of Design” by UNESCO, has identified creativity as a key strategy for social and cultural development. Traditional perceptions of Singapore as a conservative island nation are changing, as industry sectors embrace design-led processes of planning and implementation to produce and facilitate new innovations in cultural production. This paper discusses the importance of design education to adapt to the changing environment and equip students with more holistic approaches to design. The research considers the growing impact of design citizenry through community engagement and the underlying philosophies supporting the design of future markets, against the rapidly changing context of Singapore. This study presents a 3-week long, immersive workshop for final year design research students. Through documentation of the workshop delivery and reflective journals of students, the piloting of a “Markets” track of research is analysed and discussed to define the ability of future designers to influence cultures of change through new approaches to address the macro and microeconomic shifts framing design practice. This paper examines how the potential of design impact can be measured, evaluated and scaled through flexible curriculum design in design education.

**KEYWORDS | DESIGN EDUCATION, DESIGN PEDAGOGY, CURRICULUM DESIGN,
INNOVATIVE LEARNING**

1. Introduction

Digital disruption is not only changing the landscape of businesses and the workforce but pushing learning and teaching approaches to re-evaluate how educators motivate new modes of learning in a digital world. This confronts design education with challenges to restructure and redefine the role of future designers to establish deeper understandings of customer experience and more meaningful engagements with communities to support design impact. One key area facing significant change is the space of markets. As citizens contribute to new sharing and circular modes of production, dissemination and use, traditional notions of the market are being replaced with new conceptions and ideas of social, economic and sustainable design practice.

In tertiary education, educators are working towards preparing learners with emerging 21st-century competencies. Singapore's Ministry of Education produced a framework that lists Global Awareness, Cross-Cultural Skills, and Critical and Inventive Thinking as competencies that will enable youth to find new opportunities within the digital age (Ministry of Education). Against the design education landscape, there is a push towards infusing a wider appreciation of design in curricula within the institutes of higher learning to meet changing job scopes and rising demands for design skills (Ang, 2019).

This paper provides an overview of the higher education landscape of Singapore and presents a bottom-up curriculum design that addresses the alignment of pedagogical approaches that respond to the needs of the environment. The testing of a pilot study is presented, discussed and analysed to propose a mapping of curriculum design that considers agility and flexibility for learning and teaching. This paper concludes with the identification of design literacies that equip students with broader competencies while enabling programmes to continually evolve and adjust to the changing needs of the macro-environment.

2. Preparing 21st-Century Leaders and Change-Makers

The 2025 design masterplan vision for Singapore sets out to develop a thriving, innovation-driven economy that is strengthened by design through higher education strategies and design-led, creative thinking skills (Design Singapore Council, 2019). While these plans will contribute to the growth of the economy, knowledge building activities and exposure to design disciplines is crucial. Design-led thinking within interdisciplinary environments, where collaboration occurs, would allow students to integrate and transfer knowledge across various design disciplines and methods to operate in non-design contexts.

Design should establish itself as a discipline that engages through experience-making, builds with business strategies, and integrates user experience. However, the term “*design*” has taken on a new meaning with less emphasis on how things look and more on how things should work (Ang, 2019). As disciplines like engineering, business and media begin to provide more opportunities for those with design-led skills, the value of design produces significance through ways of thinking, processing, and innovating ideas for effective solutions. Across the disciplines, collaborations involving designers are increasingly in demand as government bodies, NGOs and local communities enlist designers to develop creative strategies. This further emphasises the need for design education to adapt and embrace the changing demands of the market.

The design curriculum needs to evolve and develop changes that meet the expectations of students, which are demonstrated by the 21st Century competencies of adaptive learning, critical thinking and digital experience. According to Ang (2020), education systems need to acknowledge the impact of digital influence and equip students with skills and values to navigate the digital world. This enables them to not only take part in a technologically connected world but build resilience against the uncertain and unpredictable future of the job market. It is important for design education to acknowledge the convergence between social media and lifelong learning skills, which act as a conduit for new cultures of learning and knowledge production.

Papanek (1985) stated that designers should “design for people’s needs rather than their wants” (p. 219), reinforcing the responsibility of designers in influencing markets and assuming agency over all activities in the creation of meaningful experiences. Design develops significance when its research and solutions extend beyond singular issues and consider the systemic complexities where design skills produce value through innovative solutions. This signifies the demand for design education to address human-centric perspectives to frame the interrelatedness and interdisciplinary nature of design problems, developing transferable skills through critical thinking, idea scaling and evaluation, and systemic approaches to design.

3. Case-Study: Immersive Workshop

Digital transformation influences various industries through changes in how businesses function, create, and thrive against competition. These changes affect students and the culture of research, evidenced through growing interests in topical issues concerning social media, social responsibility, and the geography of design. In order to address the broad knowledge needed to facilitate the expanding design interests of students in the School of Design Communication at LASALLE College of the Arts, three research pathways were created to support practical applications through the designing of experiences, objects or systems:

- **CULTURE:** focuses on the value of design research through the perspectives of sociology and cultural anthropology.
- **MARKETS:** emphasises the relationship between consumers and economies in driving design as an important discipline and profession.
- **TECHNE:** rooted in the study of material culture to link the historical development of graphic art to contemporary studies in visual communication and communication design.

The “Markets” track categorises broad media, marketing, and communication research. As traditional notions of the market are being replaced with new conceptions and ideas of social, economic and sustainable design practice, there is a growing need to create more effective social services through inclusive design methods to innovate and respond to external challenges. To introduce the research track to final year Design Communication students, a 3-week immersive workshop was developed to communicate core research methods, explore the various skill sets informed through research, and produce practical outcomes through a creative design process.

3.1 Piloting of the Workshop

Influenced by macro-level changes, resulting in social and cultural shifts, inform the design activities of the current student population of “Generation Z” who are highly entrepreneurial, innovative, socially aware and undeniably political (Mootee & Smith, 2017: 11). Responding directly to the profiling of this new generation of designers, the immersive workshop challenged students to define how businesses, economies, and design innovation function against the landscape of digital content and marketing, service design, and experience design. The three weeks of the workshop comprised the following:

1. **Introduction to Markets:** Students were challenged to develop curiosity about the world and how design can be applied through creativity, problem-solving, social processes, and learning experiences. Acknowledging the marketplace as a system of institutions, within which procedures are developed in the exchange of goods and services between people and organisations, broad definitions of markets were explored in relation to how culture links economies to politics and governing policies.
2. **The Digital World:** Introduced key concepts such as the function of social media, role of digital marketing and digital objects, and utilising artificial intelligence and technology in the creative industries. This session focused on aligning student research to an awareness for building tools of production.
3. **The World of Experiences:** Presented how to create meaningful experiences for people through user experience and interface design, service design, and human-centred design. The definition of experience was broadly discussed with a focus on

users to engage in the creative processes of design improvements, innovations and speculations for daily life.

The immersive workshop was documented through a reflective journal that recorded the activities involved in producing outcomes throughout the creative process. Although critiques and peer evaluations engage learners with new abilities to assess and formulate critical feedback (Davis, 2017), the reflective journal allows for self-assessment to inform individual research and practice. Table 1 presents the timeline of activities and methods of learning. These insights were summarised from the reflective journals of students, leading to the identification of effective teaching tools, methods and approaches.

Table 1. Insights on Workshop Delivery

REFLECTIVE JOURNAL INSIGHTS		
Timeline (Stages)	Methods of Learning	Approaches toward Change
WORKSHOP 1 Introduction to Markets <i>Design Road Mapping</i> - Design research methods - In-class assignment	Designerly way of Knowing: The designerly way of knowing is not only embodied in the process of designing but, equally, the products of design carry knowledge. (Cross, 2007) Triangulation: Triangulation is the means by which an alternate perspective is used to validate, challenge or extend existing findings. (Turner and Turner, 2009)	<ul style="list-style-type: none">• Moving away from the comfort zone• Realisation of what needs to be done to speed up work progress• Other topical discussions of concepts indirectly affecting or impacting economy, business and innovation developments

<p>WORKSHOP 2</p> <p>The Digital World</p> <p><i>Content Generation</i></p> <p>- Content planning method</p> <p>- Group critique</p>	<p>Critical Thinking:</p> <p>The three main stages of critical thinking for designers: Observe, Question, and Answer. (Elmansy, 2017)</p> <p>Feedforward:</p> <p>Feedforward consists of providing future-oriented options or solutions. It asks, ‘What further improvements need to be made to advance my progress?’ (Hattie & Timperley, 2007)</p>	<ul style="list-style-type: none">• The event of realisation is a creative leap - creativity as the occurrence of a significant event in the design process. (Dorst & Cross, 2001)• Students indicated how a sudden insight, which most recognised as a learning event, was significant to the process.
<p>Workshop 3</p> <p>The World of Experiences</p> <p><i>Digital Design Experience</i></p> <p>- User experience</p> <p>- Group critique</p>	<p>Small-Group Critiques:</p> <p>“...under this strategy, students talk about work in greater depth and are more critical than in the public settings of a full class critique.” (Davis 2017: 136)</p>	<ul style="list-style-type: none">• Building different perspectives of design responsibilities and how that might engage design through communication.• Heller notes what the late Milton Glaser expressed, “The key is to ask questions, for the answers will result in responsible decisions. Without responsibility, talent is too easily wasted on waste” (Vienne and Heller, 2003), as why designers must produce honest design that acknowledges the truth rather than manipulates intended audiences with false impressions.

3.2 Holistic Approaches to Teaching

Curriculum design requires an understanding of the needs and expectations of learning within a given cohort. This requires teaching activities that develop opportunities through empathy to produce dialogue, as the “ability to empathise changes not only how we see and respond to people but also how they respond to and see us...” (Jiwa, 2017: 93). Empathy, in design, is a quality with which practitioners can access the needs, wants and values of users. In that same sense, educators should adopt holistic perspectives through empathy to identify the intellectual, emotional, social and creative potential of students.

This directly influences the research topics and themes of student research, which consider the role of design in changing cultures of production and consumption through growing awareness of designing for social awareness and sustainable practice.

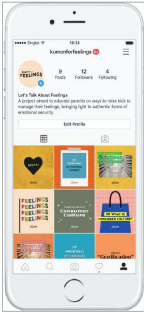
Table 2. Selected Outcomes

SELECTED OUTCOMES OF THE “MARKETS” RESEARCH TRACK		
Student Name	Designed outcome:	Synopsis of work
Janice Yap	<div><div><div><div>Context</div><div>Fast fashion</div></div><div>→</div><div><div>Phenomenon</div><div>Disposable culture</div></div></div><div>↑</div><div>Increasing awareness, demand, and needs for sustainability</div><div>↑</div><div><div>Green marketing trend</div><div>Fast fashion brands tries to 'brand' themselves as sustainable</div></div><div>↑</div><div>There is still a lack of sustainable consumption – Why?</div><div>↑</div><div><div>Gap of study</div><div>Inconsistency of green awareness & purchasing behaviour</div></div><div>↑</div><div><div>Framework of study</div><div><div><div><div>Theory of Planned Behaviour (TPB)</div><div>The Theory of Planned Behaviour (TPB) is an important social cognitive model for analyzing the volitional behaviour of the consumers. TPB was used theoretically in terms of analyzing the consumers' pre-environmental behaviour, helping behaviour and sustainable consumption behavior in general.</div></div><div><div>Attitude</div><div>Subjective Norms</div><div>Perceived Behavioural Control</div></div></div></div><div>↑</div><div><div>Purchase Intention</div><div><div><div>Attitude</div><div>In psychology, attitude is a psychological assessment, a mental and emotional entity that chains in or characterizes a person. They are complex and are an acquired value through experiences.</div></div><div><div>Subjective Norms</div><div>Subjective norms refer to the belief that an important person or group of people will approve and support a particular behaviour, determined by the perceived social pressure from others for an individual to behave in a certain manner and their motivation to comply with those people's views.</div></div><div><div>Perceived Behavioural Control</div><div>Perceived behavioural control refers to people's perceptions of their ability to perform a given behaviour.</div></div></div></div></div></div> <div>A3 poster</div>	<p>A3 Poster:</p> <p>The study of Singaporean fashion consumers' green awareness and purchasing behaviour - utilising the theory of planned behaviour to study the inconsistencies between the perception of sustainable fast fashion and purchasing behaviour.</p>

Aretha
Cheong

THE FINAL
OUTCOME

What it is about:
A page called Kumonforfeelings, created to raise awareness to authentic forms of emotional security, targeted towards parents to first educate them of the dangers of consumerism in children, followed by raising the awareness of emotional stability and security, what it is and how can it be carried out to support their kids emotionally in the best way possible to reduce the risk of relying on consumer culture.



IG Page



Post 4: Background History
Explaining the term
"feelings" which is what
consumerism revolves on



Post 5: Product Education
Explaining the "product" of
emotional security which is
in this context



Post 6: Product Education
Explaining the "product"
of consumerism which is
Feelings in this context



Post 7: Product Education
Explaining the terms of
consumerism



Post 8: Background History
More on Consumer culture




Post 9: Background History
Explaining Consumer culture

Social Media - Instagram
Page:

The Culture of Erroneous
Identity: A study on
consumer culture and its
impact on the
psychological development
of self in Singaporean
children aged 6-1.4

The Instagram page,
"Kumonforfeelings" was
created to raise awareness
on authentic forms of
emotional security.
Primarily targeted towards
parents to educate them
on the dangers of
consumerism in children,
followed by raising the
awareness of emotional
stability and security, and
how it can be carried out to
best support their kids
emotionally to reduce the
risk of relying on consumer
culture.

Joshua Yeo	<div></div> <p>Editorial Design</p>	<p>A3 Publication:</p> <p>A study of ‘greenwashing’ in Corporate Social Responsibility (CSR) and how Food and Beverage brands can engage the Singaporean Cosmopolitan Millennial Consumer by addressing the ageing workforce through brand messaging. The publication features a study of the current forms of CSR in the different industries through a visual study to properly understand the trend of old forms of CSR as a trend.</p>
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Design education trains future designers to develop cultural and social sensitivity and responsibility. The resulting outcomes of the 3-week immersive workshop demonstrate the key issues, research themes and design articulations are presented in Table 2. Each of the 3 projects presented above demonstrates a clear application of the immersive workshop by questioning the current market practices, speculating towards design-led futures, and proposing feasible strategies by translating theory through research. The projects present evidence of students developing the ability to tackle large and complex systemic issues through design-led research and creative practice.

4. A Mapping of Future Research in Design Communication

Effective education requires the cultivation of enthusiastic learning, which considers students experience by providing a diverse curriculum that supports methods of teaching and assessment to motivate learning (Robinson, 2016: 231). The key characteristics of a design communicator comprise awareness and the ability to rethink societal changes and developments. Brock & Hundley (2016: 147) state that the learning process is dynamic and should value mistakes and setbacks to cultivate growth and development. As designers are

positioned against complex and problematic situations, intuitive and reflective practices are instrumental to dealing with uncertainties (Schon, 1983).

The piloting of the research tracks provided key insights into the types of topics and research areas that interest current students, indicating the trends for future research tracks and pillars to consider as sources of knowledge production. Markets, as a research area containing relationships between producers and consumers, frames all design activities as it considers the roles of culture and society in the creation of design outcomes. The key terms, insights, themes and concepts from the 3-week immersive workshop were compiled and reorganised to produce a mapping of future areas for student research in the field of Design Communication.

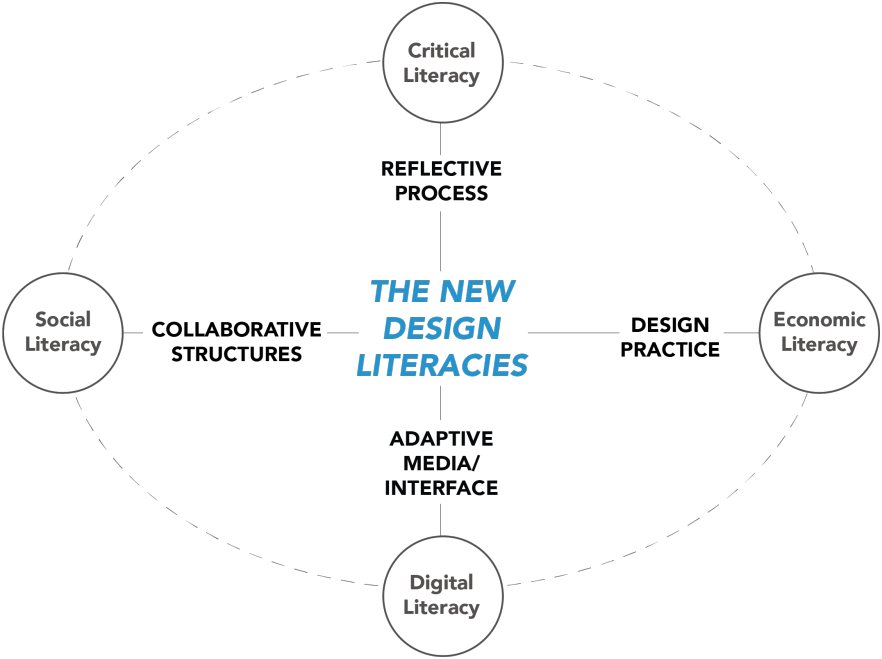


Figure 1. Design Literacies through Flexible Curriculum Design

The mapping of design literacies in Figure 1 outlines how the piloting of the immersive workshop, within the research stream of “Markets”, has led to the identification of 4 new literacies for students in the School of Design Communication. The 3 stages of the workshop were developed in direct response to the macro-level changes to the industries requiring specific design skills and activities were organised to expose students to experience through media, development through critical processes, knowledge production through collaborations, and tangible outcomes through design practice.

THE NEW DESIGN LITERACIES		
ACTIVITY	MODE OF DELIVERY	LITERACY/COMPETENCY
ADAPTIVE MEDIA & INTERFACE	<i>Experience & integration of communication tools</i>	DIGITAL LITERACY as a key ability for designers to gather, organise and present information through various forms of technology
REFLECTIVE PRACTICE	<i>Design development through thinking & writing</i>	CRITICAL LITERACY is necessary for designers to analyse and evaluate the sociocultural dimensions of design
COLLABORATIVE STRUCTURES	<i>Group critiques & design evaluation</i>	SOCIAL LITERACY is the ability of designers to translate social interactions into processes of knowledge exchange
DESIGN PRACTICE	<i>Translation of research into practical outcomes</i>	ECONOMIC LITERACY defines the role and function of designers and design activities to produce value

Figure 3. Identification of Design Literacies

As the systems of the world become increasingly complex, it is important for design education to identify clear competencies and skills for future designers to produce impact through the design practice. Digital literacy enables designers to navigate through rapid changes in technology, media channels and interfaces to generate new forms and methods of communication design. Critical literacy positions designers against the broader dimensions of social, cultural, political, ecological and economical changes in the external world, requiring designers to adopt critical perspectives that inform all future actions. Social literacy acknowledges the privileged position of designers to effect impactful change through collaboration, generating robust knowledge through the levels of social interaction and exchange. Economic literacy, within the context of “Markets”, challenges designers to measure, scale and evaluate how design outcomes and skills can produce new currency and value.

Table 3 presents how the workshop has produced a pedagogical framework that informs new literacies and future areas for design research within the programme. Through the introduction of an immersive workshop, students were exposed to new ways of thinking and learning to effectively produce design outcomes addressing the challenges and complexities of the macroenvironment. Equipping students with new design literacies prepares them with a more comprehensive knowledge base that can be transferred across different disciplines, contexts and applications.

5. Conclusion

The piloting of a 3-week immersive workshop demonstrated that cultivating research as part of design education relies on flexible and adaptable approaches to develop an inclusive curriculum. Teaching activities need to present direct connections between key theories and design methodologies for effective student learning experiences. As design competencies continue to evolve and develop, design education needs to quickly adapt to the changing needs of the institutions, industries and markets governing design practice. This paper has demonstrated that developing design literacy, through practical applications, produces new transferrable skills that engage students in the forms of self-directed learning, active engagement, planning and critical awareness for utilising and transforming design towards new innovations.

Design literacies change and evolve in relation to the shifting forces of the environment, requiring design education to develop agility and quickly respond through pedagogical interventions. The case-study discussed in this paper provides an example of how curricular activities and programme structures can integrate different approaches to foster more dynamic studio culture through learning. This enables the design curriculum to maintain relevance and resilience to inform future research areas and contribute to the knowledge base of design.

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