



Knowledge Economy Market Development Mapping Study: Understanding the value of design education programs in the knowledge economy

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Image from *Living City Workshop Program* 2013

mapping study

Commissioned by Queensland Government in 2012 in response to *Design Strategy 2020* policy focus to “build design knowledge & learning”

(Arts Queensland, 2009)

Identifies scope & value of design education/research programs from primary school to professional design sector in Queensland, Australia

Recommends future development & research opportunities

(Wright, Davis & Bucolo, 2013a)



The Knowledge
Economy Market
Development
Mapping Study

Wright, Davis & Bucolo | © 2013 |

mapping study

A close-up photograph of a person's hand holding a white marker, drawing a diagram on a white surface. The person is wearing a dark school uniform with a crest that includes the letters 'K' and 'STAT COLLE'. The diagram consists of green lines forming a rectangular structure with internal divisions, and purple text labels including 'Box', 'paper', and '2'. The background is slightly blurred, showing other people in similar uniforms.

Willingness to capture evidence of growing public engagement in, and valuing of curriculum independent design education programs since the inception of the *Queensland Design Strategy 2020*

Image from *Designing Futures* Program 2011

(Wright, Davis & Bucolo, 2013a)

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- The Knowledge Economy Market Development Mapping Study**
- Center for Global Development
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mapping study

Conference paper:

(Wright, Davis & Bucolo, 2013b)

Paper presented to DRS//Cumulus 2nd
International Conference for Design Education
Researchers, *Design Learning for Tomorrow -
Design Education from Kindergarten to PhD*, Oslo,
Norway, 14-17 May.

Available from:



educational shift

In last 20 yrs societies have transitioned away from labour intensive 'smoke stack' industries towards a **knowledge intensive & creative organisational focus**.

For a “networked economy” (Selzer & Bentley, 1999) **education needs to focus on the connections between schools and society**, the challenges of adulthood, and exposure to a wide range of contexts, role models & experiences of genuine responsibility (Bentley, 1998)

Education in the Knowledge Economy –
Preparing a flexible, networked & multi-skilled workforce

educational shift

A new “landscape of learning” (Bentley, 1998)

Understands business climate

Extends beyond the classroom

Promotes active citizenship

Develops employability

Tackles underachievement & social exclusion

“participatory” culture (Jenkins, 2006) learning through networked collectives

(Thomas & Brown, 2011)

Education in the Knowledge Economy –

Focus on innovation, creativity, critical thinking, problem solving, communication and collaboration (Partnership for 21st Century Skills, 2009)

Design is a form of knowledge-based capital that can be used to drive innovation and growth (OECD, 2012a)

international initiatives

Design skillsets provide extra visual language, framework for critical/creative thinking & develop optimism, motivation & agency (Design Commission, 2011)

Despite history of design education in schools, **lack of research assessing impact of design** on national innovation/education system (McGimpsey, 2011; Miller, 2011)

Finland is ranked as one of the top-performing countries in terms of the quality of its educational system (OECD, 2012b) & has improved global competitiveness



international initiatives

United States is also viewed as a world leader in interdisciplinary design education initiatives in primary/secondary schools

Singapore, South Korea & Hong Kong re-examining design education at all levels. Singapore children exposed to design in primary/secondary school

Comparatively **Australia's activities are limited.**

World Bank KEI – Australia ranked second for education, 19 for innovation behind it Asia Pacific neighbours (The World Bank, 2012)

national initiatives

Australia in the Asian Century White Paper acknowledges Australia's innovation capabilities

“using creativity and design-based thinking to solve complex problems is a distinctive Australian strength that can help meet the emerging challenges of this century”

(Commonwealth of Australia, 2012:8)



national initiatives

Australian National Cultural Policy
recognises contribution of design to
cultural & economic sectors

“If Australia is to position itself for the future, and be a beacon in the region & the world, there is a need to encourage activities that foster the cultural economy & build social and economic capital using creativity to generate new skills and jobs.” (Commonwealth of Australia 2013:9)

Design not included as discipline in
Australian National Curriculum



national initiatives

Queensland Design Strategy 2020
whole of government framework
(Arts Queensland, 2009)

Strengthen the Queensland economy
Foster a design culture
Build design knowledge and learning
Support public-sector innovation

Queensland Design Council
“The role of design thinking & practice
in education is critical” to development,
productivity, culture and quality of life.
(Queensland Design Council, 2011)



study background

- Building on *National Cultural Policy Discussion Paper Response* (2011)
- Initial phase to build momentum for **future academic research**
- Visualise/assess current activity, **advocate & strategise**
- Encourage other states to contribute academic support literature towards policy reform
- Inform the Arts & Cultural Investment Framework 2013-2014



study background

- Literature review of national & international design education programs
- Online Survey
- Focus groups & in-depth interviews

Image from *Grey Street 2020* - goDesign Express Workshop Program 2012

findings



Image from *goDesign Travelling Workshop Program 2010*

findings

The education landscape

- 1,239 state schools service population of 4, 585 776 (Queensland Government Treasury & Trade, 2012)
- 616 are rural/remote - Queensland has higher proportion of small regional primary schools (Queensland Government, 2010; McCollow, 2012)

Unique challenges to develop programs that can be shared/disseminated across schools/regions

Smart Classrooms (Queensland Government, 2012)

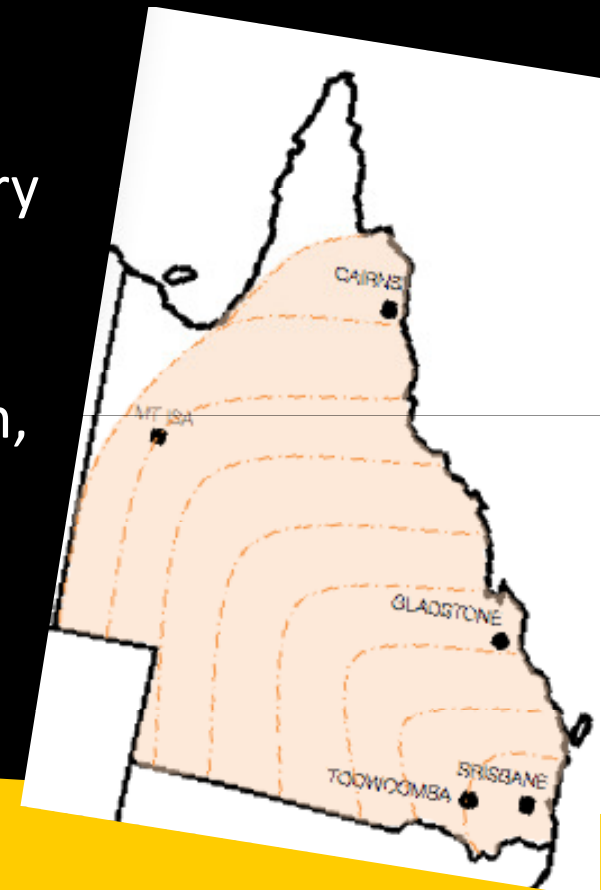
Design Minds (State Library of Queensland 2012)

findings

The education landscape

- 494 registered secondary schools (ABS, 2011)
- Of state schools, 15% secondary/74% primary – concern for knowledge economy
- Teachers operate within strict teaching frameworks of NAPLAN, National Curriculum, C2C & Queensland Professional Standards
- Qld Studies Authority (QSA) provides K-12 syllabuses

Limited design exists in Graphics, Visual Arts & Industrial Technology & Design
Teachers taking own initiatives in design



findings

The education landscape

- 9 universities – 8 (27 of 32 Campuses) offer design education across variety of levels; 2 offer distance education programs
- majority of regional UG programs - digital media/multimedia, games & graphic design
- International higher education largest export industry in Brisbane - 55,000 students
Important offerings remain relevant to international markets (Study Brisbane, 2012).
- TAFEs & private colleges largely deliver programs in South East Queensland

findings

The education landscape

54 school/university curriculum independent programs (14 regional) conducted with industry, tertiary & government engagement

- strong secondary programs, more work to capture evidence of activity in primary sector
- more activity required in regional areas
- proactive peak bodies providing professional development programs

findings

Impacts of design education

Students

- New understandings of place, self & community
- Different way of seeing and being in the world
- Empowerment & motivation to be active, productive, confident & inclusive citizens
- Engaged curiosity towards lifelong learning
- Extra visual language for communication & collaboration
- Inspired career pathways & pursuit of tertiary qualifications

findings



Image from *Second Skin* Workshop Program 2012

findings

Impacts of design education

Educators, business & professional designers

- Professional development opportunities – inspiration & reinvigoration for practice
- Enquiry-based learning, teamwork in the classroom
- Purposeful community partnerships
- Rewriting of school wide curriculum/pedagogy
- Strengthening of communities through youth engagement & research positioning Qld globally
- Changed business strategy

findings



Image from *Learning By Design Teachers Workshop Program 2010*

findings

design education and research activity

- Most programs focus on 'process 'of design to empower & problem solve
- Passion & commitment exists for DE program participants
- Value and enjoyment for students emphasised, however 55% somewhat agree students understand value
- Funding & systemic government support are clear challenges
- “General misunderstanding of importance/value of design in education in rural areas” (Survey respondent P31)
- Resources, workload, teaching ratios, volunteer involvement, teacher uptake & National Curriculum points of concern
- Broad social, economic, community impact (94% strongly/somewhat agreed)

findings

perceptions about design in the knowledge economy

- Design education needs to urgently **address systemic environmental challenges**
- DE provides opportunity to **challenge current educational models** beyond 'wrote' learning
- Design needs to be **intrinsic and cross-disciplinary**
- **Design leadership** flagged as an emerging discipline
- Demonstrating **economic value of design** key challenge
- Use of the **word 'design' & language** describing design key challenge

findings

Planning for the future

- Reliance on government, but political terms limit capacity to implement & **retain long term design & education policy**
- Initiatives independent of government as primary funder required
- Requirement for **evidence-based research** communicating value of design towards national innovation
- Improved **industry/tertiary sector engagement** required
- Education & technology central to **new growth industries**

findings

Education and Curriculum Development

- Curriculum key driver of change in thinking especially in regional areas
- Academics need to develop curriculum with industry/community
- Autonomy for primary/secondary teachers to innovate curriculum within education structures
- School curriculum authorities need to engage with professional designers/industry

findings

Tertiary Sector Development

- Defining contribution of design education in the higher education sector & accounting for graduates key challenge
- Need to graduate better designers but also educate for future practice
- Tangible research for design practitioners required
- Reliance on tertiary sector for design program development, implementation & facilitation

THE TOWN Circle recommendations

DESIGN BRIEF

To design and create a community based space which allows elderly people to be integrated and connected. To create a place where they can share their knowledge, wisdom and skills. To create a place that promotes health and changes peoples thinking about the elderly.

- INTERCONNECTED
- SHARING AND SKILLS
- LEARNING
- SUSTAINABILITY
- WISDOM
- COMMUNITY
- RESOURCES
- OPPORTUNITY

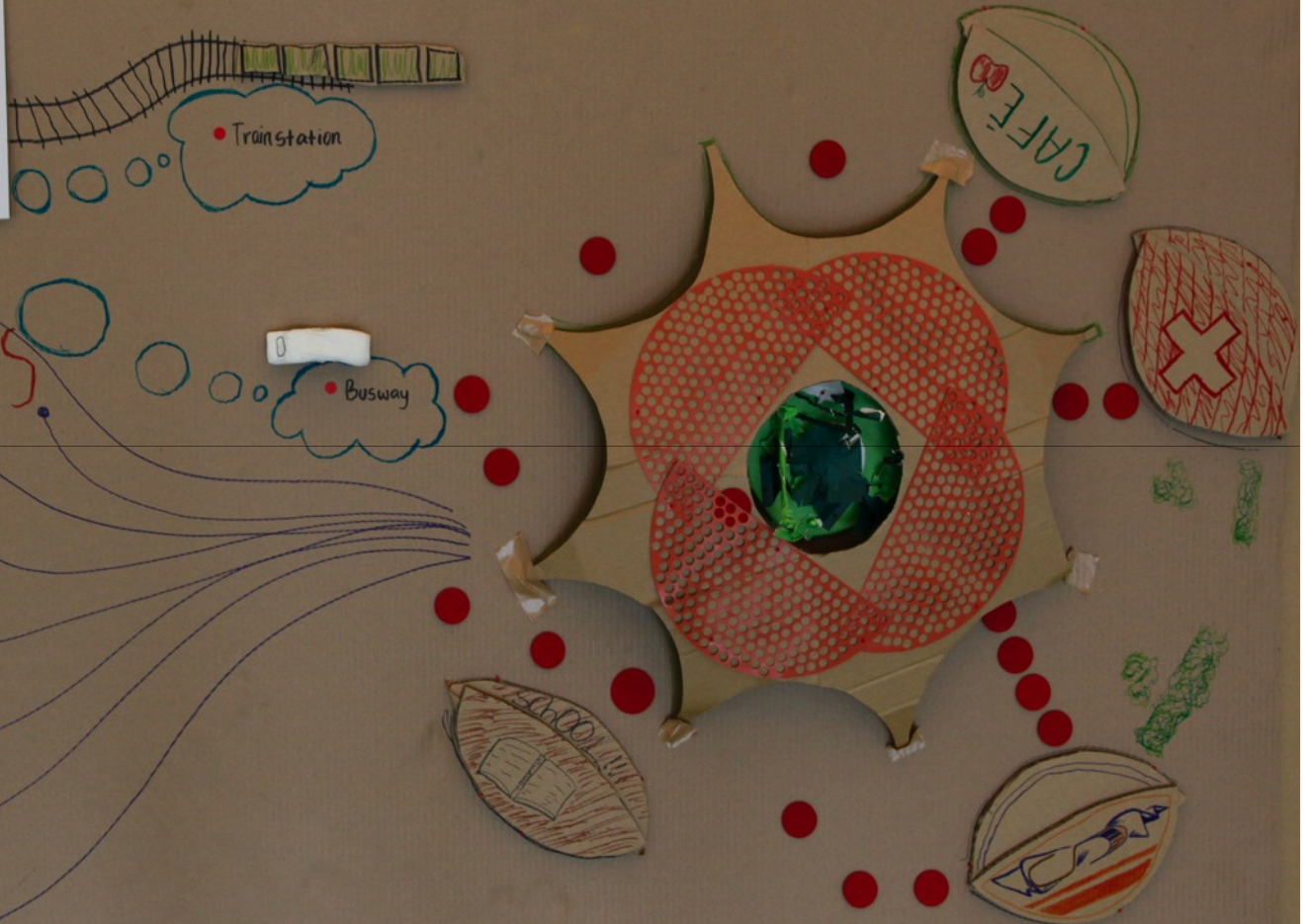


Image from *Unlimited: Generation Workshop Program 2010*

recommendations

value of design education/research in the knowledge economy

upskilling and training educators

learning beyond the classroom & challenging curriculum

responsibility and accountability

measuring impact and disseminating knowledge

recommendations

value of design education/research in the knowledge economy

- design thinking to **infuse all sectors of government**
 - strategically align design to address emerging local challenges through **formation of creative alliances** building on triple helix mode of innovation
 - ongoing government **investment in DE programs** to communicate value & mobilise community
 - ongoing development & support for **regional programs**
 - design must be conceived of as interdisciplinary & even meta-disciplinary & **embedded in all levels of education**
- (Cope and Kalantzis, 2010)

recommendations

upskilling and training educators

- educators to shift from “content delivery to capacity building, from supplying curriculum to co-creating “
- students to shift attention from individual performance to learning through networks (McWilliam & Haukka, 2008)
- omission of design from National Curriculum requires professional development programs in design pedagogy
- changes to tertiary pedagogies for primary/secondary teacher training need to include design
- new models of engagement between education sectors & between disciplines of business/education/creative industries, led by tertiary sector

recommendations

learning beyond the classroom & challenging curriculum

- new **open learning model** of coordinated networks needs to be constructed for innovation, through **action research**
- ongoing support for **design immersion & design competitions** to fill gap in curriculum & articulate pathways
- greater collaboration between Queensland Studies Authority & professional designers/educators to **update curriculum to integrate design frameworks**
- engagement with tertiary sector to develop **research collection strategy**

recommendations

responsibility and accountability

- Investigate **new funding models** to mobilise local involvement, collaboration & promotion
- **Creative Education Trust** utilising financial legacy from mining boom in regional hubs to tackle socioeconomic divide & geographical diversity
- **Foundation** to engage schools, universities, govt, business & design sectors to explore partnerships & Asia Pacific issues
- Universities must embrace interdisciplinary learning & consider **new programs in 'design leadership'**
- **Design Education & Research Taskforce** reporting to Govt

recommendations

Measuring impact and disseminating knowledge

- **local funding & infrastructure** to be developed to allow ongoing prototyping and research, towards policy reform
- research on **impact of design education in regional areas** to build innovative, adaptive & resilient communities required
- maintain dialogue between tertiary sector & government to provide **future strategic plan for academic design education research**

summary



Image from Design Minds Teacher Professional Development Program 2011

summary

- Need to better **integrate design across all levels of education** to build creative capacity
- Need greater **understanding of the role of designers** in the new economy
- **Upskilling & professional development of educators** about processes of design & engagement for learning
- **Tertiary sector will play important role** in nurturing creative, innovative & adaptive culture fostering design education/research
- Urgent need to **gather state-centric evidence** of impact of design and role within the knowledge economy

The viability of programs over the long term depends on mutual interest, ongoing systemic support and funding by appropriate funding groups. The outcomes are usually of great educational benefit to individuals, help build social capital and are of great potential benefit to the economic and strategic futures of the wider community. Investment in innovative teaching and learning at secondary level will be critical in the development of a skilled, flexible and critically aware community. (Survey Respondent P20)



Image from *Living City Workshop Program 2010*

next steps

- PhD Research – Developing a framework for design integration across secondary education, *goDesign* regional case study
- Ongoing research collaboration with *Design Minds* measuring **impact of digital platform** for design education
- Research measuring **value Qld tertiary design education** to graduates & industry eg. *Designing our Future* Report (State of Victoria, 2009)
- Formation of **Metadesign Educators Network** (sec./tert. sector)
- Investigation of **design's role in higher education** for developing generic capabilities

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feedback welcome

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Image from *Unlimited: Learning by Design* Program 2010