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e-learning environments: Generation C – the missing link

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Abstract:

Consideration of the creative industries as a cohesive sector is a relatively recent and contentious construct. The newly coined label “Generation C” is used as a lens to frame relevant literature that describes knowledge workers who use information and communication technologies (ICT) to create and share content. To support learners in becoming effective creative industries practitioners, a reconsideration of learning designs is proposed that leverages Generation C learners’ natural communication practices and digital skill sets. Curriculum projects from the Creative Industries Faculty (CIF) at Queensland University of Technology (QUT) are presented as illustrations of approaches being employed. Challenges for academic managers include understanding the potential shift and strategically supporting new learning designs.

Introduction

A fundamental role for higher education institutions is to provide effective learning environments that produce graduates who will be successful in their chosen profession. In order to design such environments it is important to identify and articulate the capabilities of graduates being sought in the economy and the likely capacities of those seeking to undertake studies in the related disciplines. This paper considers creative industries graduate capabilities and learners’ capacities by drawing upon the literature associated with the creative industries and recent writings about Generation C and Pinsky’s digital immigrants (2001ab). Appropriately constructing e-learning environments that are sympathetic to learners also require purposeful learning designs and new skills for staff to realise learners’ potential. The Creative Industries Faculty (CIF) at Queensland University of Technology (QUT) is developing e-learning environments to engage learners in building their capabilities for the creative industries. In this paper curriculum projects from the CIF are presented as illustrations of approaches being employed. Starting points for designing creative industries courses include specifying the sector and describing the characteristics of participants and the likely student cohort so that appropriate learning designs can be created.

Creative Industries – an overview

Creative industries is considered one of the highest growth sectors in the new global economy (Howkins 2001). The UK Blair government is usually credited with initiating interest in the creative industries in 1998 when they recognized the considerable contribution these industries make to the economy with the potential to further drive growth if they are appropriately recognized and

nurtured. Refer to Gibson et al. (2002) for an Australian perspective of the potential economic impact. Definitions of creative industries are not universally agreed, but tend to include ...

... those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property. This includes advertising, architecture, the art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software, music, the performing arts, publishing, software and computer games, television and radio. http://www.culture.gov.uk/creative_industries/default.htm

Hartley (2005, pp. 5-6) suggests that creative industries has emerged historically and evolved from the **creative** arts and cultural **industries** and therefore ... “the idea varies geographically, depending on local heritage and circumstance”. It is worth noting that there remains considerable debate about the term and implications for the arts community (Cunningham, 2004).

The creative industries concept, greatly facilitated by writers such as Richard Florida (2002), Charles Leadbetter (1999), Kate Oakely (2004), John Hartley (2005), and Stuart Cunningham (2002; 2004), has caught the imaginations of national, provincial and local governments with the promise of economic growth and social cohesion. Certainly from a university perspective creative industries has reinvigorated interest in the arts sector in terms of student demand (largely because creativity appeals to students while industry appeals to parents) and potentially lucrative research agendas (alignment with government policy drivers) (Cunningham, 2004).

Florida (2002) describes two main subgroups of the creative class – the core creative class and the creative professionals. The *core creative class* are those knowledge workers that generate new content in the form of intellectual property.

Creative professionals are those knowledge workers that provide the soft infrastructure for the creative industries to be sustained and grow. Both categories are important, often mutually dependent and participants may move between them. Two broad class are commonly described in the literature – for example embedded and specialist workforce (Gibson et al. 2002); and super creative and second tier creative (Cunningham et al., 2005, p.119).

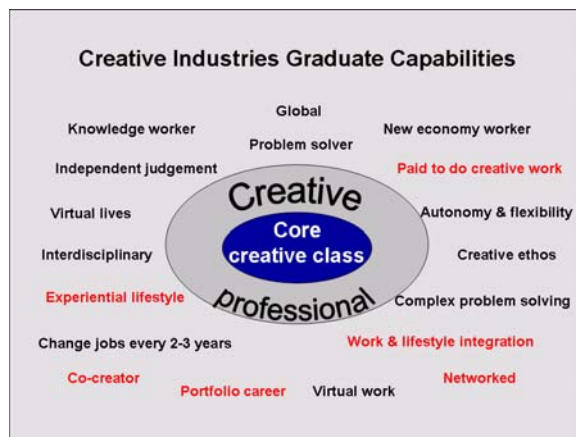


Figure 1 Creative Industries Graduate Capabilities

Leadbetter (1999), Florida (2002) and Cunningham et al. (2005), describe a range of qualities and attributes of knowledge workers within the creative industries. These are represented in Figure 1 and give a sense of the capabilities that higher education institutions providing related courses should seek to produce in their graduates. Although there are identifiable careers for students studying in creative industries disciplines, many more are yet to emerge as a result of globalisation, convergent technologies and government policy. Consequently, interdisciplinary partnerships with other schools (eg. business, law, education and information technology) are essential to provide comprehensive courses that develop the necessary qualities and attributes of graduates, which are beyond those traditionally associated with the arts. Florida (2002) suggests that creative workers are knowledge workers seeking an experiential and integrated lifestyle who are often highly technically literate and have portfolio careers central to the new economy. An emerging term that describes a generational cohort analogous with, if not sympathetic to, the creative industries is the so called Generation C.

Generation C

Trendwatching.com (2005) is largely responsible for the prominent manifestation and profile raising of the term Generation C and links it with Richard Florida's writings. Defining the "C" appears to be a work-in-progress but "content creation" is the basic premise. Reference is also made to other "C" factors such as creativity, casual collapse (demise of traditional beliefs, rituals and formalities), control (a move away from consumption to customization or co-production) and celebrity (capacity to produce and share across multi-format media in a networked society). Importantly, and consistent with Florida and others, the Trendwatching.com (2005) definition of Generation C is not necessarily age dependent and can be applied to all those who are creators of original content. Trendwatching.com (2005) argues that consumer *creative urges* and the ubiquity of cheap and powerful creative digital tools are drivers for Generation C.

Although it is acknowledged that Trendwatcher.com is hardly a definitive academic source, descriptions of Generation C are remarkably consistent with contemporary theorists and academic writings about workers in the new economy and creative industries (for example Leadbetter 1999 - portfolio career, Hartley, 1999 on DIY Culture, Castells, 2000 - the networked society, Landry, 2000 – the creative milieu, Howkins, 2001 – success rules in the new economy, Florida 2002 – the experiential life, Kaprow, 2003 – new media art, Bruns, 2005a,- gatewatching). Kaplan-Leiserson (2005) links Generation C with the open source and creative commons movements which are considered a natural amalgam of skill sets, readily available technologies, peer networks and the creative culture.

the culture of sharing in the programming world evolved naturally and the specific means of ensuring that could continue came along later. This development path in the

software world parallels one that is developing in the world of digital content. That movement incorporates the ideals of open source and combines them with two other concepts: those of the commons and of Generation C (Kaplan-Leiserson, 2005).

Kaplan-Leiserson (2005) associates Generation C trends to more freely share intellectual property through an open source and open content movement with examples such as Wikipedia, the Wikipedia Foundation, Massachusetts Institute of Technology' Open Course Ware project, BBC's Creative Archive, Open Media, the Creative Commons Licence and Linux, Stephen Downes' EduSource. Kaplan-Leiserson argues that ... "the open source, Creative Commons, and Generation C movements are creating a new business model of shared content. But, as in the case of IBM giving away some of its source code and MIT offering up its course materials, it's not all about altruism and sacrifice." Consequently, with considerable prompting from Tendwatching.com, Generation C is increasingly referenced by diverse companies covering manufacture (Sony, Apple, Microsoft, Cadillac), content distributors (Borders) and superannuation (QSuper). A critical characteristic is that Generation C is likely to be involved in product design as co-creators. More recently, Bruns (2005b) has coined the term produsers which can be applied to describe Generation C behaviour to 'Rip. Mix. Burn' to create, co-create and share content by using various Information and Communication Technology (ICT) tools. Bruns argues they are ... "no longer producers or consumers, publishers or audiences, but both at the same time. They are not prosumers, but user-producers: produsers".

The literature discussing Generation C is formative and at best points to groups of characteristics and behaviour indicative of those likely to be associated with the creative industries. Although Marc Prensky's seminal writings about Digital Natives, Digital Immigrants (2001ab) tends to describe an age defined generation (he makes reference to the N (Net) or D (Digital) generation, p. 1), there are similarities with the previous descriptions of Generation C and therefore potentially provides useful indicators. For example, Prensky (2001a) succinctly articulated the different ICT literacies that contemporary higher education students have from previous generations and those charged with facilitating learning – in particular, a considerable amount of the digital native's time is mediated by the digital environment (Internet, mobile phones, games).

Today's students have not just changed incrementally from those of the past, nor simply changed their slang, clothes, body adornments, or styles, as has happened between generations previously. A really big discontinuity has taken place. One might even call it a "singularity" – an event which changes things so fundamentally that there is absolutely no going back. This so-called "singularity" is the arrival and rapid dissemination of digital technology in the last decades of the 20th century (Prensky, 2001a, p. 1).

While there are some formative data (refer Mediacentre, 2004), it is inconclusive whether digital natives can parallel process any better than the so-called immigrants but anyone with a teenager will verify their “twitch speed” (Prensky 200b). That is, the capacity to rapidly engage with a range of media to gather information (multiple web sources) or interact. Communicating through SMS messages, blogs and multiple chat windows while listening to music/watching television, they are ready to switch on a screen saver the moment an alien presence (parent) is detected. Each communication activity can be discrete and involve very different peer groups.

The recent writing about Generation C can be used to elaborate on Prensky’s (2001ab) arguments by acknowledging that digital natives are not only much more capable of accessing and interacting with *legacy*¹ content, they are also confident creators of *future* content which they want to share with others who can in turn modify and shape to new forms of knowledge. Implications for learning designs for such learners are obvious and challenging. Consistent with Generation C, Hartley, (2005) argues that learning design must recognise the student as active creative participants in order for educational institutions to effectively contribute to the creative industries sector, “Instead of seeing students as not quite fully-formed persons, betraying a “lack” or “need” ... learning becomes a creative experience driven by the student herself” (Hartley, 2005, p. 26)

Prensky (2001ab) raised significant challenges for those responsible for facilitating learning for the digital natives. Even though digital natives have the capacity to learn from traditional teacher-centred approaches currently applied in higher education institution, these fail to leverage their preferred communication practices or digital skill sets. Fundamental to Prensky’ propositions are the tremendous motivational advantage and efficiencies which could be gained by creating effective learning environments that exploit *native speakers* preferred digital communication and interactive styles. Prensky (2001b) argued that attention span depends on interactivity – whether through communication with others or provided by a video game (p. 4) – and the capacity to capitalize on this depends on designing learning that is sympathetic to natural dispositions (in this case of the digital native). This is certainly not a radical proposition given the wealth of educational literature on motivating learners (Biggs, 1989; Entwistle, 1987; McKeachie, Pintrich, Lin & Smith, 1986) and engaging learners (Chickering and Gamson, 1987, Pascarella 2001, Umbach & Wawrzynski, 2005). The challenges are significant. Many academic staff are close to retirement age and have a tendency to teach according to their own preferences rather than those of their students (Willems, 2005). It is encouraging that there are projects that seek to proactively identify those reluctant to incorporate e-learning environments into their courses and pilot strategies to encourage them to engage in effective learning designs (eg. Smith, Dillon,

¹ refer Prensky (2001a) for description of legacy and future content

Nalder & Brown 2004; Burnett & Dawson, 2005; Willems, 2005). At the same time, recent evaluations highlight the difficulties and scalability problems associated with fundamentally shifting and disseminating conceptions of learning from projects to mainstream activities (eg. Alexander, 1999; Alexander & McKenzie 1998). On the positive side there is an increasing call for change. Sims (2005) uses terms such as learner emancipation, proactive design (designing so learners can design themselves to maximize learning) and pro-active role modeling. There is an emerging generation of academics who are themselves Generation C/digital natives who recognise the need to rethink approaches to facilitate learning (eg. Bruns 2005; Sade and Polson, 2005). There is also an increasing depth of literature that provide useful points of departure for reconsidering factors that contribute to effective learning designs and environments for Generation C (eg. such as, AUTC, 2002; Herrington & Oliver, 2000; Oliver & Herrington, 2001; Oliver, McLoughlin, & Herrington, 2001).

Current e-learning environment

Most current e-learning environments depend on learning management systems that are little more than digital filing cabinets with communication add ons. Even though such systems have greatly improved access to resources, they have done little to change underlying pedagogy which has barely shifted from that applied last century. Recent work by Willems (2005), indicated the significant gap between the designs of e-learning environments and preferred learning styles of higher education students including over reliance on sequential lesson progression and text-based resources. As reported by Smith and Brown (2005. p. 2), the results of a recent Australian Technology Universities Network survey indicated that a focus on the technological delivery aspects rather than on pedagogical uses of the online environment still predominate, and that pedagogical approaches relate most closely to a view of teaching as one of transmissive information delivery and a view of learning as little more than a need to access information.

Arguments to shift to constructivist and authentic models of learning are not new (see for example, Piaget, 1972; Bruner, 1974; Vygotsky 1978 and Boud 1993). However, for the first time learners have the capabilities as well as access to the tools (Jonassen, 1999; Boud & Prosser, 2002; Brook & Oliver, 2003). Moreover, as proposed by Prensky (2002a) and Kaplan-Leiserson (2005), students can be active participants in the design and development of courses as part of the learning proposes as co-creators of content, particularly through access and contribution to the increasing number of sharable and reusable learning objects (eg. online; ANTA toolboxes; Edusource) and communication and content generation tools such as wikis and blogs.

Recognising the changing and potentially unique nature of the student cohorts being attracted to creative industries, QUT has sought over the past three years to develop e-learning environments sympathetic to learners capacities and learning preferences. The work has been reasonably well

resourced through allocations by the Creative Industry Faculty (initiative and core unit funding), taking strategic advantage of the Teaching and Learning Support Services (TALSS) Teaching Fellowship program and accessing the University’s large teaching and learning grants scheme. Drawing upon this work in an iterative process, Smith and Brown (2005) developed a Learning Design Framework that seeks to facilitate the development of holistic learning-centred environments at the course (program) level that adopt a blended approach rather than be determined solely by online learning tools themselves. The framework illustrated in the Figure 2 is organized around Boud et al (1993) five propositions about student-centred learning as organizing themes, namely: experience is the foundation and the stimulus for all learning; learners actively construct their own experience; learning is a holistic process; learning is socially and culturally constructed and learning is influenced by the social and emotional context in which it occurs.

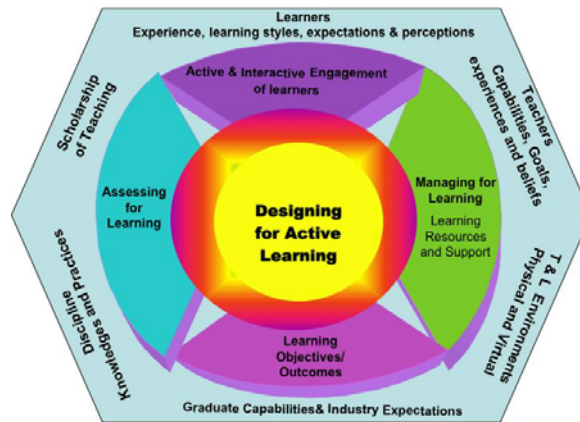


Figure 2: Learning Design Framework (Smith & Brown, 2005)

Principles underlying Smith and Brown’s (2005) framework has recursively guided and been informed by the work undertaken in the Creative Industries Faculty (CIF). It potentially provides a useful model for others to consider as well as guide future work. In partnership with other faculties, large teaching and learning grants in the order of \$450,000 have been directed to work on eportfolios, sharable reusable objects and academic professional development (online teaching and learning). The following section briefly describes some of the outcomes of these grants to date.

An early learning and teaching initiative in CIF was the funding of a curriculum regeneration project that involved academics from the CIF and TALSS. A learning and teaching support team was drawn together to collaborate with the academic teams from several disciplines to consider their curriculum, assessment and pedagogical approaches. Articulating creative industries and discipline-specific graduate capabilities for discipline teams and foundational-level outcomes for the core units was a key focus of activity in the project which evolved from contested discussions about how we distinguish creative industries practitioners and has led to extensive mapping of capabilities across the curriculum. A current QUT Teaching and Learning grant project titled, “Towards critical, collaborative and creative ICT literacies: Integrating innovative on campus and online learning environments” (Daniels, Smith and Bruns, 2005) focuses on integrating and extending online learning and teaching within the context of the QUT Graduate Capabilities

across two faculties (CIF and Humanities and Human Services Faculty). This project builds on established creative industries online learning innovations such as the QUT News website and Brisbane Media Map (Spurgeon & O'Donnell, 2003). The project is based on the recognition that evolving work practices and the proliferation of ICTs mean that generic capabilities for students increasingly include critical, collaborative and creative ICT literacies. Accordingly, it is essential that academic staff share these literacies and are empowered to evaluate, manipulate and integrate a range of technologies into innovative pedagogical practices. ICTs such as wikis and blogs are helping to support the development of student-contributed content in collaborative online environments. Initial curriculum experiences have highlighted that learning opportunities should accommodate the diverse knowledge and experiences students bring to their learning and provide appropriate scaffolding to support both digital natives and those with limited digital experience to navigate and exploit these learning environments

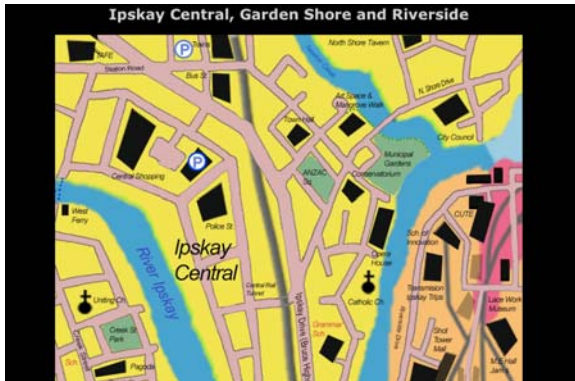
A QUT funded project between the faculties of Creative Industries and Information Technology, titled "First year learning and the assessment of graduate capabilities: Creating environments for engaging students in becoming self-directed and reflective learners" is leading to the development of learning environments that engage first year students toward becoming self-directed and reflective learners (Stewart, Smith & Dunn 2004). Through the redesign of authentic tasks, learning environments and assessment in core units, students are actively engaged in learner-centred experiences that reflect the experiences of creative industries practitioners. A range of online resources and tools are being employed to enhance and scaffold students' learning including the QUT Student ePortfolio, web folios, sharable learning resources around key capabilities such as teamwork, visual design and personal development planning. The redesign of the core unit *Creative Industries* and the associated authentic learning environments such as Creative Town have been aspects of work in this project to date.

Creative Town

The Creative Town initiative is the leading example of integrating a range of design principles and ICT tools to construct a situated learning environment for students commencing higher education studies and entering the creative industries. The Creative Town concept seeks to present the paradigm shift associated with the creative industries concept to early undergraduate students to motivate interest, facilitate engagement with and understandings of foundational knowledge, and identify opportunities for their future projects as creative industries practitioners in the local and national environment (Bruns & Turner, 2004). The Creative Town scenario is used in a CIF core unit which offers an environment that provides approximately 800 students annually with foundational knowledge and conceptual tools they can draw upon throughout their studies and career.

The unit is constructed around a simulated creative town called Ipskay which closely models real-life regional cities in South-East Queensland, Australia, and provides students with various opportunities for creative industries projects. The simulated environment is introduced through its city council Website (<http://creativetown.ci.qut.edu.au/>) and allows students to explore, express, experiment with, and ultimately exploit their own creativity in an authentic, interdisciplinary and flexible learning environment. The learning environment provides tasks that model real-world experiences and scaffolds learning to help students make the connections between theory and practice, between individual creativity and industry environments.

Students interact with the Creative Town over the semester, with assessment modeling authentic practices in the creative industries. Major assessment tasks involve the collaborative



development of proposals for creative industries-related projects to either the city or business councils of the town, and later require students to evaluate their peers' submitted project proposals from the perspective of a consultant to the councils. The approach simulates roles expected of creative professionals, which generally involve project-based employment in portfolio-based

careers, with funding sourced from various public or private partners. Considerable design effort has been invested in the construction of this creative space which uses an ecological interface. Consistent with the principles put forward by Herrington & Oliver (2000), the situated learning environment includes rich media resources created with a view to providing real life practice space for the students and enabling a sense of engagement and ownership. The environment models current trends in South-East Queensland and other comparable regions around the world, which have seen the gradual decline of primary and manufacturing industries and the simultaneous rise of the service, information, and creative industries sectors. Creative Town presents a city right in the middle of this paradigm shift, attempting to become a creative place, and manifesting many of the opportunities and threats, strengths and weaknesses of such cities as they undergo significant structural changes. An essential element for scaffolded learning has been the fictional nature of this space, which enables the removal of some of the complexities of 'real' cities in an effort to make this space more accessible to first-year students.

At this stage (the first iteration), the simulated environment is currently created in flat media and presented via a combination of web based information, blogs from fictional characters and

archived [fictional] newspaper stories. Consistent with the spirit of Generation C and capabilities for the creative industries, students can and should be co-creators of future content. For example, successful student projects will be built into the existing town and the students themselves become participatory contributors. The next stage of the creative town project is to integrate outcomes from other projects (such the e-portfolio, sharable objects on group work, 3D gaming and mobile computing) with the ultimate goal to develop 3D immersive environment. Generators of content could include past students who have completed proposals for the town. Students across disciplines, faculties (such as law, business, science, health) and universities could also be content contributors to the town. Simple examples include animation students creating portions of the town as part of their own learning and assessment outcomes or film and television students creating and inserting footage around events. More complex examples include complete simulations or games that can be added to the environment. As the environment becomes more complex, it will be important to scaffold learning according to the outcomes being sought. (Additional information about Creative Town can be found on <http://snurb.info/index.php?q=node/288>).

Concluding comments

The label “Generation C” is a useful portmanteau to consider literature that potentially describes attributes of the knowledge workers for the new economy within the creative industries drawing upon concepts describing the creative class and digital natives. Furthermore, the capacities and capabilities of Generation C described in this paper potentially apply to many school leavers entering higher education. In our efforts to provide high quality learning environments (Boud & Prosser, 2002) we must consider the diversity in learners’ knowledge, experience and learning styles – including those learners for which the digital realm is not native. Generation C characteristics have implications for designing effective and efficient learning environments and the skills sets required of current and future academic staff. While some tools, models and examples are available, these are formative and require further exploration, development and targeted resources and understanding from academic managers. Given the competing pressures on young academics and the traditional environments they are immersed in, there is every possibility based on historical trends that they will teach how they were taught rather than create new more powerful learning environments that more efficiently exploit learners’ capacities and technologies. If so, this will impede significant evolutionary potential. The challenge for academic managers is to acknowledge that new ways may be unpredictable and beyond immediate comprehension though blatantly obvious in hindsight. Academic manager’s roles are therefore to understand that new learning designs will take years to mature and disseminate.

References

- Alexander, S. (1999) "An Evaluation of Innovative Projects Involving Communication and Information Technology in Higher Education," *Higher Education Research & Development*, Vol 18, No 2, pp. 173-183.
- Alexander, S. & McKenzie, J. (1998) *An Evaluation of Information Technology Projects for University Learning*, CAUT, Canberra: Australian Government Publishing Service.
- AUTC (2002) *ICT-based Learning Designs*, Canberra, Australia.
<http://www.learningdesigns.uow.edu.au>
- Biggs, J. B. (1989) Approaches to the Enhancement of Tertiary Learning. *Higher Education Research and Development*, Vol 8. No. 1, pp. 7-25.
- Boud, D. & Prosser, M. (2002) "Appraising New Technologies for Learning: a Framework for Development," *Educational Media International*, Vol 39, No 3/4.
- Boud, D. (1993) "Experience as the Basis for Learning". *Higher education research and development*, Vol 12, no. 1, pp. 33-44.
- Brook, C. & Oliver, R. (2003) "Online Learning Communities: Investigating a Design Framework," *Australian Journal of Educational Technology*, Vol 19, No 2, pp. 139-160.
- Bruner, J. (1974) *Toward a Theory of Instruction*, Cambridge: Harvard University Press.
- Bruns, A. (2005a) *Gatewatching: Collaborative Online News Publishing*, New York: Peter Lang.
- Bruns, A. (2005b) "'Anyone Can Edit': Understanding the Producer," Guest Lecture at SUNY, Buffalo / New School, New York City. Producers and Producers: Institute for Distributed Creativity Cultural Studies Concentration of Eugene Lang College, retrieved 26 September 2005, Submitted by Snurb on Thu, 22/09/2005 - 11:05.
<http://snurb.info/index.php?q=node/286>.
- Bruns, A. & Turner, J. (2005) "Teaching Creativity in a Creative Town," *Creative Places + Spaces Conference*, Toronto, 30 Sep.-1 Oct. 2005, Submitted by Snurb on Thu, 22/09/2005 - 11:31,
<http://snurb.info/index.php?q=node/288>, retrieved 26 September 2005.
- Burnett, B. & Dawson, S. (2005) "Aligned and Resistant Communities: Exploring New Conduits for Online Engagement", *OLT-2005 Beyond Delivery Conference*: Brisbane, 27 July.
- Castells, M. (2000) *The Information Age: Economy, Society and Culture*, 3 Vols (Millennium edn), Blackwell, Oxford and Malden, Mass.
- Chickering, A. W. & Gamson, Z. F. (1987) "Seven principles for good practice in undergraduate education," *AAHE Bulletin*, Vol 39, No7, pp. 3 -7.
- CITF (Creative Industries Task Force) website, (2001) URL:
<http://www.culture.gov.uk/creative/mapping.html>, retrieved 27 September 2005.
- Cunningham, S. (2004) "The Creative Industries After Cultural Policy: A Genealogy and Some Possible Preferred Futures," *International Journal of Cultural Studies*, Vol 7, No 1, pp. 105-115
- Cunningham, S. (2002b) "From Cultural to Creative Industries: Theory, Industry, and Policy Implications," *Media Information Australia Incorporating Culture & Policy*, Vol 102, pp. 54-65 .
- Cunningham, S. Cutler, T., Hearn, G. Ryan, M. & Keane, M. (2005) "From 'Culture' to 'Knowledge': An Innovations Systems Approach to the Content Industries," In Caroline, A. (eds), *Accounting for Culture: Thinking Through Cultural Citizenship*. Ottawa, pp. 104-23.
- Daniels, R. Bruns, A & Smith, J (2004) "Towards Critical, Collaborative and Creative ICT Literacies: Integrating Innovative On-Campus and Online Learning Environments," Teaching and Learning Large Grant 2005 – 2006, QUT, Brisbane.
- Entwistle, N. J. (1987) *Understanding classroom learning*, London: Hodder and Stroughton.
- Florida, R. (2002) *Rise of the Creative Class*, Basic Books, New York.
- Gibson, C. Murphy, P. and Freestone, R. (2002) 'Employment and Socio-spatial Relations in Australia's Cultural Economy', *Australian Geographer*, Vol 33, No. 2, pp. 173-189.
- Hartley, J. (2005) "Creative Industries", in *Creative Industries*. Hartley, J. (Ed). Blackwell Publishing: Oxford, UK, pp. 1-40.
- Herrington, J & Oliver, R. (2000) "Exploring Situated Learning in Multimedia Settings," *Educational Technology Research and Development*, Vol 48, No 3, pp. 23-48.
- Howkins, J. (2001) *The Creative Economy: How People Make Money from Ideas*. London: Allen Lane.

- Jonassen, D. H., Peck, K.L., Wilson, B.G., & Pfeiffer, W. (1999) *Learning with Technology: A Constructivist Perspective*, Upper Saddle River, NJ: Merrill
- Jonassen, D., H. (2000). Toward a Design Theory of Problem Solving. *Educational Technology Research and Development*, Vol 48, No. 4, pp. 63 – 85.
- Kaplan-Leiserson, E. (2005) "Trend: Content Copyright, the Commons, and the C Generation," http://www.learningcircuits.org/2004/aug2004/0408_trends.htm , retrieved 22 September 2005.
- Kaprow, A. (2003) " 'Happenings' in the New York Scene," in N. Wadrip-Fruin and N. Monfort (eds), *The New Media Researcher*, Cambridge Mass: MIT Press, pp. 83-88.
- Landry, C. (2000) "The Creative Milieu," in *The Creative City: A toolkit for urban innovators*, pp. 132-59.
- Leadbetter, C. (1999) *Living on Thin Air: The New Economy*, Viking: London.
- McKeachie, W. J., Pintrich, P. R., Lin, Y. & Smith, D. (1986) *Teaching and learning in the college classroom*, Ann Arbor, MI: NCRIPAL.
- Mediacentre (2004) "Meet Generation 'C'," SIMM IV - Fall 04 - Executive Summary, Published: Monday, November 01, 2004, Updated: Thursday, December 02, 2004. <http://www.mediacenter.org/simm/generationc/?FLASH7=1>, retrieved 26 September 2005.
- Oakely, K. (2004) "Not So Cool Britannia: The Role of the Creative Industries in Economic Development," *International Journal of Cultural Studies*, Vol 7, No 1.
- Oliver, R., & Herrington, J. (2001) *Teaching And Learning Online: A Beginner's Guide To E-Learning and E-Teaching in Higher Education*, Mt Lawley, WA: Edith Cowan University.
- Oliver, R., McLoughlin, C., & Herrington, J. (2001, April) *Review of Evaluation Frameworks*, Paper
- Pascarella, E.T. (2001) "Identifying Excellence in Undergraduate Wducation: Are We Even Close? *Change*, Vol33, No 3, pp. 19 – 23.
- Piaget, J. (1972) *The Psychology of the Child*. New York: Basic Books.
- Prensky, M. (2001a) "Digital Natives, Digital Immigrants," *On the Horizon*, NCB University Press, Vol. 9 No. 5, October.
- Prensky, M. (2001b) "Digital Natives, Digital Immigrants, Part II," *On the Horizon*, NCB University Press, Vol. 9 No. 6, December.
- Sade, G. & Polson, D. (2005) "Spaces and Traces: The Ecologies of Mixed Reality Learning Environments". *OLT-2005 Beyond Delivery Conference: Brisbane, 27 July*.
- Smith, J & Brown, A (2005) Building a Culture of Learning Design: Reconsidering the Place of Online Learning in the Tertiary Curriculum, *22nd Annual ASCILITE Conference* (in print), QUT, Brisbane.
- Smith, J. Dillon, S, Nalder, G & Brown , A (2004) *Digital Multimedia Portfolios Supporting Authentic Learning in the Arts ePortfolio - 2004 - Transforming individual and organisational learning Conference Proceedings*, October 28 -29 2004: La Rochelle, France.
- Stewart, G. Smith, J. and Dunn, T. (2004) "Creating Engaging Learning Environments for IT Students", *Americas Conference of Information Systems*, New York August 3-6 2004.
- Sims, R. (2005) Keynote speaker,, *OLT-2005 Beyond Delivery Conference: Brisbane, 27 July*.
- Spurgeon, C. & O'Donnell, P. (2003) "Mapping the Media: 'Learner-Centred' Orientation to Graduate Employability", *AsiaPacific Media Educator*, No. 14, pp 147-55
- Trendwatchers.com (2005). "Generation C," http://www.trendwatching.com/trends/GENERATION_C.htm , retrieved 26 September 2005.
- Umbach, P.D. & Wawrzynski, M.R. (2005) Faculty Do Matter: The Role of College Faculty in Student Learning and Engagement. *Research in Higher Education*, Vol 45, No 2, pp.153 – 185.
- Vygotsky, L. (1978) *Mind in society: The development of higher psychological processes*. Cambridge, Massachusetts: Harvard University Press.
- Willems, J. (2005) "Towards Student-Centredness: The Implications Of Learning Styles In E-Learning," *OLT-2005 Beyond Delivery Conference: Brisbane, 27 July*.