Creativity as a desirable graduate attribute: Implications for curriculum design and employability

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A wide range of graduate attributes are listed, categorized and prioritized by different higher education institutions. However, one attribute that is less visible in the literature is creativity. In the current study, creativity has emerged as a desirable graduate attribute among students and employers. This paper presents an exploratory discussion framed around a pilot study that examines student and employer perceptions on how creativity in leadership can be developed through a work-integrated learning approach for innovation and enterprise students in a science and engineering program. Key outcomes are discussed suggesting that notions of creativity have evolved from first generation concepts of creativity as an artistic, complex trait of gifted individuals toward a higher level of development to second generation concepts of creativity as a purposeful, collaborative process. Creativity in leadership emerged as a desirable graduate attribute. *Asia-Pacific Journal of Cooperative Education, 2014, 15(1), 1-11*

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The twenty-first century workforce is expected to be prepared for a global experience that is fraught with complex workplace relationships and demands. "The 21st century university" (Welikala, 2011, p. 4) has a "social responsibility to equip the members of the society with necessary competencies, knowledge, understandings, and new skills so that they can constantly negotiate the changing nature of work, the labour force, information technologies and cultural identities of people". Among these desirable skills, competencies and attributes the literature is exhausted with variations and preferences that include critical thinking, communication, and social responsibility, for example.

Graduate attributes (also referred to in the literature as capabilities or competencies) are emphasized in higher education as incentives to attract both learners and employers. Learners are encouraged to enroll into programs that emphasize global experience and work-ready skills and competencies making them sought after 'commodities' in a rapidly technologized world. Employers are persuaded that graduates hired from higher education institutions that are committed to embedding graduate attributes within the curriculum will enhance their corporate profiles. Generic attributes are emerging in importance in higher education, influenced by several factors including the popular view of education being lifelong process; increased focus on the influence of education on graduate employment; and the quality movement towards the development of outcome measures (Bath, Smith, Stein, & Swann, 2004).

While graduate attributes are growing in prominence, the attribute of creativity has been given less attention in higher education. In fact, the education sector has been increasingly criticized for its failure in effectively generating creative leaders, which is critical for wealth creation and international competitiveness (Kim, 2011; Kimbell, 2009; Kirby, 2004). Clarke (2013) argues that universities focus excessively on storytelling approaches about entrepreneurs, business planning competitions or lean start up models excluding other models for developing creativity skills. He calls for more rigorous approaches to teaching

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creativity. Kuratko (2005) argues that although universities have evolved beyond the myth that creativity is a birth trait and cannot be taught, universities should address the relevant question concerning how creativity skills should be developed. He suggests that experiential learning can be an effective approach in developing creativity skills. In Australia, the term work-integrated learning (WIL) is used to describe experiential learning strategies for combining classroom studies with learning through work experiences that are related to academic goals (Groenewald, 2004). While there are various forms of WIL (Abeysekera, 2006), in this paper we focus on the placement which offers the advantages of heavy immersion of the student in the workplace and closely monitored, active reflection on intentional learning goals (Katula & Threnhauser, 1999). Given calls for improved approaches to teaching creativity in universities, this study will focus on the research question of how creativity in leadership can be developed through WIL placements. It will be undertaken within the WIL program for an innovation and enterprise business degree offered as a combined degree to science and engineering students in a mid-sized university in Australia that has been recognized for its leadership in WIL (Orrell, 2004). This research is important in examining suitable approaches for the teaching of creativity in universities for improved employability of graduates.

In extending the notion that the employability of graduates is intricately related to the higher education quality and attributes that graduates receive, it is necessary to note that employability is approached in different ways. Pegg, Waldorf, Hendy-Issac and Lawton (2012, p.5) present a learner-centred, holistic pedagogic approach to 'developing employability' regarding "learning in higher education as enabling and creative". They further argue that employability education goes beyond lists and categorization of employability attributes and move towards an "approach to personal development and career planning" (p.5) that enables graduates to apply their acquired skills in context. We subscribe to Pegg et al.'s (2012) adopted definition of employability as "a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy" (Pegg et al., 2012, p. 4).

The Bath et al. (2004, p.320) study it states,

> the purpose of this survey of students and teachers was to review the curriculum in order to ascertain whether the perceptions of students in terms of development of graduate attributes was similar to that of the course coordinator for individual courses; was the planned and enacted curriculum relating to the opportunities for graduate attribute development perceived and experienced by students as intended?

Unlike other studies (Bath et al., 2004) in which the focus is on examining the alignment of the intended learning outcomes with perceptions and experiences of learners as well as the perceptions of learners and teachers, this study investigates the perceptions of learners and employers. This paper presents the results of a pilot qualitative study on learner and employer perceptions of creativity as a desirable graduate attribute. 'Creativity in leadership' emerged as a desirable graduate attribute. The results have important implications for curriculum design and employability suggesting that an effectively designed curriculum may contribute to a higher level of employability of learners who demonstrate creativity. The study conducted a comparative analysis of student and employer perceptions of creativity to identify patterns of similar and different expectations for creative work in the workplace. Data that was examined includes reflective log book responses from 15 innovation and enterprise (science and technology) students completing an industry-based

placement as well as final report reflections from students and their industry supervisors. Results reflect a shift towards 'second generation', contextual views of creativity. The study indicates that there are various implications for curriculum design, delivery and workplace practice. More importantly, collaborative partnerships among employers and higher education institutions are critical if we are committed to preparing our future global citizens to take their place in a sustainable global economy.

Within the context of this paper, several creativity-related concepts are reviewed and examined from within the technology, innovation, and pedagogical theoretical frameworks that impact curriculum design, delivery and workplace practice.

PERSPECTIVES ON CREATIVITY IN LEADERSHIP

Creativity

This generally refers to 'the process of bringing into being something novel and useful' (Sternberg & O'Hara, 1999, p. 251). The terms creativity and innovation are sometimes used interchangeably or alternatively creativity is seen as a precursor, sub-dimension or overarching umbrella of innovation. Innovation refers to the entire process of converting an idea to a commercialized product or service (Trott, 2008). In this vein, there is much convergence between the concepts of innovation and creativity. However, conceptualizations of creativity vary in terms of their emphasis on the interplay between the creative individual, product, process and environment. McWilliam & Dawson (2008) observe an evolution towards the notion of creativity from 'first generation' conceptualization as being associated with an innate quality of an artistic individual towards 'second generation' contemporary understanding which views creativity in terms of a collaborative process which is relevant to a range of disciplines including business and science. This contemporary view challenges myths associated with creativity as an individualistic process within flamboyant, gifted individuals, demanding superior IQ, unteachable and unlearnable (Leonard & Swap, 1999).

Distributed Leadership

This is a key concept synonymous with development of second generation creativity. Similar to the evolution of creativity from an solitary to a collaborative process, conceptualizations of leadership have moved beyond the traditional assumption of the single individual leader to the notion of distributed and collective leadership that can be spread among multiple persons (Day, Gronn, & Eduardo, 2006). Leadership can be defined as the selective utilization of skills and expertise as required by the situation at hand in the network (Friedrich et al. 2009). In other words, the understanding of leadership goes beyond a series of traits inherent to an individual and beyond formal organizational roles or structures. Rather, leadership is context-dependent and it follows that the development of leadership capacities should also be understood in context. Graduates should have the ability to demonstrate creativity as a leadership skill as employers are placing attention on creativity as an important graduate quality. Furthermore, the teaching of leadership has been a staple offering in business schools globally however the focus on 'creativity in leadership' is noted as an emerging desirable graduate attribute. Creativity in leadership refers to the ability to seek creative solutions that are context-driven and [to regard] innovative practices as alternatives to 'best practices' (Patel, 2012, p.474), to facilitate and enhance product knowledge and productivity.

Given that employment trends are moving away from lifelong employment to shorter term employment contracts, portfolio of jobs, and the global mobility of the workforce, expectations are being placed on universities to develop graduates who are work-ready, self-starters, can demonstrate initiative, self-efficacy, creativity and leadership in their field of expertise as the context requires (Lucas, Cooper, Ward, & Cave, 2009; Rhodes, 2008). While effective leadership is important to foster creativity and innovation within organizations, it has also been noted that managers charged with leadership responsibilities must themselves work in innovative ways in order for organizations to be competitive (Block & Stumpf, 1992; Sternberg, 2003).

Self-Efficacy

Self efficacy is another key factor driving the development of second generation creativity which is seen as teachable and learnable. Self-efficacy refers to "whether individuals select particular careers, whether they persist in pursuing that career, how well they perform, how far they will be willing to stretch themselves in taking on more challenging work, and it is consequently a wellspring of innovation" (Lucas et al., 2009, p. 740). Lent, Brown and Hacket (1994) describe how WIL leads to the development of self-efficacy which influences career choices, which leads to improved work performance (Cole & Hopkins, 1995; Wood & Bandura, 1989). Lucas et al. (2009) examines how self-efficacious individuals are more creative and driven through authentic work experiences. In particular, WIL may provide a suitable environment for the development of self-efficacy through vicarious experience in observing positive behaviors and role models in the workplace, social encouragement, overcoming anxiety of work performance in new environments and authentic experience which refers to the perception of students that the task undertaken will require similar skills to those required in the future following graduation (Bandura, 1996, 1997).

To develop creativity in leadership, a focus on experiential learning is important (Kuratko, 2005). Various forms of experiential learning have been introduced into educational programs to foster creativity, including the development of business plans, business start-ups, interviews with practitioners, computer simulations, field trips and placement experiences (D'abate, Youndt, & Wenzel, 2009; Gorman, Hanlon, & King, 1997; Solomon, Duffy, & Tarabishy, 2002). The importance of WIL has been recognized in the literature in terms of its positive impact on the preparation of graduates for innovative careers (Cooper, 1998; Harrison, Cooper, & Mason, 2004; Kayes, 2002; Mustar, 2009; Oakley, Rothwell, & Cooper, 1988). However, Lucas et al. (2009) argue that further research is necessary to determine if and how experiential learning develops creativity skills in students. Therefore, this pilot study was designed to examine learner and employer perceptions on how creativity in leadership can be developed through WIL placements.

METHOD

A comprehensive experiential learning approach for developing leadership for creativity is in its infancy in Australian universities, and little research has addressed the factors at work within industry-based placements that may facilitate the development of relevant skills. Therefore, this exploratory study adopts a qualitative approach which is suitable in examining the emergence of themes in complex processes involving few participants (Cassell & Symon, 1994; Smith & Fischbacher, 2005). Data is captured and triangulated from a

weekly reflective student log books and final reports from students and industry supervisors which were collected on conclusion of the 12-week WIL placement, thereby providing dyadic data. In their weekly reflective logs and final report, students were required to reflect on their work conducted and specifically focus on skills and knowledge that influenced their creative performance. Industry supervisors were required to complete an evaluation report to specifically assess the ability of the student to perform creatively. These reflections are valuable in drawing from the appropriate wording and expression from participants (Creswell, 2009). Giving voice to participants, these approaches reduce the likelihood of misinterpretation given the due consideration of participants in developing written reflections.

Data Collection, Analysis and Validity

This study was undertaken within the WIL placement component of an innovation and enterprise (science and technology) degree at a medium-sized Australian university. The university was chosen because of its leadership in WIL since the 1990s (Orrell, 2004). Each placement in the program under investigation occurs over a 12-week period and involves an industry project geared towards innovation. Such projects include the design, development or commercialization of a new product, technology or service. Students entering this program hold completed science degrees (e.g., information technology, biotechnology). Consequently, the negotiated WIL project typically includes science and technology as well as business aspects. All participants in the program were invited to partake in the study and agreement was received from all 15 employer-student dyads. Industry supervisors were senior managers of organizations across both the public and private sectors.

At the time of this study, the WIL component of the innovation and entrepreneurship business degree was in its early stages of implementation with an initial small group of students. Thus, findings from this study will guide the fine-tuning and further development of the curriculum and the design and delivery of the experiential learning component. However, this study has broader application in light of the growing interest in the development of creativity in leadership. As governments internationally encourage a focus on creativity in management and even science degrees (Galloway & Brown, 2002; Handscombe, Rodrigues-Falcon, & Patterson, 2008; Hegarty, 2006), the experiences of this cohort of students as they worked on creative industry-based projects is significant.

Qualitative analysis was carried out on the data. Guided by concepts from the management education and innovation fields, data was coded, assembled and triangulated against themes consistent with the literature (Carson, Gilmore, Gronhaug, & Perry, 2001; Miles & Huberman, 1994). Construct validity was ensured as data was sourced from both students and industry supervisors, and the latter associated with a wide range of organizations including business, government and research institutes, thereby preventing bias (Choudhrie, Papazafeiropoulou, & Lee, 2003; Patton, 1990; Yin, 1994).

It should be noted that this exploratory study is based on one Australian placement program. Consequently, to increase its generalizability, future research is necessary both in Australia and internationally (Shanks, Rouse, & Arnott, 1993).

DISCUSSION OF RESULTS

The results revealed how WIL lead to the development of second generation creativity that is teachable and learnable. In particular, it uncovered how WIL lead to the development of self-efficacy as an important driver of creativity. Qualitative data reflected the role of distributed leadership through WIL in fostering creativity. Employers also discussed the importance of creativity for employability.

Creativity

The qualitative results reflected the trend in the literature towards the conceptualization of creativity as a learnable and teachable process. Unlike traditional conceptualizations of creativity as an artistic trait that gifted individuals are born with, data confirmed the trend towards a process that could be taught and leant (McWilliam & Dawson, 2008). Both students and employers recognized how students learnt and developed creativity in leadership through the selective application of expertise as the problem required. Student 3 discussed how the placement gave him 'free-reign' to do the project and how he was able to exercise his leadership ability and make executive decisions to address problems creatively.

> Over my university career I have developed a relatively effective method of solving problems. Throughout my placement I have improved on this (specifically tailoring it even for the work environment). Before I do anything I try to plan out how I am going to do it, starting with a high level analysis and quickly breaking that down into low level tasks; this way if I hit a brick wall with one of the lower level tasks I can usually move onto a different one for the time being… The mind-set I had towards problem solving also supported my creativity, giving me relatively free reign over how I could treat problems. I made an executive decision to convert the site to a friendlier web app to access the data, and even though we worked it out in the end and did not need to, it was encouraging to note that I was given that confidence. (Student 3)

Similarly, the employer of Student 3 expressed:

> [Student 3] approach to developing the project was very thorough. He showed that he is very capable of stepping back from the work and approaching the project from different viewpoints and more importantly implemented technology suitably for the business objectives that were asked of the solution. (Employer 3)

Distributed Leadership

The qualitative findings also confirmed the literature on distributed leadership whereby leadership is not only limited to an individual born leader but is context or problem specific thereby demanding that persons with certain skills assume leadership as the situation requires (Day et al., 2006). Student 8 explained how he was able to take the technical lead role to achieve creative outcomes:

> I was able to take a technical lead role … and also concentrate more on understanding design tasks . . . Leveraging my technical experience and temporary placement within the organisation, I was able to cross departmental boundaries in terms of understanding and get a good understanding of how various departments operated" (Student 8).

The need for this distributed technical leadership for creativity was also expressed by his supervisor: "[Student 8] exhibits a strong technical knowledge of both programming and

software design. He was able to identify gaps in the current system and use his expertise to find innovative solutions" (Employer 8).

Self-Efficacy

The results uncovered how WIL influences the development of creativity in leadership as students have a greater sense of self-efficacy. Self-efficacy refers to the level of confidence in one's ability to undertake work and perform well in challenging careers and this belief is fundamental to creativity (Lucas et al., 2009). Through the WIL experience, students expressed how they became more confident in their abilities to own the project and performed well in it:

> It took a few weeks into the project before I realised and felt that the project was essentially 'my own'. This made me take more initiative and leadership with the project, especially in solving problems and guiding the direction of the project. (Student 10)

Consistent with the literature, qualitative data also revealed how the WIL approach fostered self-efficacy in selecting innovative career directions, leading to higher levels of performance in those areas (Bandura, 1997; Lent, Brown, & Hackett, 1994):

> In reflecting about the work placement, I feel it has been a very rewarding and necessary experience. It has taught me to apply the theory learnt from university to a work setting. I t has clarified my career directions and skills I need to work on. I have established contacts and created options for employment after graduation. The experience has enabled learning due to its unpredictable and unique project, where my action and performance would be tested. It has shown me how an organization works first hand. I noticed through self-awareness that motivation and capacity to work with others is desirable for adaptability to the work environment. (Student 6)

Curriculum Design and the WIL Approach

The qualitative results resonated with the literature which supports the introduction of WIL approaches in the curriculum design for the teaching of creativity in leadership (Kuratko, 2005). Unlike the predominant focus on storytelling, case studies, competitions or even lean start up models that have failed in existing educational programs (Clarke, 2013), the WIL approach of partnering with existing organizations around creative industry projects was seen as valuable in developing essential hands-on skills of creativity in leadership. Numerous students discussed how the experiential learning was useful to them in developing their creativity skills in leadership as they realized how different outcomes can be achieved via various approaches: "There were instances where leadership was needed to steer the project in one direction. . . In general it helped me identify how leadership affects the outcome and gain an understanding of different ways to be a leader." (Student 9)

Employability

Overall, results confirmed the importance of creativity as a desirable graduate attribute with important implications for employability. Employers were pleased with those students who demonstrated creativity in leadership and many students were later employed by their placement providers: [Student 3] made the transition to business-based programming very well from his University Studies. Given the amount of independent learning for the project, the time frame, technology hurdles and need for strong communication skills, [Student 3] has excelled at the tasks required of him. We are very confident in [Student 3]'s ability and are

very happy to employ [Student 3] in the role of Software Development Engineer at the completion of his studies. (Employer 3)

CONCLUSION

The purpose of this study was to examine how creativity in leadership can be developed through WIL placements. I t makes an important contribution to the literature as the development of creativity in leadership in the WIL context has been under explored in existing studies. Yet, it has important implications to contemporary education, for instance in the fields of the arts, business, science and engineering. In a global creative economy which demands the development of new products and services for wealth creation and international competitiveness, the education system should produce creative leaders. Unlike traditional pedagogical approaches that have failed (Clark, 2013), this study examined how WIL through industry placements can be adopted to develop creativity in leadership. Reflecting the views of both students and employers, it recognized creativity as a desirable graduate attribute with important employability and curriculum implications for the teaching of creativity in leadership through WIL.

The development of these so-called "soft skills" is becoming paramount to universities and industry alike, and experiential learning is thought to provide unique opportunities to develop these skills. This approach enabled an investigation of the intricacies associated with educational approaches that move beyond the classroom and present a complex array of issues such as those associated with second generation conceptualization of creativity, self-efficacy and distributed leadership.

The findings also lend support the calls for an increased focus on "soft skills" such as communication, leadership, collaboration and innovation in education (Raelin, 2006; Sternberg, 2003), since these were critical to students' success in industry projects, as judged by their supervisors. The experience explored in this study appeared to enable guided reflection and facilitate the development of creativity in leadership. Students gradually began to see themselves as leaders as they understood the nature and scope of the project, sought and prioritized relevant information from a range of sources, developed effective partnerships and networks, applied technical skills and developed a sense of self-efficacy and initiative in advancing towards a solution. It is worth noting that the experiential learning approach investigated in this study was deliberately designed around an open-ended authentic project, negotiated between university and industry stakeholders, in the context of which innovation was a priority. This design may have been instrumental in allowing scope for the complexity of planning and thinking that is required for the development of both leadership capacities and the skills associated with creativity. Thus, the findings reported here might not readily apply to more traditional work experience placements.

With growing calls for university programs to become more relevant to the workplace, there is a clear need for further research into understanding and assessing the outcomes of different forms of experiential learning in relation to the stated objectives and presumed benefits of these program components. In particular, the role of industry-based experiences in developing students' capacities for creativity in leadership is worthy of attention from researchers. Research in this area should aim to guide more effective processes for designing and implementing experiential learning, enhanced performance of graduates through curriculum revitalization in areas such as leadership and creativity, improved relationships

with and outcomes for placement providers, greater knowledge transfer and collaborative innovation.

Employers are placing increased demands on university graduates for creativity in leadership. The traditional notion of leadership without an emphasis on creative attributes is no longer adequate in a highly competitive global job market. In the current global economy, leaders must learn to find creative solutions instinctively and spontaneously to generously advance the profit-margins of industry in order to keep their place in the organization. Higher education must step up to the challenge of inspiring tomorrow's leaders to demonstrate creativity in leadership through an authentic curriculum design for employability.

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In this Journal, Co-op/WIL is defined as an educational approach that uses relevant work-based projects that form an integrated and assessed part of an academic program of study (e.g., work placements, internships, practicum). These programs should have clear linkages with, or add to, the knowledge and skill base of the academic program. These programs can be described by a variety of names, such as work-based learning, workplace learning, professional training, industry-based learning, engaged industry learning, career and technical education, internships, experiential education, experiential learning, vocational education and training, fieldwork education, and service learning.

The Journal's main aim is to allow specialists working in these areas to disseminate their findings and share their knowledge for the benefit of institutions, co-op/WIL practitioners, and researchers. The Journal desires to encourage quality research and explorative critical discussion that will lead to the advancement of effective practices, development of further understanding of co-op/WIL, and promote further research.

Submitting Manuscripts

Before submitting a manuscript, please unsure that the 'instructions for authors' has been followed (www.apjce.org/instructions-for-authors). All manuscripts are to be submitted for blind review directly to the Editor-in-Chief (editor@apjce.org) by way of email attachment. All submissions of manuscripts must be in MS Word format, with manuscript word counts between 3,000 and 5,000 words (excluding references).

All manuscripts, if deemed relevant to the Journal's audience, will be double blind reviewed by two reviewers or more. Manuscripts submitted to the Journal with authors names included with have the authors' names removed by the Editor-in-Chief before being reviewed to ensure anonymity.

Typically, authors receive the reviewers' comments about a month after the submission of the manuscript. The Journal uses a constructive process for review and preparation of the manuscript, and encourages its reviewers to give supportive and extensive feedback on the requirements for improving the manuscript as well as guidance on how to make the amendments.

If the manuscript is deemed acceptable for publication, and reviewers' comments have been satisfactorily addressed, the manuscript is prepared for publication by the Copy Editor. The Copy Editor may correspond with the authors to check details, if required. Final publication is by discretion of the Editor-in-Chief. Final published form of the manuscript is via the Journal website (www.apjce.org), authors will be notified and sent a PDF copy of the final manuscript. There is no charge for publishing in APJCE and the Journal allows free open access for its readers.

Types of Manuscripts Sought by the Journal

Types of manuscripts the Journal accepts are primarily of two forms; *research reports* describing research into aspects of Cooperative Education and Work Integrated Learning/Education, and *topical discussion* articles that review relevant literature and give critical explorative discussion around a topical issue.

The Journal does also accept *best practice* papers but only if it present a unique or innovative practice of a Co-op/WIL program that is likely to be of interest to the broader Co-op/WIL community. The Journal also accepts a limited number of *Book Reviews* of relevant and recently published books.

Research reports should contain; an introduction that describes relevant literature and sets the context of the inquiry, a description and justification for the methodology employed, a description of the research findings-tabulated as appropriate, a discussion of the importance of the findings including their significance for practitioners, and a conclusion preferably incorporating suggestions for further research.

Topical discussion articles should contain a clear statement of the topic or issue under discussion, reference to relevant literature, critical discussion of the importance of the issues, and implications for other researchers and practitioners.

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