The Work Skill Development [WSD] Framework: Work- ready competencies for Today and Tomorrow

Sue Bandaranaike[1]

[1]College of Science and Engineering, James Cook University

Corresponding author email address: suniti.bandaranaike@jcu.edu.au

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Abstract

The Work Skill Development [WSD] framework is a learning and teaching model applied in the context of Work Integrated Learning [WIL] to facilitate an understanding of a placement role, resource utilisation, planning and management, lifelong learning, problem solving and critical thinking, and communication in the workplace. It attempts to narrow the gap between the triad partnership of placement students, educators and employers. The primary focus of the WSD is in teaching and learning work skills through reflective practice, and identifying employability pathways. The objective of this paper is (1) to outline the WSD framework and its application and contribution to contemporary teaching and learning in WIL, and (2) to predict future use. The WSD methodology follows a logical extension of the Research Skills Development [RSD] framework (Willison & O'Regan, 2006), to work skills. The paper outlines the many-faceted applications of the WSD model - from employability to career management; from the cognitive focus to the affective (social, emotional, cultural intelligence), and its potential use in the changing workplace of the future.

Background

Work Integrated Learning refers to a range of pedagogic and assessment practices from practicums, placements, internships, workplace experience or blended learning, focussed on gaining job experience. Patrick et al. (2008) define WIL as "an umbrella term used for a range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum". In this paper, the term 'Work Integrated Learning' is used generically to identify all types of student traineeships that integrate academic learning with applications to the workplace.

For a long time, one of the major criticisms of WIL teaching was the lack of connectivity in the triad - students, educators, and employers - and the lack of formative assessment and feedback (Atkins, 1999). The WSD fills this gap in that it provides a flexible tool for assessment, and contributes to WIL pedagogy.

Employability frameworks in WIL to date are associated with generic and specific competencies (Core Skills for Work developmental framework, 2013; Australian Qualifications Framework 2013; DEEWR, 2012; van der Heijden & van der Heijden, 2006), qualifications (Hillage & Pollard, 1998), preparedness for work, career development and teamwork (Bradshaw, 1989; Riebe et al., 2010), and critical reflection (Harvey, 2005; van Woerkom et al., 2002).

Developing work skills is an enterprise separate from, and unrelated to, the delivery of coursework and assessment in an undergraduate degree. Employers often refer to the mismatch between university teaching and practice in the workplace. While the transition from tertiary studies to the workplace requires much adjustment, it can be stressful to the student and the employer when expectations are not met (Bandaranaike & Willison, 2010).

Initially designed for use in the cross-disciplinary Faculty of Science and Engineering at James Cook University, Australia, the WSD lends itself to flexibility in use. The objective of this paper is to outline the WSD framework, its multifaceted applications and contributions to contemporary WIL research, and its adaptation to ongoing changes in the workplace. The paper will first discuss the methodology of the WSD framework and then discuss its multiple applications.

Methodology

The WSD is a sister framework to the RSD, exploring the connection between research skill development and work skill development. Both frameworks use similar cognitive and affective skill sets and measure levels of autonomy over time. The WSD is invaluable as a tool to facilitate the transition from university to the workplace. Given the documented research gap in mastery of work skill competencies (Patrick et al., 2008), the WSD provides informed strategies to fill the gaps and accordingly assist students.

While the WSD framework is based on the RSD methodology (Willison & O'Regan, 2006), it was mapped (Bandaranaike & Willison, 2009) using a combination of graduate attributes (Graduate attributes in Australian Universities, 2010), Australian government employability skills (DEST, 2006) and Bloom's taxonomy (Bloom et al., 1956). Subsequently, the WSD framework was revised in 2016 (Bandaranaike & Willison, 2009/2016) using The Australian Blueprint for Career Development (MCEECDYA, 2010) to focus further on emotional, social, and cultural intelligence in workplace training.

The WSD articulates six work skills facets – *Initiative, Resources, Lifelong Learning, Management, Problem Solving, and Communication* - and maps the level of student autonomy using five defined Levels - *Prescribed Direction, Bounded Direction, Scaffolded Direction, Self-Initiated Direction and Open Direction* as illustrated in Table 1.

This paper articulates the many-faceted applications of the WSD in a variety of contexts, from placements [WIL], to career development, to professional development, to in-course assessment.

`Table 1: Work Skill Development Framework

Work Skill Development Framework

EXTENT OF STUDENTS' AUTONOMY →

FACET OF WORK SKILL	Prescribed Direction Level 1 Highly structured directions & guidance from supervisor.	Bounded Direction Level 2 Boundaries set by & limited direction from supervisor.	Scaffolded Direction Level 3 Works independently and within provided guidelines.	Self-Actuated Direction Level 4 Develops own abilities & works innovatively with limited guidance.	Open Direction Level 5 Works within self-determined guidelines appropriate to discipline / context
a. Initiative & Enterprise Goal directed and motivated to **embark** & **clarify**	Uses a highly structured approach and guidance to identify role.	Identifies with role and clarifies requirements with some degree of guidance.	Establishes role independently and adapts with minimal guidance to achieve desired outcomes.	Adapts to role confidently and fulfills original and new requirements.	Identifies future goals and projects while fulfilling original requirements.
b. Technology & Resource Use **Finds & generates** data/knowledge using appropriate skills & technology.	Uses technology and resources with high degree of guidance to find and generate information /data.	Uses technology and resources with some degree of guidance to find generate information /data.	Uses technology and resources independently to find and generate a range of information / data.	Shows a high degree of sensitivity and proficiency in the application of technology and resources to generate information/data.	Shows a complete understanding and appropriate mastery in choice of technology and resources to generate information /data.
c. Learning & Reflecting Critically **evaluates** role and **reflects** on lifelong learning skills and career management.	Evaluates information /data using simple prescribed criteria to understand and reflect on role.	Evaluates information /data with some degree of guidance to understand and reflect on role.	Critically evaluates the match between theoretical and practical applications to generate knowledge.	Uses self-determined criteria to critically evaluate role and fill in gaps to generate lifelong learning skills.	Critically evaluates information using self-generated criteria based on experience and expertise to reflect on lifelong learning skills.
d. Planning & Management **Organises & manages** self while being perceptive to managing the needs of others.	Uses reflective practice to organise information and establish role using a highly structured format.	Uses reflective practice to master methods and practices using existing structures.	Uses reflective practice to evaluate and monitor own performance with confidence.	Organises information using self-determined structures and applies reflective practice to deliver clear projects and goals.	Uses reflective practice to articulate visions, goals and innovative strategies and effectively manage teams.
e. Problem Solving & Critical Thinking **Synthesises** and **analyses** data to create solutions.	Applies a simple structure to understand existing data and knowledge.	Applies a structured format to synthesise and analyse existing data and knowledge.	Works independently to synthesises and analyse a range of resources to generate new knowledge.	Applies critical thinking and works collaboratively to synthesise, analyse and produce innovative and creative solutions.	Applies sophisticated critical thinking and analysis to initiate change and extrapolate outcomes.
f. Communication & Teamwork Writes, presents & performs with **sensitivity** to interpersonal communication and **accounts** for ethical, cultural and social/team issues [ECS].	Uses lay language and requires highly structured guidance to communicate within teams. Shows minimal understanding of ECS.	Uses some discipline specific language and requires limited guidance to exchange information and understand ECS.	Uses discipline specific language and shows assertiveness in communicating information and applying ECS.	Communicates professionally using discipline specific language and shows a high degree of understanding and application of ECS.	Communicates professionally to negotiate and assert own values while respecting the contribution of others and in applying ECS.

The purpose of this framework is to integrate key employability skills into WIL and devise a measure of qualitative assessment in the workplace. This concept was developed by Sue Bandaranaike, James Cook University and John Willison, University of Adelaide. It is based on the Research Skills Development Framework of Willison & O'Regon, 2006/2013. www.rsd.edu.au

The WSD framework has been trialled successfully in a multidisciplinary context at James Cook University, Australia since 2009. Its aim was to provide a base for teaching and assessing WIL students and to contribute to WIL pedagogy. Students are encouraged to engage in reflective practices to understand and apply the six WSD comprehensive work skills during their work placement. In addition, an interview module at the end of the placement encourages further reflections on their placements and concludes with feedback to the student.

Some examples of teaching and learning outcomes of the WSD are:

1. Self-assessment of work skills in Pre and Post placements
2. Educator assessment of work skills
3. Employer perceptions, attitudes and assessment of placement students
4. Reflections on personal learning outcomes from the placement
5. Assessing strengths and weaknesses in specific work skills
6. Preparation for job interviews, including addressing selection criteria using WSD skills
7. Building self-confidence and developing communication skills
8. Being aware of challenges, limitations and strengths in the workplace.

Students apply critical reflective thinking to elucidate their understanding and practice of work skills during a placement. Assessment modules include a Placement Proposal, Progress Report, Reflective Journal, Essay and Interviews. The interview component comprises closed and open-ended questions; Likert scale statements are used to document pre and post placement positioning on a linear scale of Learner Autonomy.

The quality of WIL is independent of the quality of the experience itself, since most often the student is unable to control the choice of his/her placement. However, the ability of the student to apply critical reflective practice to WIL enables new learnings (Kathpalia and Heath, 2008; Sykes and Dean, 2012). To facilitate critical reflection, an online base was designed to self-appraise student performance - Pre Placement [commencement], In Placement [half way through] and Post Placement [completion] - and compile a personalised employability skill profile of a student's WIL journey (Torres, Bandaranaike & Yates, 2014).

Empowering placement students to develop workplace autonomy through critical self-reflection is pivotal to the transition from university to employability (Bandaranaike & Willison, 2017). Student

awareness of appropriate levels of autonomy (WSD) correctly aspired to in the workplace is important to the transition from university.

Discussion

One of the unique properties of the WSD is, using the Levels of Autonomy, its ability to plot an individual's progress over time within a placement, such as Pre (beginning) and Post (completion) placement performances using a linear scale (The Levels of Autonomy). These perceived changes are relevant to individually profile a student's strengths and weaknesses within a placement. This methodology was used successfully to profile an average for a select sample group of workplace students, and assess specific teaching and learning outcomes (Bandaranaike & Willison, 2010). This methodology was replicated at the Universidad de Guadalajara in the Faculty of Management in Mexico. Similarities and differences were compared with a previous Australian study (Quijano & Bandaranaike, 2017). The original survey tool was translated to Spanish in this research.

Other international users of the WSD framework for similar outcomes are the Suranaree University of Technology, Bangkok, where the WSD framework and the Interview modules were translated into Thai. The framework is also in use at the Cape Peninsula University of Technology, South Africa. The data collected is for international comparisons of pre and post placement positioning of students and cross-tabulations to identify factors contributing to a change (or absence of change), in the Levels of Autonomy.

The School of Dentistry, Adelaide University Australia, compiled a new framework to mirror WSD in their clinical skills. The paper discusses the framing and planned implementation of an applied model of reflective practice, the *Clinical Reflective Skills* (CRS) framework for undergraduates in clinical placements (Bandaranaike, Snelling, Karanicolas, & Willison, 2012). The value of this framework lies in its ability to measure the more holistic aspects of developing the professional skills required by all health professionals through reflective practice.

Other researchers have successfully used components of the WSD to WIL modules within a course such as at Central Queensland University, Australia (Sullivan & Bandaranaike, 2017). Preliminary discussions in using the WSD for Teacher Education are also in place at the University of the Sunshine Coast, Australia (workshop and personal communication, D. Heck, 2017). While the entire

potential of the WSD has not yet been unleashed, the above are a few applications in WIL teaching and learning.

The competition to have graduates ready for the workforce has resulted in educators concentrating mainly on teaching cognitive skills (Krahn, Lowe & Lehman, 2002). Ferns & Zegwaard (2014, p.186) state that traditional assessment methodologies focus on knowledge acquisition rather than proficiency in employment capabilities. From the employer's point of view, social skills and personality type are more important than degree qualification (Archer and Davison, 2008).

Work-readiness of students relates to the understanding of both the cognitive and the affective domains in the workplace (Bandaranaike & Willison, 2015a). Affective skills are based on emotional and social intelligence (Goleman, 1998; Salovey and Mayer, 1990). The context of using social and emotional skills in the workplace is discussed in Bandaranaike & Willison, (2015b). A *Cross Cultural Competency* (CCC) framework (Bandaranaike & Willison, 2016) to develop globally proficient professionals (Bandaranaike & Gurtner, 2016) has also been developed as an extension of WSD.

Career management competencies impact on long-term career success and greater employee mobility (Jackson & Wilton, 2016). In this context, a modified version of the WSD, the *Allied Health Career Development Framework* (AHCD), has been developed for practicing health professionals to facilitate the successful transition from being a novice to a professional (Bandaranaike & Kimmerly, 2014). The model monitors professional growth, uses reflective practice and peer coaching, and helps create a more goal-oriented employee.

When considering the future of the 21st century WIL, students must train for a more futuristic workplace (Smith & Anderson, 2015) where, for example, artificial intelligence will replace humans in some jobs (CBS News, 2015). Using the WSD model, this adjustment is possible in the use of T*echnology & Resources.* For example, it may be essential to create software and hardware to get computers to do things that would be considered 'intelligent' as when people did them, or in the *Management and Planning* skill facet, to allocate the more routine jobs to robots. Even though research in Artificial Intelligence (AI) is still in its infancy, it is important that WIL teaching and learning be aware of these changes (Kaplan, 2015).

Conclusion

The WSD enables both students and administrators to engage in reflective practice on the whole WIL process. While this research has provided valuable feedback in bridging the gap between learning outcomes and practice-based assessment, more long-term data collection is required for a better understanding of student performance in the workplace and for supporting the WSD as a management tool in Work Integrated Learning.

In summary, as a Teaching & Learning Model, the WSD -

- Serves the triad partnership of students, educators and employers to bridge the gap and make meaningful connections.
- Provides students with an opportunity to access employability pathways, career training, networking, and feedback, and to assess progress over time.
- Facilitates assessment and feedback from both the educator and the employer.
- Uses reflective practice in unlocking the key workplace skills and practices.
- Monitors progress in professional development, career management, resume writing, job interview preparation, addressing selection criteria etc.
- Aids in the integration of future social, economic and technological changes in the work place, and in WIL teaching & learning.
- Provides employer involvement with undergraduates through placements, mentoring, and contribution to business objectives.

The success of WSD is the underpinning methodology used in the design, delivery and assessment of WIL students.

Connectivity is the common thread for jobs of the future. The question is “how well do WIL models adjust to change if they are to create the new human capital conduits required for the future?” As an engaged teaching and learning model, the WSD framework has demonstrated its flexibility in use across several disciplines and its allied use in career development, job seeking, resume writing and at interviews. The next stage in the WSD framework application will be its adaptation to the projected AI changes of the 21st century.

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