Chapter 2

The Pedagogical Frameworks Adopted by Monash University Library

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Abstract This chapter describes three of the pedagogical frameworks that comprise the Models of Engaged Learning and Teaching (Willison, J. (2017). The Models of Engaged Learning and Teaching (MELT); Willison, J. (2020). The models of engaged learning and teaching: Connecting sophisticated thinking from early childhood to PhD. Springer). Monash University Library (MUL) adopted the MELT to underpin its teaching practice and guide library–faculty teaching collaborations. The MELT include the Research Skill Development (RSD) framework (Willison, J., & O’Regan, K. (2006/2018). Research skill development framework), the Work Skill Development (WSD) framework (Bandaranaike, S., & Willison, J. (2009/2018). Revised by Monash University Library, 2019. Work skill development framework; Revised by Monash University Library 2019) and the Digital Skill Development (DSD) framework (Torres, L., McLeod, A., Yazbeck, B., Rayner, G., Skrbis, M., Yates, S., Dickson, N., & Fulton, H. (2018). Digital skill development framework). The MELT have proved effective and adaptable in a range of disciplines and learning contexts by describing not only what students’ research, work and digital skills *are* but *how* they can be explicitly developed as a critical part of learning. Successful application of these models has strengthened and maximised the effectiveness of library–faculty teaching collaborations. This has enabled the library to remain responsive to contemporary skill agendas and as such, catalysed transformative change by repositioning the Library as a key contributor to student learning.

2.1 Background

A core function of the university library is to connect students, academic staff and researchers with requisite information resources to support study and research purposes (Bryant et al., 2020). Although academic libraries are key figures in providing these critical services, the past two decades have seen significant evolutionary change in how libraries perceive their role and the contribution they make

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to core university learning and teaching agendas. Deeply collaborative in nature, academic libraries have drawn on this characteristic to expand their educational role and align their information literacy (IL) skill expertise with student learning in the curriculum.

Motivating libraries to move (IL) more purposefully into the teaching space was prompted by a new focus on undergraduate research initiatives (Boyer Commission 1998), the advent of the library profession's Information Literacy Standards (ALA, 2000; CAUL 2001; ANZIIL 2004) and the introduction of University Graduate Attributes—outcome statements articulating the skills and attitudes graduating students should be able to demonstrate on completion of their studies (Oliver, 2013). A focus on students' skills signalled an opportunity for academic libraries to position themselves more firmly in the educational space. Hill et al. (2016) acknowledge the importance of students having gained a wide repertoire of skills from their studies which can include the following:

...critical thinking skills, such as intellectual curiosity, analytical reasoning, problem-solving and reflective judgement; effective communication; leadership and teamwork skills; research and inquiry skills; information literacy; digital literacy; personal attributes such as self-awareness, self-confidence, personal autonomy/self-reliance, flexibility and creativity; and personal values such as ethical, moral and social responsibility, integrity, and cross-cultural awareness (p. 156).

Such skills and attributes are considered both fundamental and critical for students to successfully undertake further study, gain employment, participate in and contribute positively to society (Barnett, 2000; Barrie, 2004; Bundy, 2004; Head et al., 2013). This has argued well for academic libraries to seize the opportunity, promote and link their information literacy expertise to the student learning journey to strengthen and maximise the library's contribution to student learning success.

2.2 Positioning the Library in the Educational Space

It is widely accepted that skills related to research coexist within knowledge making practices in the curriculum (Barnett & Ceci, 2002; Brew, 2006, 2012; Healey & Jenkins, 2009; Willison, 2012, 2020). As such, a strong call came from the library profession to champion information literacy and establish collaborative library–faculty teaching partnerships to facilitate access to the curriculum (Doskatsch, 2002; Peacock, 2001). However, as Doskatsch (2003) notes, connecting information literacy and research skill development to student learning can be challenging as 'success in fostering faculty–librarian collaboration depends on establishing common understanding and overcoming preconceptions and perceptions of such a relationship, and the external forces that drive cross-disciplinary collaboration' (p. 111). Although the development of IL was considered by the profession to be as Doskatsch (2003) identifies, 'educationally, professionally and politically desirable' (p. 114), more than a decade on, the literature clearly suggests the same challenges remain (Osborn 2017; Corral & Jolly, 2019). Bryant et al. (2020) lament that academic

libraries can still be ‘burdened by their historical role as a physical repository of print collections’ (p. 12). The authors stress that to be considered a key figure in the university’s educational landscape, the library ‘in turn must communicate clearly to campus partners its full value proposition and expertise, making clear that this value and expertise extends to a broad range of services beyond books’ (Bryant et al., 2020, p. 12). It is clear that libraries want to offer a greater contribution to learning and teaching in a rapidly changing global higher education sector, yet as Corral and Jolly (2019) have emphasised, ‘the role of librarians as teachers continues to be contested, questioned and resisted’ (p. 114).

Literature in the field of library studies clearly espouses the benefits of embedding students’ research skill development within disciplinary content (Bundy, 2004; Olivares, 2010; Torres & Jansen, 2016). It is recognised that this is the most effective way to connect the library’s skill development programmes with campus life and institutional educational priorities (Dewey, 2005). The challenge for library educators and discipline academics is how to incorporate and make library skill development programmes a relevant, embedded and coherent part of the student learning experience, and one which considers evolving pedagogy, teaching practice and curriculum design.

Although librarians have endeavoured to respond to the call to ‘engineer the metamorphosis from librarian to educator and learning facilitator’ with the profession’s first edition of the ANZIL Standards in hand (Peacock, 2001, p. 27). Gaining a foothold in the curriculum was not without its challenges. Bundy (2004) identified that what was lacking in the first edition of the ANZIL Standards was a way for librarians to guide and foster the development of IL skills within disciplinary content. The 2004 edition of ANZIL intended to rectify this, however, library and information studies literature still evidences a continuing struggle to meaningfully connect library IL programmes to skill agendas at the institutional level. Although there would be a number of contributing factors impeding the ability to activate the ANZIL Standards more broadly in disciplinary curricula, one reason could be that ANZIL describes ‘*what*’ information literacy skills are, not ‘*how*’ to activate and scaffold them coherently within learning content. Moselen and Wang (2014) also note that ‘very little of [the literature] has discussed how to prepare librarians to become active contributors to curricular design in higher education’ (p. 117). Related to this observation, ANZIL uses the language of librarianship rather than the language of educators which may also be a reason why the Standards have had limited reach beyond library audiences.

2.3 Re-envisioning the Library’s Educative Potential

To recalibrate how Monash University Library contributes to students’ skill development, learning skills advisers were integrated into the library’s organisational structure to work collaboratively alongside teaching librarians (Smith, 2011). This new structure enabled the library to assume responsibility for a broad spectrum of skills, challenging historical assumptions of the library’s role in the University (Smith,

2011). The success of the initiative demonstrates industry leadership and a model that leverages a way forward for libraries to expand their skill repertoire and engage more directly, purposefully and impactfully in the curriculum.

It soon became apparent, however, that this new partnership required an enabling tool to underpin and guide a reconceptualised library teaching practice. This tool needed to clarify what skills and expertise the librarian and learning skills adviser brought to this partnership, where their areas of knowledge and educational expertise lay, where they differed and where they overlapped. The tool also needed to not only harness the expertise of these educators, but guide and inform a new collaborative teaching structure.

To this end, MUL adopted and implemented the Research Skill Development (RSD) framework (Willison & O'Regan 2006/2018) in 2009, rather than the ANZIL Standards themselves. The RSD framework is a conceptual pedagogical model for guiding students' research skill development in the curriculum. Such a tool made sense in a context where MUL was reconceptualising and expanding its IL skill repertoire to include both research and learning skills. Therefore, the RSD signalled a way to guide how library research skill programmes could be embedded into disciplinary curricula so that the skills students required for researching were not artificially divorced from content knowledge. As such, the RSD heralded a promise to also underpin library–faculty teaching partnerships and in doing so, enable the library to achieve its strategic educational goal of embedding skills explicitly into the curriculum. In alignment with the RSD framework, the library adopted the terms 'research skills' and 'research and learning skills' as this nomenclature was also considered more appropriate to an academic learning environment (Smith, 2011). 'Research and learning skills' also communicate a holistic articulation of the skill expertise of librarians and learning skills advisers. With the RSD in hand, librarians and learning skills advisers had a way to overcome the challenge of how educators from across the university conceive research skills across disciplines. Since adopting the RSD framework in 2009, MUL has successfully enhanced collaborative library–faculty teaching partnerships for the explicit development of students' research skills as considered aspects of learning in a range of disciplines (Torres & Jansen, 2016).

The RSD framework is the first of a suite of skill development frameworks that have been created over the years that have been inspired by the sophisticated simplicity, effectiveness and adaptability of the RSD. The RSD framework together with sibling frameworks explicating work and digital skills respectfully are referred to collectively as the Models of Engaged Learning and Teaching (Willison, 2017). The sections that follow will unpack the guiding parameters of the MELT.

2.3.1 Opening a New Conversation for Students' Skill Development

Discovering the RSD was quite serendipitous, and occurred through a library conference presentation by the creator of the MELT, Dr John Willison in 2008. The RSD framework immediately resonated for a library context, primarily because of its foundational underpinning with the ANZIL Standards (ANZIL, 2004). The ANZIL Standards have informed the Facets of Research in the RSD framework. By overlaying the ANZIL Standards with Bloom's Taxonomy (Bloom et al., 1956), the RSD has essentially breathed life into the ANZIL Standards. Furthermore, the RSD framework has provided librarians with an important missing link—that is, by guiding educators as to what information literacy skills are and how they can be activated in library skill development programmes. This is significant because as early as 2001, the international library sector was lamenting that teachers and students alike did not have a 'roadmap' or a 'blueprint' to unpack the concept of IL, adding to the confusion was an understanding of the range of skills involved and as such, hampering their traction in the curriculum (Koch, 2001).

The RSD Handbook disseminated at this library conference included the names of two academics from Business and Economics at Monash University who were applying the RSD framework to their teaching. On contacting the academics with an offer to meet, there was great interest from both parties to learn about each other's interest and application of the RSD framework. The academics were keen to hear why the library was considering the RSD, and we, at the library, were keen to learn how the RSD framework was being applied in a disciplinary context. At our meeting, we placed the RSD framework as a conversation piece between us on the table. The conversation the RSD ignited was stimulating, insightful, surprising, extremely productive and positive. The RSD provided the means to have a conversation using a mutually understood language, helping us as library staff to discuss research skill development using the language of educators rather than through library-centric terminology. Centring the conversation around the RSD framework enabled us to discover and describe our common educative goals and our shared trajectory—enabling students to engage with discipline content and succeed in their studies. This meeting over the RSD was pivotal and sparked a partnership which has evolved and continued over the years, the RSD framework providing the foundational structure for the collaboration. This teaching partnership has offered opportunities to pilot and co-create teaching and learning initiatives informed by the RSD, co-facilitate RSD workshops across the university, present at international education conferences and over the years, contribute to funded research on the RSD framework (Willison, 2012; Willison et al., 2010). As the collaboration has progressed and continued over time, different library staff have been involved and have contributed to the collaboration which remains strong today (see Chap. 14 by Gleeson, Junor and Mayson).

2.4 The Theoretical Underpinnings of the MELT

The MELT frameworks are pedagogical conceptual models that individually articulate a range of academic skills and facilitate how Graduate Attributes can be animated in the curriculum. The MELT frameworks consist of three theoretical parameters. The vertical axis describes the ‘Skill Facets’ presented as verb couplets and informed by Bloom’s Taxonomy of Learning (Bloom et al., 1956). The horizontal axis, ‘Scope for Student Autonomy’, depicts a learning continuum informed by Vygotsky’s Zone of Proximal Development (1978), Biggs and Collis’ SOLO Taxonomy (1982) and the work of Boud (1988) on learner autonomy. Lastly, the adjectives in italics running alongside each skill couplet or ‘facet’ capture the affective domain (Krathwohl et al., 1964)—that is, the dominant attitude or disposition of the learner required to develop that skill. What differentiates the MELT frameworks from other skill frameworks is that they are conceptual models that when contextualised, provide a way to distil and scaffold the skills required for complex thinking. This offers library–faculty teaching partnerships a way to address the challenge of making implied skills visible in the curriculum. Therefore, it is through contextualisation and application that the MELT reveal their student-centredness, adaptability, sophistication and richness. Empirical studies applying the MELT in a range of disciplines have shown their potential to guide educators in their teaching as much as guide students in their learning (Torres, 2018; Willison, 2018).

2.5 Unpacking the Parameters of the MELT

2.5.1 *The Vertical Axis: Skill Facets and the Concept of the Affective Domain*

The vertical axis of each of the MELT frameworks individually describe the skill development associated with that framework, i.e. RSD framework (research; see Fig. 2.1), WSD framework (work; see Fig. 2.2) and DSD framework (digital skills; see Fig. 2.3). In each framework, the reader will notice that the skills are depicted as verb couplets and are referred to as ‘facets’ (as in the ‘facets’ of a diamond). This is to give the impression of ‘skill clusters’ that relate and overlap with one another and importantly, need to be developed in tandem. Each facet is accompanied by a descriptor informed by Bloom’s cognitive domain (Bloom et al., 1956). The descriptor is meant to encapsulate the essence of the Skill Facet by describing what the learner is doing at that point of their research (RSD framework), workplace activity/practice (WSD framework) or in using digital technology (DSD framework). A guiding question is also included, which ‘unpacks’ the facet by personalising and expressing the skill through the ‘learner voice’.

Fig. 2.1 The Research Skill Development (RSD) framework. Willison and O'Regan (2006/2018). Reproduced with permission

2.5.2 The Concept of the Affective Domain

The affective domain, defined as values, motivators and drivers (Krathwohl et al., 1964) or as dispositions and attitudes, accompanies the Skill Facets (cognitive domain) of each of the MELT frameworks. The affective domain is represented by an adjective with each Skill Facet. These adjectives describe the positive emotions, attitudes and dispositions most indicative of each facet (i.e. the dominant disposition that describes that skill). The affective domain points to the importance of students recognising and developing attitudes and dispositions for learning together with skills.

Fig. 2.2 The Work Skill Development (WSD) framework. Bandaranaike and Willison (2009/2018). Revised by Monash University Library, 2019. Reproduced with permission

The inclusion of the affective domain, and associating it with the cognitive skills described in the facets, shifts the focus from a teacher-centred viewpoint to a student-centred one. The role of the affective domain in specific association with the skills and processes of researching has been explored by Kuhlthau (2004). Kuhlthau insightfully draws connections between students' affective dispositions ignited by the uncertainty of charting unfamiliar territory during the process of seeking and using information, and refers to this experience as the uncertainty principle. Kuhlthau (2004) states that.

Uncertainty is a cognitive state which commonly causes affective symptoms of anxiety and lack of confidence. Uncertainty and anxiety can be expected... confusion and frustration are associated with vague, unclear thoughts about a topic or question (p. 341).

Fig. 2.3 The Digital Skill Development (DSD) framework. Torres et al. (2018). Reproduced with permission

Although the MELT frameworks focus solely on adjectives that describe positive dispositions, by acknowledging the affective domain, they draw the educator’s attention to the importance of the range of dispositions and attitudes that are part of an individual’s experience of learning. In a library context where the primary orientation of library programmes is to teach students skills for researching, it is important to acknowledge that feelings of uncertainty, anxiousness and frustration also accompany the information seeking process. The MELT frameworks have provided a way to conceptualise how the theoretical principle of uncertainty marries with a constructivist approach to learning. As library educators, being aware of the theoretical principles related to the affective domain in our teaching practice makes us more sensitive to what we need to consider when designing skill development classes.

2.5.3 *The Horizontal Axis: Scope for Student Autonomy*

The MELT share a horizontal axis, the ‘Scope for Student Autonomy’, where the degree of learner independence is described in incremental and progressive stages across a learning continuum. Autonomy is widely acknowledged as an important aim in education as increasing self-reliance enables students to gain awareness of themselves as learners and in doing so, take control and responsibility for their learning (Boud, 1988; Bruce, 1994; Butler, 1999; Fazey & Fazey, 2001). As Willison (2018) points out, the facets ‘reveal “*what*” skills are and the levels of autonomy show “*how*” to facilitate the facets, by providing a sense of the level of structure and guidance required by students’ (p. 4). Student autonomy is described through scaffolded increments across the MELT learning continuum. Willison et al. (2017) note that descriptors guide the educator’s intervention by the question: ‘How much guidance and space do these students need?’ The intention of the autonomy continuum is to build student independence or self-reliance with each skill over time. Autonomy ranges from *Prescribed* guidance where close educator or supervisor guidance is required through to *Unbounded* autonomy where the learner is able to perform activities independently and has the ability to extend the skills as described to new contexts.

Autonomy is a sophisticated concept which acknowledges that skills develop and progress at different rates (Willison et al., 2017). Unlike competency frameworks such as the Australian and New Zealand Information Literacy Standards (ANZIL, 2004) which suggests learning is unidirectional and can be benchmarked (i.e. whether a student can demonstrate the ability to do something to a certain level or not), the focus of the MELT frameworks is on learning. The Association of College and Research Libraries Framework for Information Literacy for Higher Education (ACRL, 2015) presents a renewed vision by introducing key threshold concepts for information literacy ‘to encourage a deeper understanding of what knowledge practices and dispositions an information literate student should develop’ (ACRL, 2015, p. 10). However, the ACRL Framework still lacks a developmental view of learning. A learning continuum framed by learner autonomy as captured by the MELT framework acknowledges that students may be positioned at various points on the autonomy continuum in relation to different skills and tasks at any one time. Autonomy depends on context, purpose and learner characteristics.

The scope of autonomy is also fluid in that a single task may shift through varying levels of autonomy as learners build competence and self-regulate their learning (Willison et al., 2017). In this way, the MELT recognises that students may demonstrate varying levels of autonomy for the different skills and that students may oscillate between these skills whilst engaged in a task. A learning continuum informed by learner autonomy recognises that students may at times move backwards when faced with less familiar activities, tasks or concepts that are new to the learner and therefore more conceptually demanding. As explained by Willison et al. (2017), ‘this does not mean going backwards educationally, but rather provides insight into what

happens in more conceptually demanding contexts, when students move into unfamiliar territory or when more rigour is required' (p. 3). As noted earlier, this aspect of autonomy is also mirrored in earlier work on information seeking behaviour by Kuhlthau (2004), and is referred to as moving from 'uncertainty to understanding' (p. 340). It is likely, therefore, that a learner will move *along* the continuum with every unfamiliar task.

The MELT makes it possible for an educator to reflect on how much guidance might be required for a particular task or learning activity and 'pitch' or scaffold the activity accordingly. In considering how much space needs to be created by the educator for autonomous learning to take place, moderate autonomy where room is provided for the individual to manoeuvre between dependence and independence, has been considered preferable to having full autonomy (Wielenga-Meijer et al., 2011; Zoghi & Dehghan, 2012). With this in mind, Willison et al. (2017) suggest that 'teachers should facilitate the level of guidance which produces the "sweet spot" for optimum learning and thinking', as such the authors conclude that, 'education generally, and the development of research skills in particular, would progress most successfully for a whole cohort when in this middling educational "Goldilocks zone"' (p. 430).

Therefore, from a teaching perspective (Willison et al., 2017) describe autonomy as a 'tug of war', where the degree of autonomy shifts according to.

...personal elements and the demands of disciplines, work or required competence. Autonomy is more a relationship between people and their learning environment and less a measurable entity or characteristic that increases unidirectionally: It is more about appropriate levels of conceptual space as each context warrants (p. 11).

Autonomy can therefore be considered as the extent of scaffolding and conceptual space required for optimal learning to take place. Willison (2020) notes that when educators facilitate learning, they 'enhance student metacognition' and students' ability to 'regulate their own learning' (p. 131). An optimal learning environment also acknowledges the interplay and inter-relatedness of affective skills and dispositions for supporting the student to over time, take control of their learning by gradually increasing their self-reliance (Bandura, 1997). As Bandaranaike and Willison (2017) put it, 'engaging in learner autonomy requires a wide selection of personal and interpersonal skills, and a range of cognitive, metacognitive, affective and social skills' (p. 6).

As autonomy descriptors provide educators with a continuum for designing incremental and scaffolded learning activities that make the skills embedded in the activities explicit, the MELT can guide educators in overcoming the predicament of how to chart the developmental progression of student skills. This means the MELT offer a way to teach and assess skills coherently in the curriculum (Bandaranaike, 2018; McLeod & Torres, 2020; Peirce et al., 2009; Pretorius et al., 2013; Torres & Jansen, 2016). This is significant for library skill development programmes, as a scaffolded approach to developing students' research skills in the context of higher education is often overlooked and even neglected by library skill development programmes.

The following section highlights the distinctive elements of each of the MELT frameworks, the Research Skill Development (RSD) framework, the Work Skill Development (WSD) framework and the Digital Skill Development (DSD) framework, that are explored in the practice-based examples in the book chapters that follow.

2.6 The Research Skill Development (RSD) Framework

The RSD framework is designed to explicitly guide the cyclic development of students' research skills (Willison & O'Regan, 2007). While the RSD framework was not created specifically with library programmes in mind, it immediately resonated with MUL when the library sought a pedagogical framework to guide its teaching practice. The RSD connected well to a library context in that it is derived from the ANZIL Standards (ANZIL, 2004). As such, the RSD framework indicated strong potential to guide teaching collaborations between librarians and learning skills advisers, and in doing so, bring together educators with complementary skills and knowledge for a new organisational teaching structure. Further validating the potential of the RSD framework to guide and underpin the library's teaching practice is Willison and O'Regan's (2007) acknowledgement that in creating the RSD framework, the ANZIL Standards appropriately capture a set of skills (see Table 2.1) that together make for effective and appropriate use of information, considered by the authors an essential part of the research process.

The RSD framework on the other hand, offers a reconceptualised interpretation of ANZIL by overlaying the six ANZIL Standards with Bloom's Taxonomy (Bloom et al., 1956). By explicating these six research skills across a learning continuum, Willison and O'Regan (2007/2018) effectively offer library educators the missing 'roadmap' or 'blueprint' to guide library-faculty partnerships and the way in which the library responds to student learning. Therefore, the significance of the RSD framework is in offering a reconceptualised interpretation of the ANZIL Standards, where information literacy skills are overlaid with and scaffolded progressively across a theoretically informed learning continuum.

While the Skill Facets in the RSD framework are represented sequentially to capture the research process, they are not lockstep or linear. In fact, the RSD recognises that research is not only a recursive process, but a process that can also be messy as the researcher moves back and forth between Skill Facets. The facets make these complex phases of research visible, they suggest a logical pathway through this nuanced process that is both iterative and non-linear. In this sense, the facets are dynamic and adaptable; they share elements of each other allowing for context-sensitive application to research. It is when the facets are contextualised that research skills and the processes associated with research are revealed. Willison and Buisman-Pijlman (2016) emphasise this and also stress that the RSD facets are not:

...generic skills, as this would imply a ready transferability, but rather they are overarching perspectives about the research processes that are common across disciplines. In use, these general descriptions are made real by academics who operationalise them as discipline-specific and context-sensitive descriptors (p. 66).

The adoption of the RSD framework across the university has been led by MUL and has been applied in partnership with academic staff to a range of disciplinary contexts. This includes Law (Hughes et al., 2011), Nursing and Midwifery (Pretorius et al., 2013), Business and Economics (Taib & Holden, 2013), Business Law (Kananatu, 2017), Creative Writing (Wong & Yahya, 2017), Engineering (Karu et al., 2017), Biological Sciences (Torres, 2018). In this volume, the RSD framework is explored in Business Management (see Chap. 14 by Gleeson, Junor and Mayson), in Law (see Chap. 8 by Brabon, Tucker, Pulungan and Lang), in an interdisciplinary master's programme in Environment and Sustainability (see Chap. 5 by Castillo and Ho), in a Nursing master's unit (see Chap. 12 Turner, Young, Freeman & Zahora) as well as Business and Economics at Monash University Malaysia (see Chap. 7 by Kananatu, Santra and Yahya) and in Art and Design (see Chap. 13 by Manuell).

2.7 The Work Skill Development (WSD) Framework

In recent decades, the focus in higher education has shifted to producing job-ready graduates with a broad range of skills and attributes which transfer well to workplace settings. The WSD framework is a pedagogical tool that facilitates the conceptualisation and explicit development of students' work skills. The WSD framework offers a way for educators to bridge the gap between university curricula and industry requirements. In this way, the WSD contributes to WIL (Work Integrated Learning) pedagogy by conceptualising and facilitating the explicit development of students' work skills, and informing and guiding student assessment in WIL as well as regular curriculum (Bandaranaike & Willison, 2010).

The WSD framework provides a structure and learning trajectory that enables educators to scaffold the incremental development of work skills in either existing or new curriculum as well as WIL experiences. This suggests practical applications such as informing course design, framing learning tasks, activities and assessment design. Therefore, the WSD framework supports educators to plan and set learning goals, so that students can see how their work skills are progressing. As a self-reflective tool, the WSD helps students to identify their work skills, what skills might be required in a given role, how to monitor their skill development and a way to interpret how autonomously they might be expected to work in a given role in regard to certain skills.

The WSD framework consists of Work Skill Facets (see Table 2.1) that describe a range of higher order cognitive skills and processes required in a work context. Like the RSD, each Skill Facet is represented as a verb pair (i.e. Initiative and Goal-oriented). The verb pair is intended to capture the complementary nature of these skills. While these capabilities may be mutually exclusive, they are more likely

Table 2.1 Skill facets of the RSD (2018), WSD (2019) and DSD (2018) frameworks demonstrating the inter-relatedness of the MELT facets (cognitive skills, the affective domain and guiding questions pertaining to each facet)

Skill facets		
Research Skill (RSD) Development framework	Work Skill (WSD) Development framework	Digital Skill (DSD) Development framework
Embark and clarify <i>What is our purpose?</i> Curious	Initiative and goal-oriented <i>What is my role?</i> Motivated	Explore and clarify <i>What is my/our purpose?</i> Curious
Find and generate <i>What do we need?</i> Determined	Resourceful and informed <i>What do I need?</i> Discerning	Select and use <i>What will I/we use?</i> Experimental
Evaluate and reflect <i>What do we trust?</i> Discerning	Learning and reflecting <i>How do I improve?</i> Empowering	Evaluate and reflect <i>How will I/we know?</i> Discerning
Organise and manage <i>How do we arrange?</i> Harmonising	Planning and management <i>How do I organise?</i> Mindful	Organise and manage <i>How will I/we plan the approach?</i> Harmonising
Analyse and synthesise <i>What does it mean?</i> Creative	Critical reasoning and problem solving <i>How do I solve?</i> Creative	Synthesise and create <i>What can I/we make?</i> Creative
Communicate and apply <i>How do we relate?</i> Constructive	Communication and teamwork <i>How do I relate?</i> Ethical	Collaborate and communicate <i>How do I/we relate?</i> Connected

to be complementary and co-dependent. That is, they describe a cluster of skill categorisations best developed in tandem. Like the RSD framework, the Skill Facets of the WSD do not sit in isolation, they are multi-faceted in that they overlap and share elements of each other.

The value of the WSD for the library’s teaching practice has been in describing how the skills students develop as part of their university education can also be articulated as skills valued by the workplace. The WSD was developed in response to a need to do the following: assess students’ work readiness (Bandaranaike & Gurtner, 2017; Bandaranaike, 2018) in a range of domains including emotional and cultural intelligence; provide feedback to students in internships; and guide reflective conversations on work skill development with students (Bandaranaike, 2018). It has been useful in conceptualising a self-reflective approach where students align their work skills with autonomy descriptors (Torres et al., 2014). As such, uptake of the WSD framework has been led by MUL and applied to framing learning tasks, activities and assessment design in disciplines such as Accounting and Finance, Business and Economics and Law (Torres et al., 2014). In this volume, we share how the WSD has been used to map competency standards for Occupational Therapy to facilitate the library’s response to student learning (see Chap. 18 by Todd, Khoshsabk, Torres and Peart) and to guide and monitor a Library Internship Program for Korean Studies students (see Chap. 17 by Dewi, Kim and Jackson) highlighting how skills gained through study can transfer to the workplace (Table 2.2).

Table 2.2 Student autonomy as described in the MELT (RSD, WSD and DSD frameworks), demonstrating how the autonomy descriptors for each of these frameworks relate to one another

	Models of Engaged Learning and Teaching (MELT)				
	Scope for student autonomy				
	Prescribed	Bounded	Scaffolded	Open-ended	Unbounded
Research Skill Development (RSD) framework	Highly structured directions and modelling from educator prompt researching in which ...	Boundaries set by and limited directions from educator channel researching in which ...	Scaffolds placed by educator shape independent researching which ...	Student initiate research and this is guided by the educator	Students determine guidelines for researching that are in accord with discipline or context
Work Skill Development (WSD) framework	Highly structured directions and guidance from mentor where the student ...	Boundaries set by and limited directions from mentor where, the student ...	Demonstrates some independence within provided guidelines where the student ...	Works independently to innovate with limited guidance where the student ...	Works within self-determined guidelines appropriate to context, where the student ...
Digital Skill Development (DSD) framework	Highly structured directions and modelling from the educator prompt the learner(s) to ...	Boundaries set by the educator channel the learner(s) to ...	Scaffolds placed by the educator enable the learner(s) to independently ...	Learners instinctively initiate engagement with digital technology that may be guided by the educator to ...	Learners normalise and digital practices in accordance with context to ...

2.8 The Digital Skill Development (DSD) Framework

A world transformed by technology has brought new considerations for what it means for students to be digitally literate and what educators might be required to do to enable such skills in the curriculum (Goodfellow, 2011; McMahon, 2014). However, defining the dimensions inherent in digital literacy is a complex undertaking as digital literacy incorporates a sophisticated and broad range of skills. Perceiving digital literacy as pertaining solely to a set of technical skills over-simplifies their scope. A more expansive view of digital literacy incorporates a range of overlapping cognitive and interpersonal skills, attitudes, dispositions and practices in conjunction with technical skills (Feerrar, 2019). However, the complex nature of this skill set can challenge educators in explicitly describing and developing digital skills

within programmes of study (McMahon, 2014). This would suggest that describing digital skills and attributes calls for a taxonomy of terms to enable, evidence and guide learning practices (Stordy, 2015). However, Spante et al. (2018) in surveying the literature, note that defining the diversity of concepts related to digital literacy remains problematic. Within the context of higher education, establishing a common understanding of digital literacy remains evident, as policy and institutional documents would benefit from reflecting a more expansive view of this skill range, as well as greater consistency in defining what digital literacy encompasses (Feerrar, 2019; Spante et al., 2018).

A library-led initiative in partnership with discipline academics was established to create a suitable pedagogical tool to articulate and support the progressive development of digital skills for a variety of learning contexts. Libraries have a long history of being involved with IL and consider digital literacy as an expansion of this skill set. As such, digital skill frameworks have been created by academic libraries, to help demonstrate how IL skills connect to digital literacy (Feerrar, 2019). A number of digital skill frameworks created for educational contexts were examined and reviewed as part of the working group's initial project scoping. These frameworks were comprehensive and drew on a range of knowledge domains including cognitive and metacognitive, affective, psychomotor, social, personal and technical, however, although the frameworks covered an extensive range of digital skills, we concluded they carried certain shortcomings.

The overall focus was often information-centric, meaning, they sometimes focussed on finding, using and evaluating information in online settings. This risks a limited interpretation of the digital practices that are required to function effectively in contemporary digital settings, be they learning, social or workplace settings. In addition, most frameworks lacked an important developmental perspective to guide skill progression. Consequently, this limited the potential of these frameworks as pedagogical tools for explicitly guiding digital skill development within curricula.

In response to this identified gap, the DSD framework was developed to provide guidance to educators in enabling students' digital skills within a range of learning contexts. In order to address the complexity of what it means for students to be digitally literate, the DSD working group developed the following working definition of digital skills:

The contemporary digital skills and attributes required to engage with technologies for learning, researching, working, and functioning in society in the digital age. This involves consuming, collaborating and creating with digital tools, and takes into account digital identity, digital wellbeing and e-Safety (Digital Skill Development framework 2018).

The DSD framework is informed by the same pedagogical underpinnings and parameters as the earlier MELT, and therefore, offers a flexible, adaptable and non-prescriptive conceptual model to guide educators in enabling students' digital skills. The term 'digital skills' rather than 'literacy' was chosen because it aligns with the parameters of the MELT, ensuring consistency with these models. The DSD framework is being applied to provide pedagogical guidance in recognising, identifying, enabling and expanding the repertoire of contemporary digital skills required by

students to meet the demands of learning, social life and employment in a digital age (McLeod & Torres, 2020; Torres et al., 2018). A chapter exploring the DSD in a workshop for students undertaking an Education Pathways unit (see Chap. 15 by Pilz, McLeod and Yazbeck) is presented in this book.

2.9 Summarising the Characteristics of the MELT

The MELT actively facilitates student learning in ways that enable students' skills to grow in sophistication and rigour (Willison, 2018). The characteristics of the MELT make the developmental side of learning visible through the three guiding parameters of the frameworks: the cognitive domain (Skill Facets), the Scope for Student Autonomy and the affective domain. When engaging with the MELT, it is often useful to remember the frameworks have the following characteristics:

- Conceptual models
- Pedagogical tools
- Learning continuums
- Tools to inform assessment and curriculum design
- Flexible, adaptable, dependent on context
- Applicable to a range of curricula and learning contexts
- Offering a common language for research skill development amongst educators
- In synergy with educational strategies

On the other hand, the MELT have shown *not* to be.

- Assessment rubrics
- Prescriptive and inflexible
- A set of rules
- Lockstep

A benefit of the MELT is that each framework shares the same guiding parameters and theoretical principles. Therefore, familiarity with one of the MELT enables understanding of another of the MELT frameworks. This has been invaluable for establishing shared knowledge of the MELT across library teaching teams and for building library staff confidence in selecting and applying the most appropriate MELT framework for a given context.

The significance of the MELT for library educational strategies and goals has been in the way these pedagogical tools have opened and guided a new discourse for students' skill development, enabling the library to transform, extend and deepen its educational practice in a highly sophisticated way. The MELT has offered a way to overcome the dilemma faced by library staff, in how to identify, articulate and chart the movement of students' research skill development, as well as how to facilitate that movement. By providing a common language through which educators from across the university can underpin collaborative approaches to teaching, learning, curriculum and assessment design. Of significance, the MELT has catalysed a deeper

understanding of the professional, pedagogic and discipline-based perspectives of our practice, and what we share in common with educators across the university.

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