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Scaffolding student reflection for experience-based learning: a framework

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Reflection is widely posited as a professional practice and process that supports students to learn through experience. Effective reflection for learning through experience requires a high level of introspection and open-minded self-analysis, a capacity for abstract learning, and self-regulation and agency that few students in higher education innately possess. Reflection can, however, be learnt and taught through strategic interventions and careful scaffolding. This paper outlines a new framework for scaffolding reflection for learning through experience. The framework was developed by the authors as a scaffolding aid to develop teachers' ability to effectively incorporate reflection into experience-based learning curriculum in higher education. The authors contend that scaffolding reflection during each of four learning phases will positively contribute to learning through experience.

Keywords: reflection; teaching; learning; scaffolding; experience-based learning; higher education

Introduction

Reflection is widely discussed in the literature as a tool for promoting learning and higher order thinking skills, developing professional practice and facilitating and structuring learning through experience. Reflection may be approached from different perspectives or lenses (Brookfield 1995) and may be engaged with at different levels of depth, complexity, and criticality (Mezirow 1991; Kreber and Castleden 2009) depending on the experience, intended learning outcomes and the learner's capacity for introspection and open-minded self-analysis (Paris and Winograd 2003).

The capacity to critically reflect is associated with the higher order cognitive processes of self-regulation and metacognition (Paris and Winograd 2003) and 'indicative of the highest extended abstract level of learning' (King 2002, 3). As this capacity may be innately present in only a small proportion of students, support to develop the skills and practice of critical reflection will assist students to move through their zones of proximal development to a deeper level of reflection for learning through experience. Learners may be supported in this process through structured development activities that progressively increase their abilities and agency while reducing teacher-led direction, a process termed scaffolding instruction (Vygotsky 1978). This process assumes a more knowledgeable expert or skilful other

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is available to provide scaffolding instruction, a role often conferred on the teacher. However, there exists a diversity of teaching and epistemological structures in relation to reflective practice and with this a need to acknowledge that not all teachers are disposed to reflect, nor are they innately able to effectively teach critical reflection (Kreber and Castleden 2009). Teachers themselves may firstly have a zone of proximal development to negotiate around reflective practice prior to scaffolding learners' capacity for reflection. This paper synthesises and develops the learnings from the available literatures into a framework that may be used as a scaffolding tool for teachers to develop their reflective capacity and as a guide for scaffolding students' reflective capacity for learning through experience.

Background

Charged with supporting the pedagogical and scholarly underpinning for an experience-based learning initiative of a large Sydney-based university, the authors conducted an extensive literature search to identify evidence-based practice that would strengthen the nexus between reflection and learning through experience. The initiative, a curriculum renewal programme with the objective of graduating ethically and environmentally engaged global citizens requires all undergraduate students, from 2012, to undertake an experience-based learning unit as an integral part of their study programme. Hence our research goal to identify practices that would enable academic teaching staff to support students to effectively utilise reflection for learning through service learning, internship, practicum, cooperative learning, work-integrated learning, or other experience-based learning activities covered by the units.

Wide-ranging discussion, many case studies and extensive practice-based anecdotal evidence for the effectiveness of reflection for learning through experiential learning contexts were evident in the literature. An annotated bibliography, developed from the literature search, is available at: http://staff.mq.edu.au/teaching/curriculum_development/pace/resources/pace-reflection/

Our consideration of how reflection may best be scaffolded is informed by studies that provided specific suggestions for scaffolding the development of reflective skills before, during and after experiences. The main themes from the literature are explored through the development of a framework for scaffolding reflection for learning through experience. This framework was developed from a synthesis and further conceptualisation of the literature and contextualised for experience-based learning in higher education contexts.

Learning through experience beyond the academy

Learning through experience beyond the academy introduces new conditions that increase the need for learners to demonstrate agency or the ability to be 'self-organizing, proactive, self-regulating, and self-reflecting' (Bandura 2005, 3). These conditions may include: expectations additional to academic learning outcomes from the host organisation, the academy and the beneficiaries of the service or activity being undertaken; situations that may trigger emotions, challenge values and beliefs and engage learners beyond the cognitive with the potential for affective and whole person learning (Yorks and Kasl 2002) and transformative learning (Mezirow 1991); reduced access to and remote communication with teaching staff and peers; and

increasing reliance on technology to direct learning activities and connect learners with their teachers and each other. Without guidance, structure, and support, learners may be overwhelmed by the complexity and struggle to make the most of their learning experience. Reflection supports learners to make sense and meaning from their experience and at its most critical level, contributes to transformative learning (Mezirow 1991; Rarieya 2005). Reflection also assists in debriefing and attending to the emotional aspects of experience (Boud, Keogh, and Walker 1985). Supporting learners to develop their capacity for reflection and structuring opportunities for reflection before, during and after the experience will enable learners to navigate the inherent complexities of learning through experience.

It is possible to learn to reflect (Moon 2004) with both learners and teachers playing a role in the development of learners' reflective skills. Learners need to take an active role in developing and applying their reflective skills, inferring a capacity for agency that may not be well developed in all learners. A strong correlation between a deep approach to learning and increasingly critical levels of reflection (Leung and Kember 2003) and reciprocity between critical thinking and deep processing strategies (Phan 2009) illustrate the relationship between agency, metacognition, and the ability to develop and apply reflection for learning. The degree of agency students exhibit may influence how much structure, guidance and support they will require to effectively employ reflection for learning through experience. Timely scaffolding and provision of strategic teaching interventions (Moon 2004; Larrivee 2008) that support learners to progressively develop their skills and encourage self-regulation and agency for learning through experience are key teaching roles.

After synthesising these key learnings from the literature the authors developed a framework for scaffolding reflection designed as a supportive tool and guide for teaching reflection for learning through experience. The framework posits a relationship between student skill development, level of agency and teacher intervention through each of the learning phases and over time. Whilst acknowledging the important role that student agency plays in the development and application of reflection to learning through experience, this paper focuses on the teaching aspects of the framework.

Aligning reflection for learning through experience

Experience-based learning in higher education requires a degree of structure and planning that is not always required in other forms of experiential learning. Curriculum alignment has an important role in creating the conditions for students to learn (Biggs and Tang 2007) and reflection offers a mechanism for students to make sense and meaning of their learning experiences (Rarieya 2005). Reflection with its many applications, levels and contexts is not easily defined and a key message emerging from the literature is the importance of creating an effective climate and context for reflection through clearly articulated intent, purpose, meaning, and expectations (Boud and Knights 1996; Bringle and Hatcher 1999).

Curriculum design is important in the effective scaffolding and application of reflection to learning through experience. The many definitions and potential approaches to reflection can make it difficult for learners to confidently grasp what is expected of them. Transparent alignment (Harvey et al. 2010) of reflective

practice with the curriculum together with authentic learning experiences enables students and teachers to reach a shared understanding of the role of reflection for learning through experience.

The transparent alignment model suggests a reflective approach to defining the elements of curriculum, providing prompts that may be used to engage participants in a process of refining and aligning reflective activities to reach a shared understanding of expectations of intended learning outcomes and the application of reflection to learning through experience. This process is an important formative layer of scaffolding and if incorporated early in the curriculum will provide a solid foundation for learning through experience.

A framework for scaffolding reflection through four learning phases

We have approached the scaffolding of reflection for learning through experience as a process of layered learning interventions designed to encourage students to build their understanding, confidence, skill, and agency as they move into, through, and out of learning experiences that are set outside the formal academic setting. We identified four learning phases in which reflection may be scaffolded for learning outside the academy: learning to reflect, reflection for action, reflection in action, and reflection on action. The framework (Figure 1) was developed to illustrate the interrelationship between the learning environment, the level and development over time of learner agency and the level and type of teacher-led scaffolding required for each learning phase.

This framework acknowledges that the development of learners' reflective capacity is not linear. Developmentally appropriate decisions need to be taken: learners and teachers may focus on one phase, they may revisit phases, their agency and thereby their roles ebb and flow as teacher scaffolding is reduced and student agency increases, one student may identify different phases for different subjects or experiences.

Specific scaffolding goals for each learning phase support developmentally appropriate decisions (Table 2). These goals need to be contextualised to reflect the skills and agency of the learner, the learning context, the learning environment, and the type of experience. Contextualising questions to guide teachers with profiling their learning environment are listed in Table 1.

Once the learner, learning, and experiential contexts have been established, the scaffolding goals that will best support learner reflection may be selected from Table 2 and specific processes for scaffolding the development and application of reflective skills may then be identified.

Learning to reflect

Learning to reflect is an ongoing process that may occur at any or all points prior to, during and after the experience, however, a solid foundation for applying reflection for learning will be established if the scaffolding goals for learning to reflect are addressed early in the curriculum. Taking time to scaffold reflection prior to the experience will encourage learner agency early in the process enabling less scaffolding during and after the learning experience. This may not be easy: learning to reflect takes time and its incorporation early in the curriculum may affect the timing and

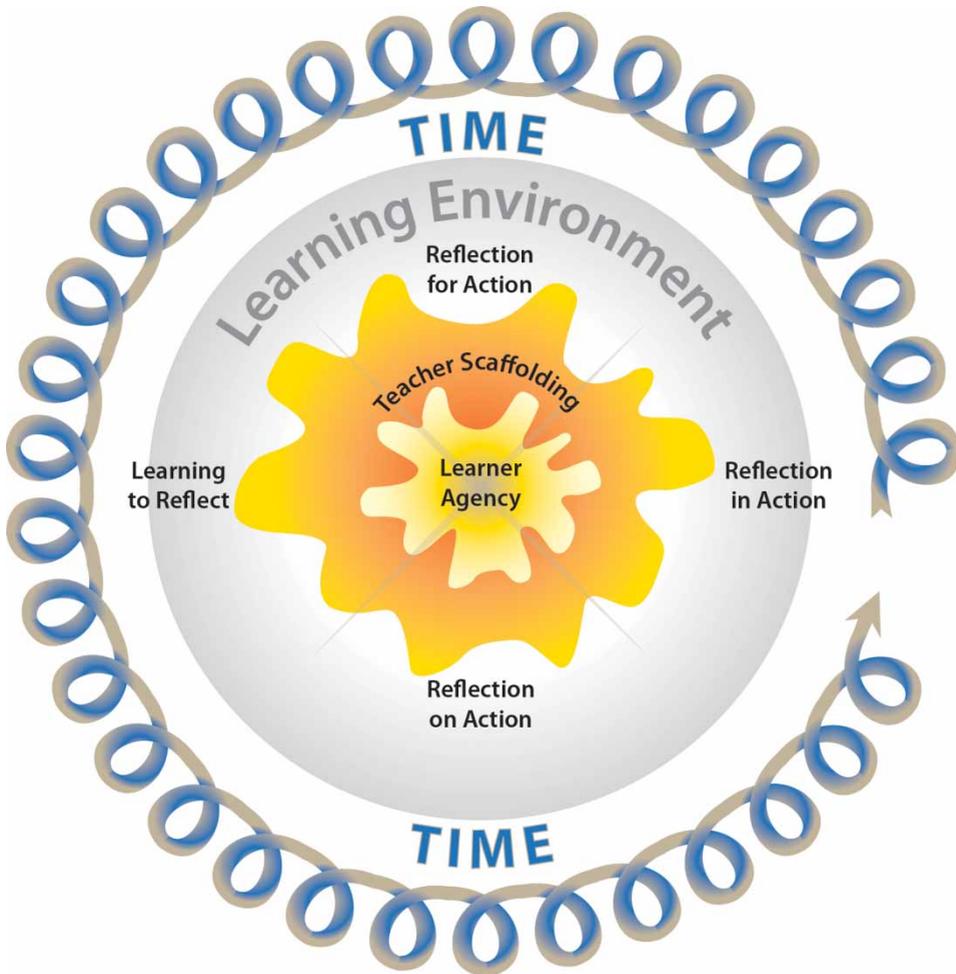


Figure 1. A framework for scaffolding reflection for learning through experience.

length of the learning experience within the constructs of an academic unit. The development of reflective skills is an iterative process that may be returned to at any time before, during, and after the experience to support learners to deepen their level and complexity of reflection. In ideal conditions, the process of learning to reflect may begin early in the student's course, long before they are scheduled for experience-based learning activities.

The first scaffolding goal for learning to reflect is to develop a shared understanding and context for reflection. This important first step requires a process through which students and their teachers explore together the purpose and specific academic context in which reflection is to be applied. Transparent alignment of intent, purpose, and context for reflection is important during this learning phase due to the multi-faceted nature of reflection (Harvey et al. 2010). Lack of clarity in these areas has been found to be an impediment to effective reflection (Bringle and Hatcher 1999; McNamara and Field 2007). Introducing a framework or model to aid thinking about aspects of reflection may be useful at this stage (Boud and Knights 1996). Many

Table 1. Guiding questions for profiling the learning environment.

Profiling the learning environment: guiding questions

- At what level are these students in their course, that is, is it an introductory or capstone unit?
- What level or type of reflection is required for this unit?
- What do I know about the reflective capacity of this student cohort and individual students?
- What prior exposure have they had to reflection?
- Are the students' English language or written communication skills sufficient for written reflection? What other media can be used to communicate reflections on learning?
- What is the learning phase in which they will be reflecting, for example, learning to reflect, reflecting for, in or on action?
- What learning environments and learning experiences will they be going into?
- What workplace supports will be available?
- How much and what type of contact will they be able to have with their peers or myself during the learning experience?

Table 2. Scaffolding goals for learning phases.

Learning to reflect

Reach shared understanding (between learners and teachers) of the role and expectations of reflection.

Develop learners' capacity for reflective thinking and metacognition.

Introduce reflective tools and diverse media.

Conduct early diagnostic assessment.

Provide formative feedback.

Provide opportunities for learners to increase depth and complexity of reflection.

Reflection for action

Clarify and contextualise reflection.

Prepare learners for the learning experience.

Provide reflective skills practice.

Provide formative feedback.

Conduct early diagnostic/formative assessment.

Reflection in action

Enable learners to make sense of their experience.

Enable learners to develop meaning from their experience.

Work through issues and critical incidents.

Generate options for documenting learning.

Encourage the development of praxis.

Provide formative assessment and feedback.

Reflection on action

Debrief experience, process emotions.

Provide processes for whole person learning.

Encourage application of metacognitive skill.

Develop learner capacity to synthesise learning from experience.

Encourage connections through application of learning to course, future work and graduate capabilities.

Encourage application of reflection to lifelong learning and professional practice.

Provide summative assessment and feedback.

typologies and taxonomies from different perspectives are offered in the literature (for example, Mezirow 1991; Brookfield 1995; Jay and Johnson 2001; Larrivee 2008), which are useful aids to support student understanding of reflection. Not all approaches will align with the intended purpose and context for reflection so a framework needs to be selected based on its fit for the intended academic application.

The development of reflective thinking and metacognitive skills is another scaffolding goal for this first learning phase and the approach needs to vary depending on the intended application of reflection and learners' current reflective capability. Reflection requires a degree of self-analysis and openness to new ways of thinking and approaching the world, which not all students will innately possess. The capacity to critically reflect, through which values, beliefs, assumptions, and worldviews are challenged and sometimes transformed, has been associated with the higher order cognitive processes of self-regulation (the capacity of a learner to manage their learning) and metacognition (an awareness and ability to analyse one's learning or thinking processes) (Paris and Winograd 2003). Modelling these processes is an effective scaffolding tool which involves teachers adopting a reflective approach to the presentation and discussion of the learning material, using reflective stories and questions and discussing and sharing their own thinking and reflective processes (Boud and Knights 1996; Bandura 1986). Providing written/textual exemplars can assist learners to understand distinctions between levels of reflection and enlighten them as to how to critically reflect (Moon 2004), however, there is a risk of encouraging writing to please.

Regular, authentic practice assists in the development of reflective skills particularly when reinforced with formative feedback on the level of reflection that the learner has attained, and coupled with issues-related questions to challenge the thinking (Bain et al. 2002). Cognitive prompts or a combination of cognitive and metacognitive prompts were found to assist the development of reflective skills, whereas metacognitive prompts alone had little impact (Nückles et al. 2004). Identifying reflection markers (words used by learners in their journals that indicate reflection) and assisting students to use these markers to understand how they use similar experiences, their personal life and other perspectives to connect with and make sense of their learning experience is an effective scaffolding process (Correia and Bleicher 2008).

Whilst these processes have been found to be effective scaffolding strategies, they are not without their challenges. They are time consuming, if too structured may limit creativity and some present an ethical dilemma for teachers: whether to read students' unedited reflections, which may be raw, unformed and intensely personal. Using a peer review process at this stage, if carefully structured by the teacher, may perform double duty: to provide learners with formative feedback and early diagnostic assessment at the same time as affording opportunity to practice the skills of reflection and metacognition through giving and receiving feedback and assessing others' reflection (Bannert and Mengelkamp 2008; Woloshyn et al. 1990).

Although written reflection through journals and online discussions are the most commonly discussed approaches to reflection in the literature, there are many reflection tools that may be used to scaffold and capture reflections, each having a place in the different experience-based learning phases. A deep approach to reflection requires fine language skills to communicate distinctions and insights and reliance on written reflection may disadvantage those with limited skills in the language in which

they are to report their reflections. Exploring the diversity of reflective tools and media offers more inclusive practice and encourages cognitive and creative approaches to reflection that may lead to aesthetic and emotional knowing (Newton 2004; Willis 2005; Jones 2006; McIntosh 2008) and whole person learning (Yorks and Kasl 2002). Creative and imaginal approaches to reflection and its expression include: story, art, performance, developing reflective landscapes (McIntosh 2008), and making films and digital videos (Petrosino and Cunningham 2003). Cognitive approaches may include: scenarios (Santoro and Allard 2008), critical incident (Whiteford and McAllister 2006) and force field analyses (Lewin 1951), reports, papers, lectures, and presentations. Providing a range of options enables learners to attain the best fit between reflective tools, their situation and skills, however, learning may be greater, and autonomous learning capacity strengthened, if learners are encouraged to move out of their comfort zones (Cranton 2000).

This early scaffolding of reflection skills is primarily about providing opportunity to develop reflective skill over time through exploration of a range of approaches, practice, and feedback.

Scaffolding reflection for action

The reflection for action learning phase prepares students to engage in experience-based learning. A distinguishing feature of learning through experience outside the academy is the increasing number and complexity of expectations on the learner, from the host organisation, host supervisor, and co-workers, to beneficiaries of their work, through to the academy and the learner themselves. These expectations may add a confusing and sometimes conflictual dimension to the experience. Reflection, through its potential to enable learners to differentiate others' perspectives (Brookfield 1995) and expectations becomes an important resource for learning through experience. Taking time to contextualise and clarify the role of reflection and how it will be used to support intended and unintended learning in the midst of, and after the, experience is a key scaffolding goal during this preparation step. There are too many ways to define and engage with reflection to assume that students will understand what is expected of them without clarification. Learners may also be encouraged to deepen their understanding of the reflective process by exploring the many expectations they will encounter during their experience. Developing learning contracts may be a useful approach to clarifying expectations and learning outcomes (Knowles 1986; Stephenson and Laycock 1993; Anderson, Boud and Sampson 1996). Involving students in the design of reflective activities for incorporation into the curriculum may engage them in reflection and encourage agency.

Preparing students for their experience requires more than providing information about the organisation. It requires an exploration of the many perspectives that they may encounter to challenge their beliefs, values, and assumptions as well as cultural and other conventions of which they need to be cognisant in order to operate effectively in their new environment. Guiding students to identify their values, beliefs, and assumptions related to the experience will assist in the development of metacognitive awareness and is inductive to deeper levels of reflection and learning (Hatcher, Bringle, and Muthiah 2004).

Encouraging students to explore alternative perspectives and expectations such as those of their teacher, academic institution, host organisation, host supervisor, the

beneficiaries of the service or activity they will undertake, their peers, co-workers, and theory from their course is an important scaffolding goal to prepare students to transition into their experience and to encourage a broader awareness of other ways of thinking that may facilitate deeper reflection (Mezirow 1991; Brookfield 1995; Boud 1994). Identifying and exploring potential conflicts of expectations, values, and beliefs between students and others they may encounter during their experience may assist students to broaden their perspective and prepare them to meet challenges during their experience. Strategic questioning (Peavey 1994) and introduction of theory, writings, and stories from alternative perspectives are approaches that may be used to challenge and broaden learners' assumptions and beliefs during these processes. There are, however, ethical considerations before engaging students in potentially transformative learning activities. Is it ethical, for example, for a teacher to decide which beliefs should be questioned or to potentially influence learners by presenting their own perspective (Mezirow 1991)?

Another goal of this reflection for action learning phase is to support the deepening of reflection through practice, discussion, early diagnostic, or formative assessment and feedback. Processes and reflective tools used for scaffolding early reflective skill development such as reflective writing exercises, critical incident analysis, coaching students to review each other's reflections, and identify reflection markers and connections, using cognitive and metacognitive prompts and providing feedback on the level of reflection may all be used or re-used in this learning phase to reinforce skill development. Further exploration and practice using a variety of reflective tools and media will also support skill development and reflection in preparation for learning through experience.

Reflection in action

The role of reflection for learning *in* the midst of experience is widely discussed in the literature with many reports of its effective application for learning, for example (Bain et al. 1999; Nikolou-Walker and Garnett 2004; McAllister et al. 2006; and Aukes et al. 2008). Scaffolding through the pre-experience learning phases will go some way to preparing learners to make sense of and develop meaning from their experience through reflection (Rarieya 2005). Further support during the experience itself is often required for, no matter how well-prepared students may be, the actual experience may be unpredictable and confronting, generating confusing, and unexpected emotions. Learners may need support to understand and process their reactions during and after the experience. Experiences may trigger unplanned and even undesirable learning outcomes and emotions for which learners may also need support to understand and process. The exploration of emotional experience is said to contribute to whole person learning (Yorks and Kasl 2002) and may lead to explication of felt or implicit knowing considered important for developing professional practice and competence (Gendlin 1968; Walkerdén 2009).

The scaffolding goals for the experiential learning phase that is reflection in action include: processing issues, incidents, and emotions; making sense and developing meaning from experience; applying theory to practice, termed praxis by Habermas (1973); documenting and effectively expressing learning; and provision of formative assessment and feedback. Scaffolding processes during the experience may involve challenging perspectives and world views through information, theory and

stories that introduce alternative social, economic, and political perspectives and encouraging learners to reflect through the four lenses (suggested by Brookfield 1995) of self, peers, teachers, and the literature. Many, if not most of the reflective processes applied to the earlier learning phases may also be used to support learners to reflect in the midst of their experience.

Critical incident reflection *in situ* was found to aid debriefing and deepen learning outcomes (Whiteford and McAllister 2006). Online journaling, blogging, chat rooms (Bosley and Young 2006; Nückles et al. 2004), storytelling, metaphor, art, dance, music, poetry, and other creative reflective activities (McIntosh 2008; Newton 2004; Petrosino and Cunningham 2003; Rhine and Bryant 2007) are considered useful approaches for reflection in action. Coaching that develops attention and awareness or mindfulness has been found to play a role in self-regulation (Spence 2006) and may be a useful non-cognitive process to encourage reflection for felt and intuitive knowing. While online and classroom discussion, chat sessions, coaching, and questioning provide opportunity for students to connect with and learn from each other during the experience, access to technology or ability to return to the classroom during experiences may be limited. Alternative means of supportive contact may need to be found as access to teaching staff to discuss (service) experience has been linked to positive student learning outcomes (Astin et al. 2000). Written reflection was found to make a stronger contribution to learning outcomes than discussion-type reflection when it was used to move learners beyond sharing feelings to a deeper level of intellectual analysis (Eyler and Giles 1999).

Reflection on action

The final learning phase in the framework involves scaffolding to support debriefing the experience, processing emotions and exploring affective learning (Boud, Keogh, and Walker 1985); synthesising experience and learning through, for example, summative assessment tasks; applying learning to the course and future work, developing graduate attributes, professional practice, and praxis; and developing and reinforcing metacognition and lifelong learning skills. Guided debriefing is an important scaffolding process that may take the form of reflecting from many lenses or perspectives (Brookfield 1995), challenging assumptions, values, and beliefs (Mezirow 1991), applying the learning cycle proposed by Kolb (1984) or the three-stage model of reflection proposed by Boud, Keogh, and Walker (1985). Effective debriefing requires highly specialised skills, prompting Boud (1994) to recommend that debriefing be left to those skilled in reflective processes.

Assessment tasks during this post-experience learning phase need to be summative to enable learners to reflect on and synthesise their learning. They need to be designed to support learners to integrate their learning and experience and may include written reports and papers, presentations, or lectures, films, creative performance, artwork, journal articles, integrative reflection on the learning contained in reflective journals and reflective discussion and presentation of learning portfolios. Reflective journals and learning portfolios, whilst widely used, are not sufficient for summative assessment unless they require discussion of integrating and synthesising reflections. The appropriateness of assessing reflective journals is contestable for ethical and pedagogical reasons (Stewart and Richardson 2000) and careful consideration and reflection is recommended before deciding on their use as assessment tools.

Reflection and learning may continue long after the experience and the academic requirements are complete, particularly if scaffolding has been effective in supporting the development of reflective ability and agency. Reflective and metacognitive skills may continue to develop and new experiences, or insights from prior experiences, may prompt learners and teachers to cycle back through earlier learning phases in the scaffolding framework to apply reflective tools and processes to aid their learning. The development of reflective skills positions students to be sustainable and lifelong learners.

Conclusion

Effective reflection for learning through experience requires a capacity for understanding one's thinking and learning processes, critical self-awareness of values, beliefs and assumptions, and an openness to alternative, challenging perspectives. The widely reported practice of using reflection to support learning through experience belies the complexity and higher order cognitive processes required for effective critical reflection and metacognition. Assigning reflective journals is not, therefore, sufficient to effectively support learning through experience.

After considered synthesis and systematic review of the evidence offered in the literature, the authors conclude that incorporating scaffolding processes into four learning phases inherent in the experience-based learning curriculum can contribute to the development of reflective capacity and contribute positively to students' experiences and learning. Reflective practice in learning through experience is diverse: in approach, application, intent, interpretation, documentation, and outcomes. The individual learners, teachers, workplace supervisors, and phases present numerous variables for each application. Critical variables identified by the current project are the level of agency and reflective capacity attained and practised by the learner. With a focus on attaining the relevant scaffolding goals embedded in the framework teachers can scaffold a learner towards effective reflection for learning through experience.

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