ASSESSMENT AS A STUDENT-DRIVEN, RECIPROCAL LEARNING PROCESS: A RECALIBRATED, SOCIAL COGNITIVE PERSPECTIVE

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Abstract

Contemporary learning in Australia necessitates that students develop the capability to play an active role in their own learning. Yet, the student's role as an active agent in the learning process has not been fully examined.

Drawing on the notion of assessment as generations informed by conflicting theoretical viewpoints, this paper explores how social cognitive theory presents a conceptually transformational and practical way forward in respect to understanding assessment as a learning process.

The paper pursues two goals. First, it outlines the transformation of assessment practice over three generations of pedagogical theory. Second, it argues that social cognitive theory presents a broadened understanding of assessment as a student-centred learning process. It is suggested that this may be the emergence of a new generation of assessment, in which understandings of formative assessment is enhanced through the integration of intrapersonal, behavioural and contextual influences.

Interview data from a cross-sectional, one-setting study into Assessment as Learning (AaL) are used to suggest how AaL transforms the role of students, from being participants in a social practice directed by teachers, into agents of learning in a reciprocal learning process.

Keywords*: assessment as learning, student agency, self-regulated learning, social cognitive theory*

Introduction

Assessment has been called "the bridge between teaching and learning" (Wiliam, 2011, p. 50), which aptly captures the tenet of this paper. Commonly, assessment is described as having three main purposes: assessing *for, as* and *of* learning (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2012). While all these forms present bridges between teaching and learning, this paper focuses on the least explored form of the three —Assessment as Learning (AaL), which has remained underdeveloped when enacted in classroom contexts (Dann, 2014). AaL is a niche area of formative assessment which positions learners at the centre of the learning process as critically reflecting connectors between task requirements and the learning process (Earl, 2013).

This paper applies social cognitive theory to explore AaL as a process which scaffolds students' agency and ability to self-regulate their learning. The concept of AaL is reviewed before the paper examines how assessment has been transformed through generations of pedagogical practice (James, 2008). A recalibrated, social cognitive perspective to view assessment as a reciprocal practice is then proffered. From this stance, students' learning is shaped by three reciprocating domains, which include intrapersonal, behavioural and contextual influences. Finally, it is argued that social cognitive theory presents a broadened understanding of formative assessment.

Assessment as Learning

The term *assessment as learning* (AaL) was coined more than a decade ago (Dann, 2002; Earl, 2003), but it remains a contested concept. For example, Harry Torrance (2007) used the term to describe the instrumentalist focus on criteria compliance in which assessment procedures and practices — formative as well as summative— have come to completely dominate learning and learning experiences. AaL has been characterised as a concept of 'procedural compliance' in which 'learning' has been displaced in teachers' thinking about the purpose of formative assessment (Hume & Coll, 2009). In line with a global focus on repeated measurements as part of a neo-liberal doctrine of accountability (Stobart & Eggen, 2012), AaL has been interpreted by some to represent using tests as a replacement for meaningful instruction. In addition, AaL is frequently associated with self-assessment in respect to students judging their own work, which raises validity and reliability concerns (Brown & Harris, 2014).

Rather than viewing AaL as testing in place of instruction, or focusing on students' evaluation of their finished work, this paper posits that AaL is better understood as a learning process of dynamic interplay between the teacher and student, integrating Self-Regulated Learning (SRL) approaches with classroom practice. SRL is here understood as a multidimensional process by which students proactively generate, monitor and adapt thoughts, behaviours, and feelings in pursuit of goals. This entails that students develop the skills needed to "adapt their thinking or ways of approaching a task, and sustain motivation in order to attain their goals" (Bembenutty, Cleary, & Kitsantas, 2013, p. xi). A key part of SRL is agency, a concept which refers to the intentional, planned pursuit of goals and initiation of appropriate action to reach an anticipated outcome (Bandura, 2006).

Indeed, distinct links between formative assessment and SRL have been made. In his seminal synthesis of relationships between classroom assessment practices and students' learning outcomes, Terry Crooks (1988) argued that formative assessment has the potential to have a powerful, positive impact by guiding students' judgement of what is important to learn. Yet, studies into formative assessment have predominately focused the role of teachers as designers of tasks and instruction, thus essentially adopting a unidirectional approach. However, such an approach may not sufficiently explore the dynamics of how students contribute to the flow of instruction and adapt tasks to make them meaningful to themselves. This interplay between students and teachers has been conceptualized as *agentic engagement* (Reeve, 2012; Reeve & Tseng, 2011). In this paper, agentic engagement refers to a reciprocal process between the student and teacher; a transactional activity in which students make a constructive contribution to the flow of the instruction by asking questions, making suggestions and contributing to the design and adaption of tasks as part of the learning process.

Assessment in continuous transformation: Generations of assessment practice

In her analysis of congruence between assessment practice and beliefs, Mary James (2008) argued for developing more valid assessment through better alignment among assessment, teaching and learning. In an attempt to explore whether blended approaches are possible, James used the term 'generations' to signify how different assessment practices have come to maturity at different points in history. The present paper aims to reinvigorate James' discussion by proposing that social cognitive theory indeed offers the possibility of a blended, enriched approach to transform assessment. While the notion of *generations* suggests past eras, these assessment characteristics and practices prevail, which is why all three generations are outlined in the present tense.

The first generation of assessment practices focuses on what has been taught in respect of gauging how well knowledge has been transmitted by the teacher and absorbed by the learners (James, 2008).

This assessment generation is informed by behaviourist theories in which learning is a conditioned response to external stimuli. The theoretical premise is that repetitions of stimuli develop habitual responses, which through 'skill and drill' become automatic. Within this first generation, complex skills are reduced into components which are taught separately before being reassembled in an overall task. Broadly speaking, assessment within this generation is conducted separate to learning, often taking place under test conditions at the end of a unit of learning.

A current example of first generation learning and assessment practice is Direct Instruction (DI) and Explicit Instruction (EI), which involve a highly organised and controlled format of explicit teacher instruction (Howell, 2014; Killen, 2016). In the DI approach, students' understanding of the content and the relevant skills are tested before the teacher moves on to the next stage (Howell, 2014). While the pedagogical underpinning of this approach dates back some fifty years, to the scripted learning model developed by Carl Bereiter and Siegfried Engelmann (Fogarty & Schwab, 2012), DI and EI approaches are well represented at many schools with a large proportion of Aboriginal students. Programs such as the *Stronger Smarter Program* (Luke et al., 2013) and *Good to Great Schools* (2016) use DI to track student learning with the aim to improve students' academic achievement.

The second generation of assessment practice is framed by cognitive constructivist theory, with its focus on assessing an individual learner's sense-making (James, 2008). This view shares the behaviourists' focus on the individual's acquisition of knowledge and skills, but assessment in this view is aimed at gauging the depth of an individual's understanding. Therefore, the learner has a more active role, as they need to interpret new information and apply their own understanding: for example, by demonstrating their problem-solving skills. Performance in second-generation assessments tends to require the student to demonstrate cognitive skills by applying conceptual frameworks to find solutions to problems (James, 2008). Second-generation assessments are frequently time-limited, as speed of completion is assumed to correlate with the level of a student's acquisition of concepts.

The third generation of assessment practice presents a shift away from psychometric assessment practices in which learning is measured as an individual's acquisition of knowledge and understanding (Elwood & Murphy, 2015). Learning is seen as a social practice where knowledge is developed as part of participating in activities with others (James, 2008). This generation of assessment is underpinned by sociocultural theory, in which learning is thought to involve both thought and action in a situated context. According to sociocultural theory, situations influence thinking, and thinking conducted through action alters the situation —the two constantly interact. Assessment in this view is an interaction among the student, teacher and the assessment task within its social, historical and cultural context (Elwood, 2006; Elwood & Murphy, 2015; Klenowski & Wyatt-Smith, 2014). Sociocultural theory stresses a collective perspective by focusing on how language underpins people's ability to collaborate and learn from each other. For example, James (2008) defines learning as a social and collaborative activity, emphasising its collective importance by arguing that: "[l]earning involves participation and what is learned is not the property of an individual but distributed within the social group" (p. 30). Learning is thus seen as a cyclic movement in which knowledge is created and distributed. It is part of the social, historical and cultural environment in which the learner's construction of knowledge is situated, as a member of a community of learners in a setting (Klenowski & Wyatt-Smith, 2014).

The Swiss researcher Philippe Perrenoud (1998) presented a contrasting position to the dominant sociocultural approach presented in English formative assessment literature. Arguing that French

language contributions to formative assessment (or 'formative *evaluation*') emphasise individualised regulation of learning, Perrenoud stressed the importance of students' agency by taking the feedback into account and thus allowing it to affect their cognition (Perrenoud, 1998). On one hand, this conception of formative assessment may be viewed as just another form of a constructivist, second-generation assessment practice. Alternatively, it may be seen as the beginnings of a transformed, synthesized conception of assessment. Interestingly, Linda Allal, whose research also reflects the French-speaking conception of formative assessment, has made a poignant distinction between the teacher-focused approach and what she referred to as the *enlarged conception* of formative assessment. The former refers to an approach in which the teacher assumes the responsibility for planning, managing and interpreting the results of formative assessment. By contrast, an enlarged conception of formative assessment scaffolds the active involvement of students in formative assessment through procedures such as self-assessment, reciprocal peer assessment and joint teacher–student assessment (Allal & Lopez, 2005).

The enlarged form of formative assessment aligns with AaL. Its emphasis on student agency echoes Johnmarshall Reeve's critique of formative assessment, which he has described as a unidirectional flow of instruction by which the teachers set tasks that students respond to. As Reeve (2012, p.161) put it: "What is missing from such a conceptualization of student engagement [… is] students' constructive contribution into the flow of instruction they receive, as students try to enrich and personalize that instruction". The idea of students' agentic engagement and contribution to instruction aligns with Allal's notion of joint teacher–student assessment as part of an enlarged concept of formative assessment. Encouragingly, there appears to be a growing interest among formative assessment scholars to explore students' active role in quality assessment and how it can be enacted in practice, to enhance learning in a variety of ways (e.g. Laveault & Allal, 2016).

Adopting a social cognitive perspective to conceptualise assessment as a reciprocal practice

Social cognitive theory shares the sociocultural acknowledgement of social participation as a central aspect of learning, by positing that people are both producers and products of social systems (Bandura, 1997). However, it transforms the understanding of social participation by shifting the focus to examining how people have influence over what they do, by exercising personal agency to motivate themselves, set goals and evaluate their progress (Bandura, 2001). Thus, from a social cognitive position, learning refers to the learner's agency and ability to self-regulate their learning within a social context (Cleary & Zimmerman, 2004).

Founded in an agentic perspective, social cognitive theory (Bandura, 1986) posits that people intentionally act to control their functioning and the course of events, which result from their actions. Students' learning is understood to be a process which is shaped by three reciprocating domains of factors (see figure below). These include (1) *situational factors* such as the curriculum outcomes which underpin the task requirements. The classroom context's support for learning is another key situational influence. The student's (2) *intrapersonal factors* –such as his/her prior understanding and knowledge; motivation; degree of self-efficacy and capability to employ strategies to self-regulate his/her learning– all influence how the student engages as an agent in their own learning. The learning actions the student takes e.g. planning; analysing the task; checking that they understand; and seeking help constitute the (3) *behavioural* domain. This also includes the actions teachers takes to scaffold the learning process.

Figure 1

<<< INSERT FIGURE 1>>>

Figure 1: A schematic representation of triadic reciprocality in AaL classrooms (adapted from Bandura, 2012)

Transforming assessment into a reciprocal practice

This paper seeks to present a transformed, broadened view which expands on the work of key AaL scholars (e.g. Absolum, Flockton, Hattie, Hipkins & Reid, 2009; Dann, 2012; Earl, 2013) by integrating SRL theory into AaL as classroom practice. The present discussion is informed by a study which was conducted as a writing project, designed to explore how primary students' learning was shaped in a student-centred AaL process (Fletcher, 2015). It followed the SRL cycle (Zimmerman, 2011) with its phases of *forethought*, *performance* and *self-reflection* (see table below). In particular, the study sought to understand the influence of scaffolding students' agentic engagement in the forethought stage of the AaL process, with the aim of developing students' ability to self-regulate their learning.

Table 1:
Phases of the Assessment as Learning Process

Forethought phase	Performance phase	Self-reflection phase
Students…	Students…	Students…
• analyse relevant curriculum learning outcomes • split overall curriculum outcomes into partial, task-related goals • explore possible learning strategies to employ • create a checklist of strategies and partial goals to meet during the performance/drafting phase • determine timelines for partial goals	• monitor their understanding and seek help • check performance against partial goals to monitor progress • seek feedback	• identify strengths and areas to improve for next time • attribute reasons for success and challenges

By inciting students' agentic engagement as part of the forethought phase of AaL, students are supported and scaffolded to have input into the learning process by using explicit goals from the curriculum and engaging in the learning process by making choices. This requires students to interpret and integrate the curriculum goals with their intrapersonal capabilities: for example, by deciding what

type of text to write, and determining a suitable audience. This approach draws on Schunk's empirical findings which suggest that students who perceive that they have a degree of control over content and performance, tend to initiate and sustain behaviours directed towards the relevant learning goals to a greater degree than students with a low sense of control (Schunk, 1995; Schunk & Pajares, 2005).

In the context of the present study's writing project, the forethought phase of the learning process entailed students to establish a checklist of specific skills and language features they would address in their learning, to meet the curriculum outcomes. Once the learning goals were identified, the students identified strategies to facilitate their progress. The approach applied SRL theory to a social classroom context which situated the AaL process. The AaL process integrated key SRL elements such as goal-setting, implementation of learning strategies and self-evaluation (see Beishuizen & Steffens, 2011; Pintrich, 2004; Schunk & Zimmerman, 2003).

Methodological overview

The study informing this paper was designed as a one-setting, cross-sectional form of practitioner research (Punch, 2009). Conducted as a writing project, the sample in the study included 256 students from school years 2, 4 and 6 (aged 7, 9 and 11 years), and sixteen teachers at an independent (co-educational, non-religious) primary school in Darwin, Australia. The school was ranked slightly above the Australian average on the Index of Community Socio-Educational Advantage (ICSEA). It had a longstanding commitment to support, enrich and extend its students as part of everyday lessons.

The data collection included students' three-phase planning templates and the students' subsequent work in the form of writing samples. In addition, the data collection included two interviews with each of the sixteen teachers and ongoing email correspondence with the teachers throughout the writing project. The teacher interviews were complemented with interviews of two students, twice, from each participating class. All interviews were digitally recorded, and transcribed with voice-recognition software during the time of data collection (Fletcher & Shaw, 2011). By transcribing concurrently, emerging themes in the data started becoming apparent early in the process.

All interviews were conducted by the investigator, who was familiar with all participants and well immersed in the setting as a longstanding member of the staff. As a researcher investigating the professional practice of other teachers at the school, possible coercion of colleagues was an obvious ethical consideration, as the investigator was in a position of trust. The study had ethical clearance and followed protocols for informed consent, freedom to withdraw at any time, member checking of transcripts and use of pseudonyms.

Data analysis

The central question examined how primary students' learning was shaped by the AaL process which followed the SRL cycle phases of forethought, performance and self-reflection. When transcribing the interviews, a number of pertinent issues in respect of how students' learning was shaped by the AaL process emerged, thus enabling preliminary codes to be identified. Further preliminary codes emerged during the re-reading of the interview transcripts, email correspondence with teachers, and the planning templates' reflective sections. This initial identification resulted in some thirty-five codes. Repeated reading of transcripts identified similar data that appeared significantly related. Guided by the central question and the theoretical framework, the mixture of student and teacher data was narrowed to eight synthesised thematic categories.

In line with social cognitive theory (Bandura, 1986) the categories reflected factors to do with teachers and students as individuals as well as the social context. They included a range of *emotions*; own *preferences* and *choices*; *cognitive considerations* such as reflective learning, strategies and predictions; and expressions of *self-efficacy* and *persistence*. The eight themes also included *social considerations* such as references to peers, teachers and audience; and *value judgements* such as the mentioning of depth, authenticity and meaningfulness. Also, descriptive reference to *teaching and learning practices* was identified as a theme.

In respect of this paper, the students' and teachers' individual cognitive considerations and learning practices were particularly informative as they illuminated how AaL can help foster students' agentic engagement and sense of ownership in the learning process.

Ownership of learning: insider accounts of students' agency in AaL

The following insider accounts were captured in students' planning templates and in interviews with students and teachers. They are included in this paper as a brief illustration of how student agency was manifested in the study. A more elaborated analysis and discussion has been published elsewhere (see Fletcher, 2015; 2016).

The data collected in the study suggested that the forethought phase, with its explicit requirement for students to engage in strategic planning, came to underpin the entire learning process. The students' perception of control, when planning and subsequently monitoring their learning, was evident in their planning documents, as well as in the verbal accounts. In her follow-up interview after the project had finished, Ruby, a Year 4 student, was asked to describe how she had used the planning template. She explained how she had used the checklist on the planning template to allocate marks for the different components of her planning, as a strategy for monitoring and evaluating her progress:

> I gave the first [strategy a score of] 2, because it gave me most ideas for my poem […] and the second was just to remind me what I should do. Like how to check it. The first part was how I should start my poem.
>
> Follow-up interview, Ruby, Year 4 student, October, 2009

This quotation illustrates Ruby's agentic engagement, manifested by how she adapted the task to make make it meaningful. Her explanation indicates how she applied metacognitive considerations and self-regulatory behaviour as part of the AaL process. She demonstrates analytical thinking in evaluating the importance of different strategies she used, by allocating scores according to "most ideas for [the] poem". Her ability to rank cognitive strategies aligns with higher-order thinking (Krathwohl, 2002). Ruby's ability to distinguish between different levels of cognitive considerations becomes further evident when she describes a lower-order thinking aspect, which she has included in her planning "just to remind me what I should do", as she took ownership of her learning in the AaL process.

The writing project required the students to identify their overall learning goals as well as the intended audience they wanted to engage with in their writing. This forethought element of the learning process generated a close interplay between teachers and students, in which students actively sought feedback to inform their learning. An illustration of the dynamic interplay between the teacher and students is described below, in a teacher's reflection of their role in scaffolding in the AaL project:

> It probably help[ed] them, writing it down: 'what is required of me in this task', and writing it down, having it clear, looking back to it all the time. Rather than me just going: 'this is a procedure'; 'this is what is required on a procedure'; 'here's an example, now it's your turn to write one'.
>
> Q: So, less spoonfeeding?
>
> Yes! Much less spoonfeeding. Although it did require spoonfeeding in helping them fill in [the planning template], then it was… yeah. You could see the cogs turning a bit more.

Follow-up interview with Sam, Year 6 teacher, October, 2009

The result of the students' agentic engagement —or as Sam put: *cogs turning*— was illustrated by the students' choices in planning and crafting their assessment. The following are two extracts from a Year 6 student's planning template, in which the student had set the goal to write a 'play' for 'children aged 3 to 6' as the intended text and audience. It illustrates how the student, Leon, had made strategic, cognitive connections (Reeve, 2012) as part of the forethought phase of the AaL process. Under the heading '*How will I show that I can write for a purpose?*' Leon set the following goals for engaging the audience and using writing strategies:

> Simple language. Teach them a lesson never to lie. Exciting voices. Fantasy. Animal Characters.
>
> Keep the Audience entertained. Get characters to talk to audience. Get audience to do stuff.
>
> Planning template from Leon, Year 6 student

The precision in Leon's choices above indicate his engagement in the learning process during the forethought stage, as he deliberately planned to use particular strategies to achieve his stated goal of engaging an audience of children aged 3 to 6. Furthermore, the deliberate choice of animal characters with "exciting voices", appears aimed to interact with the audience, which indicates Leon's SRL ability to adapt his thinking and ways of approaching a task, and sustain motivation in order to attain goals.

Several teachers described how they found that the scaffolded AaL approach helped their students develop confidence and competence as learners. Maria, a Year 2 teacher, provided poignant comments which reflected how she noted a sense of ownership of learning among her young students. She also thought the students appeared motivated and proud of their work during the AaL project. When asked whether any particular students had demonstrated learning achievements which were contrary to her expectations, Maria expressed how particularly the lower achievers in her class had shown a new side of themselves as learners:

> Uhm... I'd actually have to say... Those that are often hard to motivate got really into this. Uhm... and it might have been that sense of… eh, a bit of ownership, freedom with what they were doing. […] In their eyes... that... uhm... gave them that drive to.. uhm… to do the best that they could.
>
> Maria, Follow-up interview, October, 2009

Maria's description of how several of her Year 2 students demonstrated that they felt motivated and

that they sensed *"a bit of ownership, freedom with what they were doing"*, as Maria put it, is strikingly similar to what 'Elle', a Year 6 teacher noted. It is pertinent how both teachers spontaneously suggested that students' identification of their targeted audience —a key element of the forethought phase of the AaL process— appeared to have impacted on students' sense of motivation and the value they attributed to their work:

> I felt that they understood what they were writing it for. […] They didn't just show me that they understood the structural: *how to do it*. [Inaudible] It wasn't so mechanical. It was more… they just gripped on to it. It was like: *Right, there is a meaning for this; I know whom I'm writing it to, and for, and why I'm writing it. So I'm going to do the best I can do.*
>
> Elle, Follow-up interview, December, 2009

Arguably, Elle's comments capture the essence of using assessment as a learning process. When the notion of AaL was introduced as a reinforcement and extension of the role of formative assessment, Lorna Earl (2003) sought to emphasise the role of the student. She envisaged students as critical connectors between the assessment and learning process in a role "as active, engaged, and critical assessors [who] can make sense of information, relate it to prior knowledge, and master the skills involved" (Earl, 2003, p. 25). What Elle described in the segment above is students taking on precisely this critical role, which Earl describes as *connectors* between assessment and learning, who make active choices and exercise agency in steering their learning towards the targeted learning goals from the syllabus.

Conclusion

This paper seeks to offer a recalibrated perspective of assessment as a reciprocal practice by examining AaL through social cognitive theory. It proposes a conceptual and practical framework for AaL to scaffold students' agentic engagement and development of self-regulated learning skills. In this study, the AaL process was scaffolded by the teachers and framed by the planning template, which aided the students in their metacognitive process of monitoring understanding, organising ideas and checking for consistency. By connecting the success criteria with the assessment task and placing the student in the centre as an agentically engaged co-developer in the assessment process (Reeve, 2013; Reeve & Tseng, 2011), the process echoed Earl's emphasis on the student as a "critical connector" between the assessment and learning process (Earl, 2013).

This paper's exploration of assessment as transformational generations of pedagogical practice (James, 2008) highlights how contrasting theoretical lenses present different conceptual and practical insights. It is suggested that the proposed conceptual and practical framework to scaffold students' agentic engagement and development of self-regulated learning skills, as part of the AaL process, may be the emergence of a new generation of assessment. Five insider accounts are used to illustrate how student agency may be manifested within this transformed, reciprocal practice.

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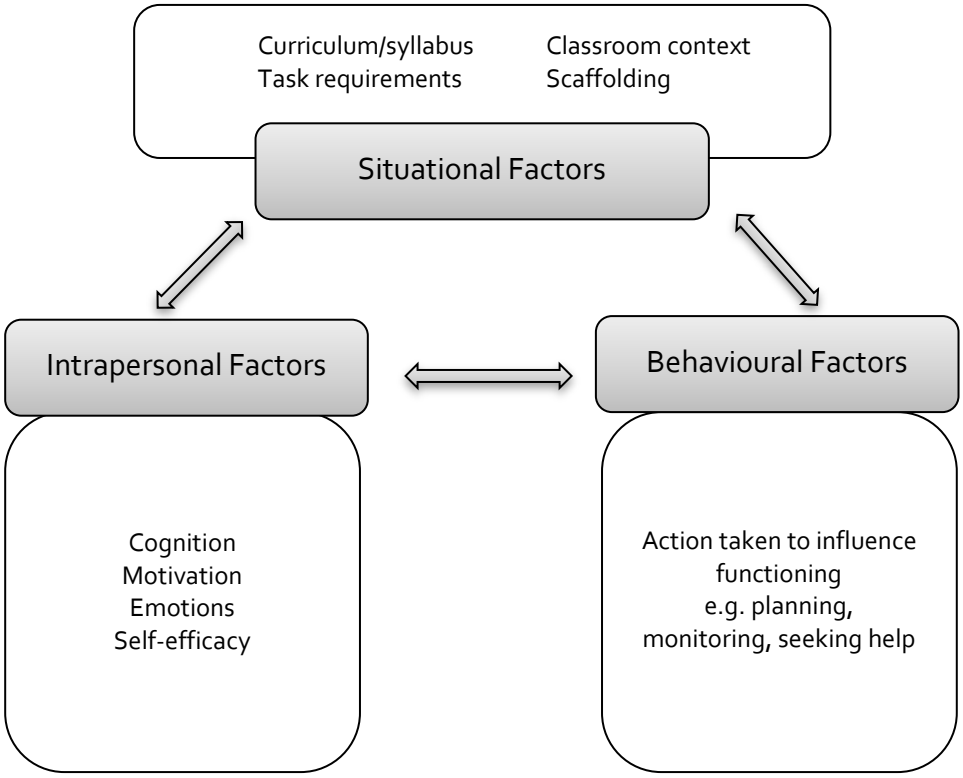
Figure 1


Curriculum/syllabus
Task requirements
Classroom context
Scaffolding
Situational Factors
Intrapersonal Factors
Behavioural Factors
Cognition
Motivation
Emotions
Self-efficacy
Action taken to influence functioning
e.g. planning, monitoring, seeking help