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Assessment to develop students' strategies and competence as learners

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Abstract

Contemporary learning in Australia necessitates that students develop the capability to be autonomous learners. This chapter explores Assessment as Learning (AaL) as part of formative assessment and Self-Regulated Learning (SRL). It outlines AaL and SRL as learning theories, before introducing a three-phase AaL cycle with examples of application from a study at a Northern Territory primary school. Evidence to indicate the value of this approach is revealed by data gathered through students' planning templates, writing samples, along with interviews with students and teachers. Impact of learning is presented with qualitative and quantitative data. The chapter includes teaching suggestions.

Keywords:

Assessment as Learning, self-assessment, self-regulated learning, competence, social cognitive theory, mixed-methods

Introduction

Assessment has been called "the bridge between teaching and learning" (Wiliam, 2011, p. 50), which reflects this chapter's exploration of how students use of learning strategies can be developed when they engage in Assessment as Learning (AaL). The chapter's discussion of AaL as an evidence-based teaching and learning approach derives from a larger mixed-methods study (Fletcher, 2015), in which teachers and students from years 2, 4 and 6 worked together on an AaL writing project. The term AaL refers to assessment that is designed to enable students to reflect on and monitor their own progress to inform their future learning goals.

Until recently, only a handful of studies had explored classroom assessment which enables the development of learner autonomy and students' engagement in self-regulated learning (SRL) processes. Encouragingly, this approach to incorporate formative assessment as part of learning and teaching is increasingly gaining an evidence base (see Andrade & Brookhart, 2016; Dinsmore & Wilson, 2016; Fletcher, 2016, 2017; Laveault & Allal, 2016). The literature includes various definitions of the concept and practice of formative assessment (e.g. Black, Harrison, Lee, Marshall, & Wiliam, 2003; Harlen & James, 1997; Perrenoud, 1998; Popham, 2008). However, here formative assessment is defined as assessment that is embedded as part of the learning process, and explicitly aimed at informing learners and teachers of the next steps needed to enhance a learner's understanding and skills. AaL is understood as an embodiment of formative assessment that positions learners as critically reflective connectors between task requirements and the learning process (Dann, 2002; Earl, 2013; Fletcher, 2016), as co-owners of their learning process. As Dann (2002, p. 67) points out, AaL is "most notably promoted through the process of self-assessment". Self-assessment refers to learning activities in which students reflect on what they have learned so far, and identify strengths and weaknesses in their learning as they make plans to help them progress to meet their learning goals. As such, self-assessment is an SRL competence (Andrade & Brown, 2016; Harris & Brown, 2013) that requires the skills of reflection, task analysis, goal setting and monitoring one's learning progress. The term SRL denotes a learner's ability to control their thoughts, feelings and actions about a

learning task by planning, monitoring and regulating the actions they take in pursuit of solving it (Zimmerman & Schunk, 2011). To conceptualise the skills and strategies needed for students to self-regulate learning, the study's theoretical framework combined situational influences such as task requirements; personal factors such as a learner's understanding and interpretation; and learning actions such task analysis and goal-setting.

Social cognitive theory

The study adopted social cognitive theory (Bandura, 1986; Zimmerman, 2011) to explore AaL as a classroom practice aimed at developing students' competence as learners, within the context of a writing project. Social cognitive theory works from the premise that human functioning is influenced by personal, environmental and behavioural factors, which mutually influence one another. As illustrated in Figure 1, from a social cognitive perspective, learning is shaped by the interplay among students' and teachers' *intrapersonal* influences (e.g. deductive reasoning, knowledge and skills, self-beliefs and emotional reactions, degree of motivation, interest); the *behaviour and learning actions* students and teachers engage in when working on the task at hand (e.g. clarifying and sharing learning intentions and success criteria; providing and seeking feedback); and the *situational* forces of the classroom context (curriculum demands, scaffolding and support from the teacher and peers, resources and exemplars). Learning and teaching is perceived to be influenced by the reciprocal relationship between these three domains of influences (Bandura, 2012; Fletcher, 2015). While these influences arguably shape all learning, this chapter limits its focus to writing as a process-driven learning activity.
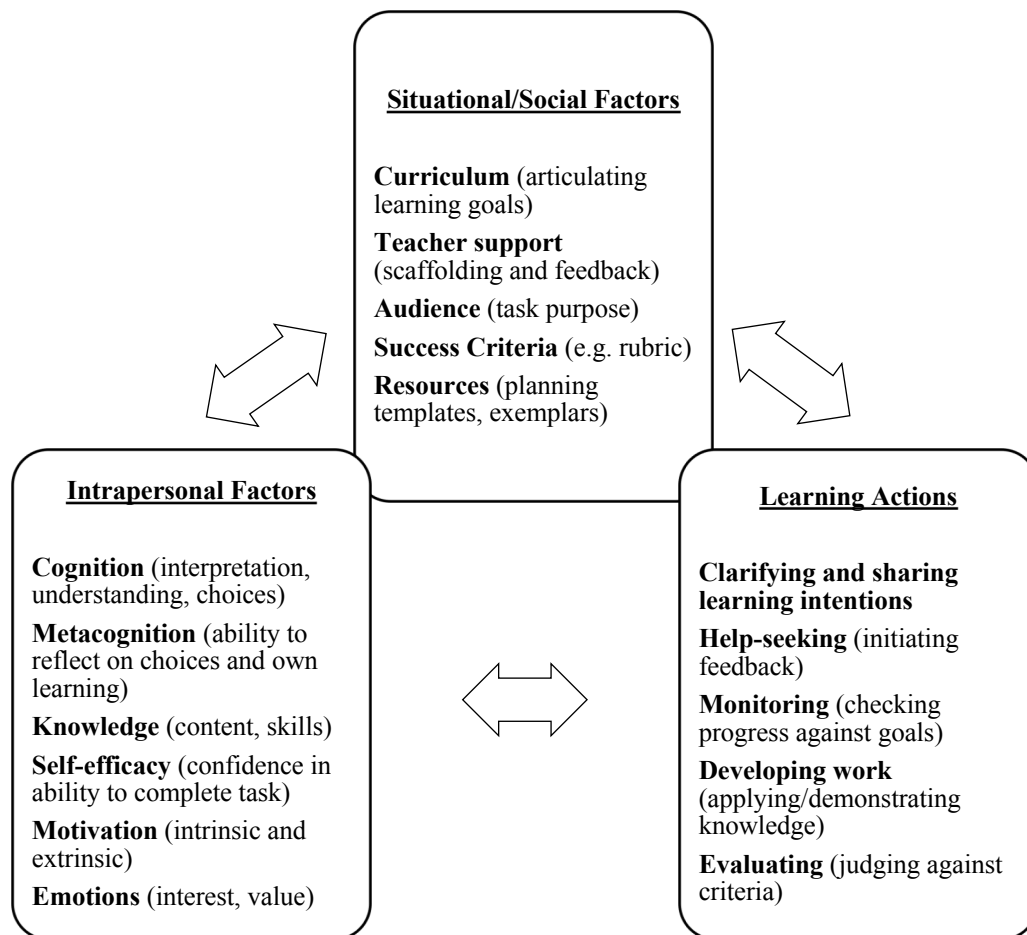
Figure 1: The reciprocal influences of learning. Adapted from *Student-Directed Assessment as a learning process for primary students* (Fletcher, 2015, p. 349)

Writing as a goal-directed process to develop students' SRL competence and strategies for learning

A set of distinctive thinking processes such as planning; monitoring; putting ideas into language; and reviewing frame a writer's ability to compose text (Flower & Hayes, 1981). As such, writing is a goal-directed cognitive process that requires writers to identify high-level goals and supporting sub-goals. From a social cognitive perspective, the writing process illustrates the reciprocal relationship among the learner's interpretation of the task, existing knowledge and skills and ability to reflect on choices (intrapersonal factors); the task requirements and learning context (situational factors) and the learning actions students and teachers take. The present study used a three-phase AaL process—from here on referred to as the Student-Directed Assessment (SDA)

process—to scaffold students' goal-setting steps, thus placing the student at the centre, as a director of the cognitive process. In this study, the AaL process consisted of three phases: *forethought, performance* and *self-reflection.* The forethought phase was constituted by task analysis, goal setting and identification of appropriate learning strategies. The performance phase involved students and teachers in monitoring and regulating students' learning. In the self-reflection phase, students and teachers evaluated the effectiveness of the strategies they had employed and identified the strengths and weaknesses of their approach. Scaffolded by their teacher and a planning template, the students drew on intrapersonal components, such as their knowledge and understanding, and applied these in the processes of writing.

Competence and self-efficacy

Competence refers to "a condition or quality of effectiveness, ability, sufficiency, or success" (Elliot & Dweck, 2005, p. 5), which provides a coherent basis to integrate findings from research into cognitive strategies and SRL (Elliot & Dweck, 2005). Competence depends on intrapersonal factors such as cognition and knowledge (Elliot & Dweck, 2005) and self-motivating beliefs (Zimmerman, 2011). Importantly, a student's perception of their own capability to learn or perform at designated levels—their *perceived self-efficacy*—helps determine what they do with the knowledge and skills they have, and the course of action they pursue (Bandura, 2012). Self-efficacy has been found to influence how much effort students will expend on an activity, and how long they will persevere when faced with obstacles in the task (Schunk, 1995; Schunk & Pajares, 2005). Yet, high amounts of self-efficacy will not produce a competent performance, if the requisite skills are lacking (Schunk, 1995). However, students' perception of control may impact on their competence beliefs (Connell & Wellborn, 1991, cited in Schunk & Pajares, 2005). In addition, students are more likely to sustain apt behaviour directed towards learning when they have a sense of controlling learning and performance (Schunk, 1995).

Methodology

The evidence-base for this chapter's discussion of how SDA as a classroom practice supports learning and teaching derives from two research questions: (1) How do students in SDA groups use learning strategies and develop competence as learners? and (2) Do results in the writing project vary between SDA and Teacher-Directed Assessment (TDA) students?

The study adopted a mixed-methods approach by taking into account the perceptions and reflections of students and teachers as well as assessment results. In applying mixed-methods the researcher sought to *enhance* the understandings from the qualitative and quantitative evidence of learning and allow for *mutual corroboration* (Bryman, 2006) between the participants' qualitative accounts and quantitative data generated through students' planning templates and writing samples.

The school context

The study was conducted as a mixed-methods one-setting practitioner research study involving ten teachers and 256 students (121 boys and 135 girls) from classes in years 2, 4 and 6 (students aged approximately 7, 9 and 11 years), at an independent (non-government, non-religious) school in an urban area of the Northern Territory, in Australia. At the time of data collection, the school had an enrolment of approximately 700 students.

The position of the researcher has been described as being an 'insider-outsider' (Dwyer & Buckle, 2009). As a long-standing member of staff at the school, thus well immersed in the setting, the researcher was predominately an insider. Yet, while the researcher was present when the writing projects were initiated in each class, the researcher was an outsider in the sense that she was not present in each class throughout the entire learning process. This relative distance helped avoid interview participants making the assumption that the researcher already was familiar with their experiences (Breen, 2007). Equally, not being in the classrooms throughout the learning process helped the researcher step outside the situation, which facilitated theorisation (Burton & Bartlett, 2005).

The study was approved by the relevant Human Research Ethics Committee. Informed written consent was gained from the school principal, parents/guardians of the participating students, as well as from the students and teachers themselves. To protect the anonymity of the participants, all names were replaced with pseudonyms before the data was coded and analysed. The participants were assured in writing that they were free to withdraw from the study at any time, without prejudice.

Design and instruments

The study was conducted as a writing project which ran over one school term (ten weeks). By employing a parallel sampling design (Leech, Onwuegbuzie, & Combs, 2011), the study provided a cross-sectional comparison between two groups, each representing year 2, 4, and 6. Of the two groups, the SDA group used a planning template which was collaboratively developed by the researcher together with the teachers. The planning template for each of the three participating year-levels, targeted the relevant syllabus outcomes in the *Writing* strand of the Northern Territory Curriculum Framework for English (NTCF, 2009).

The other group, the Teacher Directed Assessment (TDA) group constituted the control group, which meant that they did not use a specific planning template frame the AaL process, nor were the TDA students given a choice regarding the type of text they would write. However, students in the TDA group were provided explicit scaffolding by their teachers as they engaged in the writing project.

By contrast, students in the SDA group used their specific planning template, which had been designed to scaffold the forethought, performance and self-reflection phases of the learning cycle (Fletcher, 2015, 2017; Zimmerman, 2011). In the forethought phase, the teachers carefully supported the SDA students through the process of setting up the writing project (see Table 1). This required students to analyse the writing task, set partial goals for their writing project and identify appropriate learning strategies. The performance phase involved students monitoring and regulating their learning progress, with support —often in the form of conferencing—from their teachers. In the self-reflection phase, students and teachers evaluated the effectiveness of the strategies they had

employed. In addition, both identified the strengths and weaknesses of their approach. Examples of how students and teachers used the template is provided in this chapter's results and discussion section.

Table 1

Phases of the AaL Process (Fletcher, 2017, adapted from Zimmerman 2011)

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

In addition to the students' planning templates and their subsequent writing samples, the data collection included regular semi-structured email correspondence with the teachers throughout the writing project with structured open-ended questions to prompt reflection. The study was also informed by two iterations of semi-structured interviews with teachers and students. The first iteration was conducted while the writing project was underway. The second iteration was conducted at the completion of the writing project. This gave the students, teachers and the researcher time to reflect on the experience with the benefit of hindsight. All interviews were digitally recorded and transcribed by the researcher using voice-recognition software during the time of data collection.

Data analysis

The qualitative and quantitative data were collected at the same time, but analysed separately. An emerging approach was used to analyse the first round of interviews, which generated the initial set of emerging codes (Lankshear & Knobel, 2004). Further codes emerged during the re-reading of the interview transcripts, email correspondence with teachers, and the planning templates, resulting in some thirty-five codes being identified from the data.

Repeated reading of transcripts generated identification of similar data, which were synthesized and interpreted though social cognitive theory (Bandura, 1986). Through this process of synthesis, the data was narrowed to eight thematic categories (Saldaña, 2013). Intrapersonal factors included: (1) *emotions*; (2) own *preferences* and *choices*; (3) *cognitive considerations* such as reflective learning, strategies and predictions; expressions of (4) *self-efficacy* and (5) *persistence*. Social and situational factors included: (6) *social considerations* such as references to peers, teachers and audience; (7) *value judgements* used to express a sense of authenticity and meaningfulness such as 'real learning'. The behavioural domain of social cognitive theory consisted of descriptive references to (8) *teaching and learning practices*.
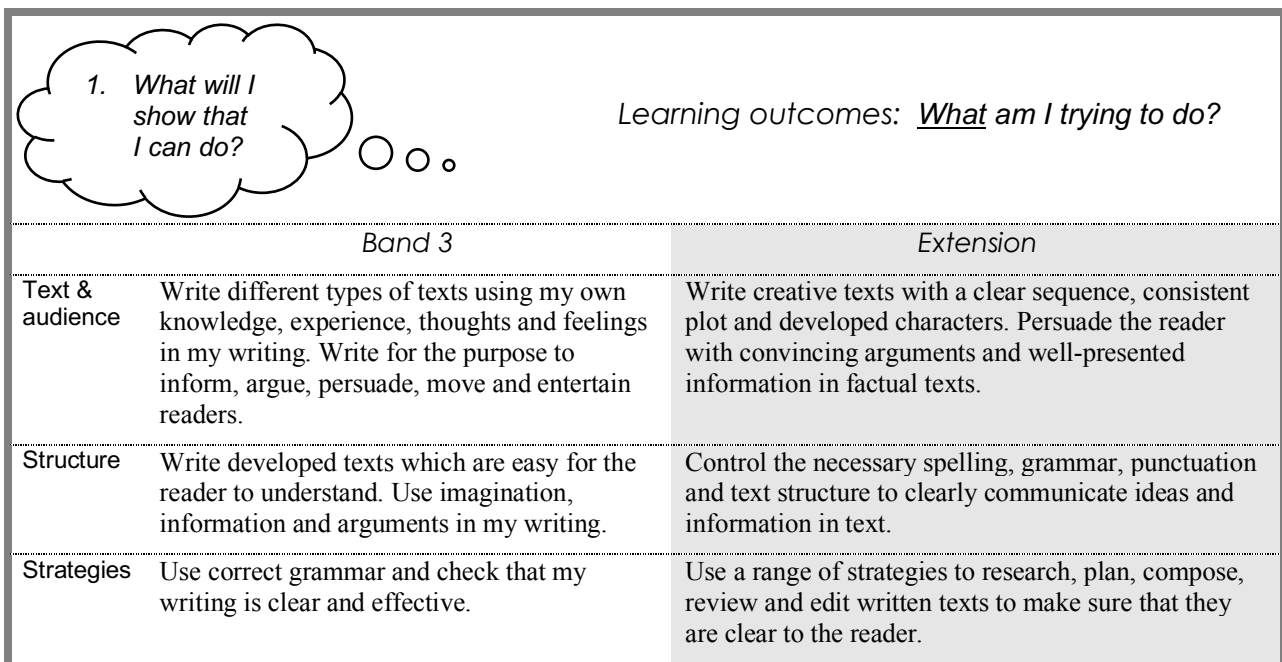
To ascertain whether writing project results varied between SDA and TDA students, the NAPLAN marking rubric (Ministerial Council on Education, Employment, Training and Youth Affairs [MCEETYA], 2008), was used to mark all writing samples and provide the evidence base for the quantitative analysis. Only writing samples from students in Year 4 and Year 6 were included to enable the same students' scores in NAPLAN tests from the previous year constitute pre-test scores in the study. Two markers, who had served on the NAPLAN marking panels in the Northern Territory, double blind-marked all the post-test writing samples. To explore the impact of SDA as a classroom practice, the statistical analysis measured the rate of growth from pre-test to post-test for each group by comparing means, standard deviations and effect sizes at pre- and post-test, post- and pre-test and any interactions.

Results and Discussion

The planning template

The students' planning templates were each designed as a folded A3 sheet, consisting of three main sections to mirror the learning phases of forethought, performance and self-reflection. As illustrated in Figures 2, 3 and 4, the forethought phase was scaffolded in greater detail compared to the other two phases, to help develop students' autonomy as learners from the very beginning of the learning process. To contextualise how students used the planning template to develop strategies and competence as learners, examples follow of how Ruby and Leon, both Year 6 students, used the planning template.

The first forethought step (Figure 2) contained the relevant curriculum learning outcomes, which had been worded by the teachers in a manner that students would be able to understand and use as learning intentions and success criteria for the project. In relation to social cognitive theory, this section of the template represented a situational factor which framed the learning task.

	Band 3	Extension
Text & audience	Write different types of texts using my own knowledge, experience, thoughts and feelings in my writing. Write for the purpose to inform, argue, persuade, move and entertain readers.	Write creative texts with a clear sequence, consistent plot and developed characters. Persuade the reader with convincing arguments and well-presented information in factual texts.
Structure	Write developed texts which are easy for the reader to understand. Use imagination, information and arguments in my writing.	Control the necessary spelling, grammar, punctuation and text structure to clearly communicate ideas and information in text.
Strategies	Use correct grammar and check that my writing is clear and effective.	Use a range of strategies to research, plan, compose, review and edit written texts to make sure that they are clear to the reader.

Learning outcomes: What am I trying to do?

1. What will I show that I can do?

Figure 2: Forethought step 1: Engaging with the curriculum outcomes as learning intentions

On Ruby's and Leon's templates —like most on students' templates— no text was highlighted in this section. However, the teacher interviews indicated that the content had repeatedly been

discussed in class: *"… once they understood what was expected with the criteria—I went through that a couple of times—then they would just fly."* (follow-up interview with Year 6 SDA teacher). This indicates that the template as a situational factor reciprocated with teaching actions. Yet, when students were interviewed, this section did not seem to have attracted their attention, as illustrated by the following segment with two Year 6 students:

Q: Can you tell me; why do you think you had to fill in this big planning template?

Jeremy: So that you can follow your storyline. So that you can plan it out and just write it.

[…] and it will all be easier.

Frances: Uhm, it just helps us with our writing task.

Q: Okay, any other things on there that you think may have been put there deliberately?

(Both students looking at the planning sheet, long pause)

Q: So mainly to help you plan?

Both: Yes.

From a social cognitive perspective, Jeremy and Frances appear to describe intrapersonal and SRL considerations by acknowledging that the purpose of the template was to help them plan and monitor their writing. However, the curriculum section as a situational influence for goal-setting is not spoken of, thus not demonstrating reciprocity with students' intrapersonal domain as a SRL factor.

The second step within the forethought process (Figure 3) provided students with a selection of strategies was provided for students to refer to as they undertook the task of splitting the success criteria into partial goals to monitor progress against. This section of the planning template appeared more effective as a situational factor in prompting a reciprocal relationship with students' cognitive engagement as an intrapersonal factor. Many templates had particular sections or strategies underlined, indicating students' choices, which in turn suggest reciprocity with particular strategies for learning (learning behaviour) they intended to employ to self-regulate their learning.
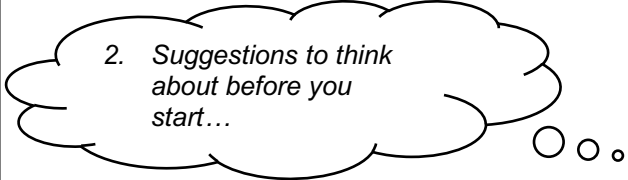
> 2. Suggestions to think about before you start…

Text and Audience	Structure	Strategies
How can I make my text interesting and engaging for the reader?	*How will I organise my writing to make it clear?*	*What planning will help improve my writing?*

• *Which text type will I choose for my writing? How is it structured?*
 	
 • *What descriptions will I use to make my reader understand what I am trying to say?*
 	
 • *How can I engage the reader? Should I use fantasy, humour, suspense, convincing arguments…?*
 	
 • *How will my choice of words affect my reader?*
 	
 • *How can I make my text convincing? Do I need to refer to other texts or show how I found my information?*
 	
 • *How can I be creative and present my work so my reader understands and becomes engaged in the text?*
	• *How should the text type be structured? Do I need to set out an orientation, complication and resolution…?*
	
	 • *What content should I choose to include? What is important?*
	
	 • *Does my writing make sense? Have I used clear sentences, correct spelling and punctuation?*
	
	 • *Have I started my sentences in different ways?*
	
	 • *Do I need to use a range of punctuation (. ! ? , ") ?*
	
	 • *Is it clear who is speaking in my text? What sounds better –dialogue or a narrator? Should I use quotes?*
	
	 • *Is time clear in my writing? Have I used verbs in the correct time form? (I walked, he asked…)*
	
	 • *Have I organised the text into paragraphs?*
	
	 • *Have I used graphics to improve meaning?*
		• *Could I brainstorm ideas?*
		
		 • *Would a sense chart help to plan for how to involve the audience?*
		
		     | *Thoughts* | *Feelings* |
		     | *Sights* | *Sounds* |
		
		 • *Is there a style of writing I can imitate to improve my writing?*
		
		 • *How can I make sure my draft is proofread and checked for spelling, punctuation etc.? Should I make a checklist for myself, work with a friend or use another strategy?*
		
		 • *What tools can I access to improve my writing? Dictionaries? Thesauruses? Computers?*
		
		 • *Have I written down the sources where I found my information?*
		
		 • *Could I use a template as an exemplar to check my writing against?*

Figure 3: Forethought step 2: Suggestions and strategies for the writer to set as goals when planning and monitoring learning.

In the Forethought step 2 section, both Ruby and Leon had put ticks next to 'How will my choice of words affect my reader?'. Leon had also highlighted "Is it clear who is speaking in the text?" and Ruby had underlined sections in the 'How should the text type be structured' dot-point. These choices were further elaborated on in section 4 of the planning template. Prior to section 4, students had to consider an additional forethought step by deciding on the type of text and audience they would target as they developed their writing sample (Figure 4). In this example, Leon chose to write a 'play' for 'children aged 3 to 6', while Ruby had circled 'Poetry' and 'People in Darwin'.

Reconnecting with the reciprocal influences of learning, illustrated in Figure 1, Ruby's and Leon's templates indicated a reciprocal relationship among intrapersonal factors such as students' cognition, knowledge and emotions in the form of interest; situational factors such as audience and resources; and their future learning actions.

Text type: *What sort of text will I write?*

Narrative	Explanation	Recount	Report
Poetry	Procedure	Other: Play	

Audience: *Who is the text meant to engage?*

Children	Teenagers	Parents	Teachers
People in Darwin	People in power	Other:	

3. Think about this as you start planning your work

Figure 4: Forethought step 3: Determining text type and audience

The middle segment of each template was designed as a transitional phase between the forethought and performance phases of the learning cycle. It consisted of a checklist section divided into three sub-headings, *text and audience; structure* and *strategies.* Each sub-heading hade some space provided for students to scribe partial goals during the forethought phase, which then were used to prompt students' monitoring of their progress during the performance phase. Students commenced their writing projects during the performance phase by developing a draft and checking progress against the success criteria. As illustrated in Figures 5 and 6 below, Ruby's and Leon's planning templates reflected considerations they would keep in mind as they crafted their texts. Leon used key words and phrases in the checklist as prompts to himself, suggesting that he used the checklist mainly for himself, to help plan and monitor his own learning. Ruby's checklist is written in a more mixed manner; the first point suggests that she is informing the reader of her plans to write a quatrain poem. The following two points appear more to be reminders for herself.

From a social cognitive perspective, Ruby's and Leon's checklists suggest an intrapersonal SRL focus in their function. However, the content of the checklists appears to emphasise the intended

audience, which is a situational factor. In addition, Ruby's intended strategies illustrate that she had

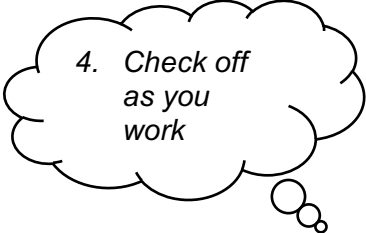considered particular learning behaviours such as 'write a list…' and 'proof read'.

	4. Check off as you work
Assessment checklist: *These are the things I will focus on*	

Text and Audience:	My progress
My poem is a quatrain poem about a storm meant for people in Darwin who have seen many storms. It'll be about a fierce storm.	
Structure:	
It has four lines and every second line rhymes. And it also it'll be very descriptive.	
Strategies:	
Write a list of rhyming words. Proof read it a few times. Make sure I have descriptive words in my poem.	

Figure 5: Transition between forethought and performance: Ruby's assessment checklist of things to
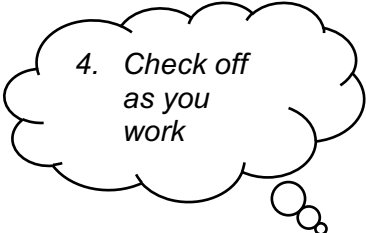
focus on

	4. Check off as you work
Assessment checklist: *These are the things I will focus on*	

Text and Audience:	My progress
Simple language. Teach them a lesson. Never to lie. Exciting voices. Fantasy. Animal Characters.	
Structure:	
Start with a character that doesn't know any thing [sic] good to do. Tells tem a lie. Takes them on a journey. Can't see it. Feels bad.	
Strategies:	
Keep the Audience entertained. Get charaters [sic] to talk to audience. Get audience to do stuff.	

Figure 6: Transition between forethought and performance: Leon's assessment checklist of things to

focus on

The final phase of the cycle entailed students evaluating how well their learning strategies worked and attributing reasons for their level of achievement in the task (Figure 7). In this section Ruby stated that she had chosen to write a poem because she likes reading them, thus again illustrating an intrapersonal dimension. Leon's template indicated that he had wanted to write a play for his younger sister, which again indicates a situational influence and well as intrapersonal factors such as motivation.

Why have I chosen to show my work in this way? [space for responses greater on planning template]

Self-assessment:

5. At the end, think back…

How did I improve my writing skills?   ☆ ☆ ☆ ☆ ☆

How would I rate my finished work?   ☆ ☆ ☆ ☆ ☆

What did I do the best?

What can I improve?

Teacher's feedback:

Figure 7: Self-evaluation phase

Students demonstration of strategies and writing competence

To present evidence of AaL as a classroom practice that develops students' strategies and competence as learners, this chapter focuses on *Vocabulary,* which as illustrated above, is an aspect of writing

that students such as Ruby and Leon gave much consideration to. In the quantitative analysis (like NAPLAN), vocabulary competence was determined by the number of precise words in the writing. For example, one line of Ruby's poem read 'The leaves were dancing in the cold, cruel wind', in which the 'dancing' wind is a precise word, rather than the basic 'blowing'.

The planning templates provided a clear indication of students' awareness of the importance of precise word choices. For example, students identified intentions to use *descriptive words*, *rhyming words*, *adjectives*, and *command verbs.* Of these, particularly the nomination of 'rhyming words' and 'command verbs' indicate metacognitive knowledge activation (Pintrich, 2004) and self-regulation with respect to task analysis and strategic planning (Weinstein & Hume, 1998; Zimmerman, 2008) because they explicitly connect with two specific types of text: poetry and procedures. The students' planning templates also indicated the intention well as goals to *vary vocabulary.*

Comparison of Vocabulary scores The comparison of post-test scores showed a large effect size of greater competence among the Year 6 SDA students (see Table 3), compared to the TDA students in the same year level. This finding suggests that the Year 6 SDA group's writing samples displayed more "sustained and consistent use of precise words and phrases that enhance the meaning or mood" (MCEETYA, 2008, p. 10) compared to the Year 6 TDA samples. This greater level of competence among the Year 6 SDA group was further evidenced when the level of growth from the pre-test to the post-test was compared. In regard to level of growth, there was no difference between the SDA and the TDA groups, at the Year 4 level. However, in Year 6, the SDA group demonstrated twice the level of growth compared to the TDA group (see Table 4).

Table 3

Difference between SDA and TDA students' pre-test and post-test scores in Vocabulary

		SDA		TDA		
	CRITERIA	Mean	SD	Mean	SD	*d*
Yr. 4	Vocabulary (pre-test)	2.18	.38	2.21	.41	-.08
	Vocabulary (post-test)	2.89	.66	2.93	.59	-.06
Yr. 6	Vocabulary (pre-test)	2.66	.74	2.43	.34	.43
	Vocabulary (post-test)	3.41	.96	2.70	.89	.77

Table 4

Difference from pre-test to post-test in students' Vocabulary scores

	CRITERIA	Post-test		Pre-test		
		Mean	SD	Mean	SD	*d*
Yr .4	Vocabulary (SDA) (n = 40)	2.89	.66	2.18	.38	1.37
	Vocabulary (TDA) (n =29)	2.93	.59	2.21	.41	1.44
Yr. 6	Vocabulary (SDA) (n = 76)	3.41	.96	2.66	.74	.88
	Vocabulary (TDA) (n = 84)	2.70	.89	2.93	.59	.44

Overall, as indicated by the planning templates, students demonstrated the ability to strategically plan by stating the intention to use precise vocabulary in their writing. In the case of the Year 6 SDA group, this intention resulted in substantially higher marks in the criteria of Vocabulary, compared to their peers in the TDA group. This finding points to the positive influence of goal-setting as an SRL competence has on learning (Flower & Hayes, 1981; Harris & Brown, 2013; Zimmerman & Schunk, 2011).

Teachers' situational influence on learning

The findings suggest that the AaL project prompted students to actively engage as learners and to seek help to inform their learning, at time when they were receptive to feedback. Notably, the planning template may have served as a 'challenges springboard' for both teacher practice as well as student learning, by requiring students to take on an active role in engaging in the detailed, explicit planning process. For the teachers, this meant giving more explicit instructions than they normally would, as part of the emphasised forethought stage of the learning process. For the students, the templates appear to have presented detailed planning considerations they needed to address as part of the forethought phase, prompting them to seek help.

Point-of-need teaching

Findings from the present study highlighted the teachers' practice in respect to providing

students with individual feedback within the students' zone of proximal development (Vygotsky,

1978). The teachers' use of learning dialogues and targeted, small-group conferences to provide

students with formative feedback emerged as a feature of the AaL process:

> I did small groups to start off with, to get an overview and then... yeah... a couple of sessions going through each
> part [of the planning template]. Some of them, I still... some of the kids still didn't quite understand, and more
> the fact that... it was just new to them. I'd go through each part again... especially with the bottom part, the
> strategy they used. Some of them found that bit hard to grasp. And did not realise that they are doing these things
> [applying strategies to solve a task] anyway... […] I was conferencing with them, with their writing pieces,
> saying: okay, so what did you do? Did you look through your work before you came to me? So I had to talk
> them through it. But then we wrote down things they did.
>
> Follow-up interview with Maria, Year 2 teacher

From a social cognitive perspective, Maria's description above illustrates how AaL is a

process that facilitates point-of-need teaching as both a situational and behavioural factor. The

students' help seeking appear to have prompted Maria to have a dialogue with her students about

learning strategies, clearly aimed at informing future learning. Her reference to the "couple of

sessions going over each part", conveys how she guided students as they endeavoured to address

the proximal learning goals and the overall learning outcome from the syllabus.

Time

From the interviews and email correspondence with teachers, three elements—time,

confidence and experience—stood out, indicating important differences between how Year 4 SDA

teachers and the Year 6 SDA teachers had approached the writing project. From a social cognitive

perspective, this highlighted how teachers' intrapersonal influences, particularly their sense of self-

efficacy influenced both their teaching behavior and the situational context in respect to how they

conducted the writing project in their classrooms. While the SDA teachers in both Year 4 and Year 6

appeared to allow a similar amount of time in the forethought phase; clear differences emerged in the later phases. Monica, a Year 6 SDA teacher noted:

> The project took longer than expected. We spent practically the whole term on the project. I do not think it could have been done any faster.

While all three Year 6 SDA teachers found that the writing project took longer than anticipated, none expressed concern about this. Instead, the Year 6 SDA teachers commented on how they could see that the students were engaging in deep and meaningful learning, which they reasoned benefitted the students. In an earlier email, when reflecting on how students had developed their drafts Monica noted:

> Students really surprised me and worked well on their writing activity. [Jack] said that this was the first time he had written such a long story. Students like [Charlie], who are normally weak in writing skills, did well and never complained about having to write a recount. It really helped to have the assessment criteria (outcomes) that they had written themselves to refer back to.

Monica's quotes suggest that she extended the time originally allocated for their students to complete their writing task, because she felt confident in her judgment of indicators suggesting that the project benefitted students' learning. In particular, Monica's comments above resonate with earlier findings which suggest that students' perceived self-efficacy influences effort, persistence and motivation (Bandura, 2012; Schunk & Pajares, 2005). From a social cognitive perspective (Bandura, 1986) Monica's comments allude to how intrapersonal factors such as her own understanding, confidence and motivation reciprocated with learning actions and the classroom context.

Intrapersonal factors were also significant in respect to the Year 4 SDA teachers, who had less experience and who expressed concern in their interviews about having time to fit in the curriculum. Consequently, the Year 4 SDA teachers—in contrast to the Year 6 SDA teachers—allocated much shorter time for the writing project. This presents a reliability issue in respect to fidelity of implementation, and limits the statistical significance of this study's findings. Nevertheless, the evidence of learning generated in the study is informative. The aim from the outset

of this mixed-methods study was to gain a nuanced understanding of how students' learning is shaped in a process that uses assessment as a meaningful learning process. However, future research is needed to explore this in more detail.

Conclusion

The study reported in this chapter originated from the researcher's practice-based belief, developed over years as a primary teacher, that AaL is a classroom practice that helps students become autonomous and competent as learners. Underpinned by social cognitive theory (Bandura, 1986), this chapter presents a detailed discussion of how SDA students engaged in their learning as part of a three-phase AaL process. The study emphasised the forethought phase of the learning process by presenting students with a writing task that scaffolded them to control and develop their thinking and understanding (cognition), their perceived ability to complete the task (self-efficacy), and what strategies they would use to plan, and monitor their learning. The process was scaffolded by the teachers and framed by a planning template designed to emphasise the forethought phase of the learning cycle.

The findings paint a complex picture of AaL as a scaffolded and highly individualised form of goal-directed learning that is shaped by the reciprocal relationship among intrapersonal, situational and behavioural influences. Findings the cross-sectional study suggest that the AaL process aided students' engagement in metacognitive processes such as monitoring understanding, organising ideas and checking for consistency. This entailed students making strategic choices, with the support of the teachers, as the students planned and monitored their learning, thereby demonstrating SRL competence. As a consequence of students' actively directing the AaL process (Dann, 2002; Earl 2013; Fletcher 2016), teaching became individualised and tailored around the students' learning needs. This in itself constitutes an auspicious pedagogical approach, which fuses SRL (Zimmerman, 2011), student choice, competence and motivation theories (Elliot & Dweck, 2005) into a structured format.

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