

Learning through Reflection. SPROUT: A Schema to Teach Reflective Practice

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Abstract

Incorporating reflection into practice is an essential acquired skill and has been linked to the strengthening of professional identity, where the ability to reflect is essentially the development of self-awareness; a way of thinking and ultimately learning from experience. The authors introduce the acronym **SPROUT** as a structure for higher education students who are learning to be reflective learners. The acronym represents a schema for written and oral approaches and is designed to support professional development in multiple contexts. **SPROUT** is formed by combining the initial letters of the component words and serves to simplify the complexity of a multipart process to be enacted when being reflective. As a mnemonic device **SPROUT** represents **S**ituation, **P**ast experience, **R**ead and **R**efer, **O**ther influences, **U**nderstanding and **T**ake it Forward. Following the implementation of SPROUT with a 1st year Bachelor of Nursing cohort, reflective scripts were reviewed for content and quality. Additionally educators provided feedback. Preliminary conclusions about the efficacy of this approach for learning to be reflective suggest that students were demonstrating a developing self-awareness.

Keywords: reflection, higher education, mnemonic, experiential learning, self awareness

Learning through reflection. SPROUT: A schema to teach reflective practice

Incorporating reflection into practice has been linked to the enhancement of professional skills (Bulman, Lathlean, & Gobbi, 2012) and ultimately, the strengthening of identity (Chong, 2009). SPROUT has been developed as a practical learning experience, and being an acronymic form, is a simple structure to support higher education students who are learning to be reflective.

The ability to reflect is essentially the development of self-awareness (Sale, 2005; Stirling, 2015) and knowing (Howatson-Jones, 2013 ; Johns, 2013). Through personal realisation meaning is discovered (Cottrell, 2013) and future direction is shaped (Stonehouse, 2015). Being able to self reflect is known to facilitate the integration between coursework and practical learning (Bulman et al., 2012; Chong, 2009).

The approach taken for the construction of SPROUT has acknowledged the framework of learning ecology (Bronfenbrenner, 1994; Brown, 2000), and is therefore representative of a collection of diverse elements that are interdependent and adaptive within the learning process. Components such as learner attributes, previous experiences and the influence of critical people, all within the learning environment are considered as directly influencing learning outcomes (Botha & Coetzee, 2016).

An acronym is essentially an abbreviation that is formed in such a way that it becomes a 'pronounceable' word (Hwang et al., 2014). SPROUT has been formed by combining the initial letters of component words and serves to simplify the complexity of the multipart process. The mnemonic device of the word SPROUT therefore represents **S**ituation: describe the event; **P**ast experience and **P**revious learning: what previous learning relates to this situation; **R**ead and **R**efer: what evidence helps to inform this situation; **O**ther influences: both internal and external on self and others; **U**nderstanding: collate the information from previous stages to express new understanding; and **T**ake it Forward: how will this information influence future learning. SPROUT focuses on being reflective and represents a schema for both written and oral approaches.

If considered historically, the concept of reflective practice is not new, with initial references in the literature being from Dewey in 1933 (cited in Dewey, 1986). As an educational methodology, the approach was further actualised by Schon (1983). There has been an enthusiastic adoption of reflective practice in higher education where it has been implemented within both undergraduate and post graduate curricula (Nguyen, Fernandez, Karsenti, & Charlin, 2014). Utilization spans the disciplines of health, education, business and construction (Mann, Gordon, & Macleod, 2009; Nguyen et al., 2014; Roberts, 2009). We submit that at the core of reflection is the 'self' with the goal of reflective practice being that of self-awareness (Stirling, 2015). Thus growth is a resolving of dichotomies, and considered as the development and understanding or the realisation of one's capabilities (Maslow, 1998).

To learn using reflection occurs when new understanding or knowledge is acquired or something already known is modified by experience. Cognitive Psychology in particular focuses on how people think, understand and ultimately know (Atherton, 2013). Both Piaget and Vygotsky focus on the individual's active construction of knowledge (Atherton, 2013; Huitt & Hummell, 2003) and thus the promotion of developmental change. Piaget (1958) presents cognitive development as a staged reorganisation of mental processes, describing schemas or ways of organising knowledge where meaning is found through interconnected sequences. Further to this, Vygotsky (1978) states that cognitive development also needs to consider the social and cultural context in which it is embedded.

Moreover, informational processing theory (Atkinson & Shiffrin, 1968) in particular presents a way for reflective learning to occur, focusing on the capacity of the mind in terms of the amount and nature of the information that it can actually process. This occurs when an external stimulus enters the sensory memory, is processed via the short term memory and through repetition may or may not be encoded into the long term memory for retrieval at another time. The concept presented via the acronym SPROUT encourages multisensory visualisation via the sense of sight into the image of the garden thus evoking connotations of growth in understanding and ultimately self-knowledge.

The application of acronyms is a mnemonic strategy where a systematic procedure is enacted in order to enhance memory (Almeida, 2008). Within the context of learning, students state that the use of acronyms is helpful (Stalder, 2005). Whilst acronym mnemonics are related to rote learning strategies (Albert, 1996), it is suggested that when faced with multiple perspectives this may assist the learner to order their focus (Wilding, Rashid, Gilmore, & Valentine, 1986). Such that research in the use of an acronym mnemonic method for undergraduate medical learning, albeit in combination with visualisation, was able to demonstrate the retention of processes for medical diagnosis (Wilding et al., 1986).

Successful use of an acronym has also been demonstrated with students of music (Townsend, 2012). For example, the acronym of **PRACTICE** supports a focus on **P**reparation of **R**elevant **A**ctivities **C**auses **T**echnical **I**mprovement, and, **C**orrect **E**xecution. The use of the acronym **CHANGE** was implemented to promote medical student learning of behavioural change interviewing (Martino, Haeseler, Belitsky, Pantaloni, & Fortin, 2007). **CHANGE** supports the process of: **C**heck perspective, **H**ear what is said, **A**void unsolicited advice, **N**ote priorities, **G**ive feedback and **E**nd the interview.

Based on bioformational processing theory (Atkinson & Shiffrin, 1968), **SPROUT** has been constructed as a schema. The sequence is grounded in the development of mental processes (Piaget, 1958), and is presented as an interconnected and staged process via a sequential acronym.

Situation. The initial step of SPROUT is to describe the event. Participants are directed to describe everything that is important to the event that they are reflecting upon. This account should be factual and inclusive of all relevant information and in order to encourage transferable cognitive development, also encompass the social and cultural context (Vygotsky, 1978).

The importance of subjective information is also emphasised for this descriptive phase. Memory can fade and emotions tend to reduce in acuity with the passage of time, therefore it is recommended to begin a reflective process as close to the event as possible.

Past experiences and Previous learning. In this, the second phase of SPROUT, the recalling of knowledge or experience from a prior situation or from theoretical learning is encouraged. In 305 BC, Aristotle, in the 'Laws of Association, wrote about active recollection or connection to previous knowledge such that it has the ability to influence the behaviour of learner in the event being reflected upon. It is suggested that through associations that are similar, contrasting, contiguous and frequent, the mind will store or recall information that is associated in some way with previously experienced or recalled information (Atkinson & Shiffrin, 1968). Indeed, "Not a single learning theory propounded in this century has failed to base its account on the associative principles" (Weimer, 1973, p. p. 8). Knowles, Holton, and Swanson (2005) delineate six assumptions specific to adult learners and embedded within these is a focus on past experience, such that it is able to elicit a deeper response in order to understand the meaning behind the learning.

When developing the schema, it was tempting to label this step 'Past learning'. The decision to expose prior learning with cues for experiential and theoretical learning was made. The concern was that 'Past learning' would be exclusionary to the novice learner who might not conceive some past or previous experiences as actual learning.

Read and Refer. This stage concedes the multiplicity of sources of information for the learner where knowledge is positioned between the metaphorical elevated realms of empirical research and the multiple and sometimes ambiguous perspectives that occur in professional practice Schon (1987). Thus the learner is encouraged to seek knowledge that is inclusive of credible research and also discussion with those with relevant experience. This implies action by the learner, integral to knowledge attainment (Piaget, 1958; Vygotsky, 1978). The importance of forming professional decisions that are supported by particularly peer reviewed research suggests that this stage could be positioned anywhere along the SPROUT continuum. It is acknowledged that

this step may occur more than once during the process of reflection. Learners are encouraged to be discerning about the sources of information they seek when challenging and extending their understanding of the situation being reflected upon. Mantzoukas (2008) cites the complexities of sourcing knowledge in practice as it is often not linear or orderly and purports the integration of research and reflection.

Other influencing factors (internal and external). This phase incorporates internal (self and other) and external (self and other). The journey of self-realisation and thus understanding of personal capability (Maslow, 1998) begins with the self, through awareness within the processing of actual experience.

Internal: One's personal bias, beliefs and values are acknowledged as influencing situations such that Mezirow refers to these as 'meaning perspectives' (Mezirow, 1990). This process includes self-examination and the perspective of others involved in the situation. The aim is to challenge what is traditionally considered as being internally true for the individual. The challenge arises when examining these truths in varied contexts within practice. This phase is in keeping with the notion of Kolb and Kolb (2005) who state that deep and honest introspection leads to the integration of new knowledge. It is appreciated that it is impossible to know another's personal beliefs; at the very least however, this stage asks for consideration of these in the context of what is being reflected upon.

External: This step facilitates acknowledgement of how factors seemingly external to a situation can still posit an influence. Examples of these can include, though are not limited to, the individual's education or their social situation.

Understanding. This stage is the culmination of prior ruminations and encourages that new understanding be actively expressed. Much deeper than a description, the understanding stage brings together information that has been gathered in the previous stages and considers this information as a whole as it relates to the situation or event being reflected upon. In completing this stage, the learner recognises the whole as being different from the sum of its parts (Hergenbahn & Olson, 2005) as the new knowledge is constructed.

Taking it forward. A goal of reflective practice is professional and personal growth and this is an evolution in thinking. This stage therefore encourages the learner to consider what new knowledge can be taken from this reflective process. Clouder (2000) cautions that the introspective nature of reflection does not necessarily result in professional growth and argues that facilitating professional dialogue should be incorporated as part of the reflective process. In this stage, taking new knowledge forward is also about sharing new knowledge.

The aim is to present **SPROUT** and also a preliminary evaluation.

Participants

Following the implementation of the **SPROUT**, reflective scripts completed by a group of 1st Year undergraduate nursing students (n=9) were reviewed to firstly consider their application of the acronym and then the meaning conveyed within the actual reflections. Additionally, educators (n= 6) who had implemented **SPROUT** into their pedagogical environments were asked about the experience.

Materials and Procedures

Ethics approval was granted by the Southern Cross University Human Ethics Committee (ECN-16-061). A qualitative design was constructed to collect and analyse the reflective scripts and the educator feedback

The acronym methodology was embedded within an assessment item within an educational environment. The learning outcomes to support this were (i) the demonstration of a developing ability to critically reflect on practice, (ii) being able to demonstrate safe practice in nursing skills and (iii) applying knowledge acquired from current and prior study.

Prior to the assessment, students had access to an online lecture where reflection and the concept of **SPROUT** was presented. Each then participated in a tutorial where they were asked to provide a reflection using **SPROUT** following the presentation of a simulated situation. Instructors provided immediate feedback. Students were then required to complete the assessment using **SPROUT** after their 'real world' practical experiences. Student scripts were de-identified prior to analysis. Reflections were reviewed for content, quality and evidence of the use of the methodology and approaches as presented in the acronym.

Eight educators were invited to participate in the review via email. The research aims were conveyed, and each provided consent in written format. All of the educators had participated in a session introducing **SPROUT** and were also involved in discussions as to where and how **SPROUT** would be introduced into the undergraduate nursing curriculum. Each shared their experiences via responses to open ended questions or simple feedback via email or interview as required. The questions focused on the quality of the student reflections and the application and use of the acronym. Six educators participated in the research providing both feedback and commentary on examples from excerpts of student reflective writing.

A grounded theory approach was utilised (Polit & Beck, 2014), where data was coded and combined into themes.

Results and discussion

The reflective activities were focused within a range of nursing experiences. The situations included; the support of a patient recovering from a haemorrhagic stroke, working in an intensive care unit, assisting in a wound clinic, caring for a patient with advanced cancer, infection control and assisting patients with hearing and speech impairments. Additional contexts were; coping with various types of equipment and technical issues and the ability to assist patients who have symptoms associated with multiple comorbidities.

Activities ranged from the first day of student nursing to those where students had completed a number of practical experiences. As per the educational objectives, students provided reflections in an online format.

Student Reflections

Student reflections were reviewed with a focus on the steps of the acronym and the depth of the meaning presented.

Situation.

With a focus on the various situations, students mostly provided fulsome descriptors about the patients and the various conditions.

.....feeling more comfortable working within the team and tending to the patients placed in our care (Student A).

Some also related their own feelings; particularly if the situation was perceived as confronting.

....seeing the people in the condition they were in and the level of care that they were going through was very confronting for me (Student C).

....it (the situation) has challenged my communication skills (Student G).

It shocked me at first as she got in there with a scalpel and started to cut off the skin around the wound (Student H).

.....feeling a bit overwhelmed and a little anxious (Student I).

Some students showed a level of insightfulness, such that *....a lesson that outward appearances may not always convey what is happening beneath the surface of your patient (Student A).*

Previous Experience.

When focusing on previous experience reflections included narrative about current thinking. For example, an identification with 'self', even extending to expressing 'guilt' when faced with lives cut short due to illness as a result of lifestyle type causations.

I feel as if I should have contributed a lot more to the world in the 29 years that I have been alive (Student C).

.....challenged my attitude about how easy it can be to become judgmental of someone's lifestyle choices (Student A).

Previous experience was viewed as personal experience.

I can relate to their frustration and their feelings of losing independence (Student B).

Being confronted was expressed as a part of perceiving that the student nurse had not previously experienced the particular situation.

I have very limited experience with this.....which is why I found it confronting (Student C)

Previous experience was also related as changes as healing progressed, *I could really notice how much the swelling had gone down since Friday (Student D)* and also previous placement experience (*I have cared for a couple of patients during previous placements (Student E).*

Previous family experiences were also related

I learnt to speak clearly and slowly and to look directly at him (Student G).

Read and Refer.

Strategies for Read and Refer included review of textbooks, guidelines and evidence based strategy. Some students suggested, as a future strategy, their need to read about the conditions prior to the experience, rather than enacting this type of research during the actual experience.

Other Influencing Factors.

Reflections considered the impact of their empathy for the patient related as a reaction to the 'loss of full mobility' and also seeing 'his frustration with his condition' (Student B).

Personal reactions were acknowledged as influential.

....one of my own negative feelings about smoking followed by

I don't know whether I will ever have no conflicting feelings about lifestyle choices such as this (smoking) (Student E).

Almost as overreaction or identification with the patient was expressed as

I could really see and feel the sense of frustration this patient felt (Student G).

Understanding the situation.

This was mostly expressed related to self via previous experience. In other words I understand because that has

been my experience too.

Experiencing a loss of mobility and independence myself, allowed me to really empathise (Student B) such that the ability to help was expressed as being enabled because the helper had also experienced the situation.

One's own beliefs were then presented as the basis for understanding.

I understand that being confronted by the intensive care unit is related to my own beliefs about my own life and what I have achieved (Student C).

The experience itself enhanced confidence and reinforced understanding.

I really got a bit of a buzz and was excited to see that her legs had reduced in swelling. I can see how important it is to have that pressure to reduce the swelling (Student D).

Taking this forward.

Students considered this mostly as change to their perceptions

....importance of not allowing just one area of assessment to colour and cloud your view of the patient (Student A).

.....more holistic patient assessment that can inform and more accurately guide your nursing intervention (Student A).

Realisation.with good support and rehabilitation strategies, improvement can be possible (Student B)

Understanding (own need to research) the illnesses and treatments better will help me deal with the feelings of being overwhelmed by seeing people so young with such a high level of care (Student C).

New ways of viewing nursing care.

The main thing.....is to not get overwhelmed by the people in the intensive care unit based on my own feelings (Student C).

I will have more confidence in advising clients (Student D)

I have to work through my own preconceptions and possible biases (Student E).

I look forward to learning new skills (Student I)

Challenge to perspective.

I have been entrusted with their care and as is such, to deliver the best care that I am capable of without losing site of compassion and the empathy that is needed in providing that level of care.

Feedback from the educators

The analysis of the feedback provided by educators revealed four themes.

Do nurses practice reflection?

Two respondents suggest that, given the students' lack of witnessed exposure to reflective practice by nurses whilst in the clinical setting, undergraduate nursing students often struggle with the concept of incorporating reflection as a tool for learning.

One respondent suggests that:

Experienced nurses undertake reflection in their clinical practice constantly, but because they do this subconsciously or informally over a cup of coffee in the tea room, they don't appreciate the value of reflection when it comes to constructing new knowledge or understanding their current practice. So when students are asked to provide reflections on their practice, they don't see it as something that nurses do, as it is often not visible, or is done tacitly. (Educator 4)

Trede and Smith (2012) support this, stating that reflection is invisible which adds to its layered and practical complexities.

One respondent's comments relates to a disparity of reflective practice experience amongst staff which may present problems with adequately offering guidance to students during feedback.

The facilitators themselves may not have ever had to complete written reflections. This results in them not truly understanding the value in this practice or having the understanding of how best to guide students with it. (Educator 5)

Harvey, Coulson, and McMaugh (2016) substantiate a number of theoretical assumptions regarding reflective practice and conclude that reflective practice can be taught with the use of strategic interventions and scaffolding. An observation of one respondent that some educators work against this approach to reflective learning is suggested by the following:

In all it's a large cultural shift that needs education and some universities that we share placement facilities with do not request students to do written reflections so the facilitators can sometimes promote this attitude towards our students of it not being as important or an additional workload. (Educator 5)

Diarrising be gone – they are learning!

All of the respondents found the reflective entries made by students were more purposeful when using **SPROUT**. They note that prior to the introduction of **SPROUT** student entries were more like journal entries. Milinkovic and Field (2005) describe clinical journals as an opportunity for free-flowing creative expression about personal

experiences. Whilst Harvey et al. (2016) acknowledge reflection can be engaged in at varied levels, they also add that there is a process involved where the reflective practitioner is encouraged to draw on perspectives from multiple sources if a holistic or ecological understanding is to be reached. One respondent commented:

Previously students would submit diarised accounts of their day without truly looking at the how and why of their actions. By giving students a framework where they can see what they know and recognising learning needs the reflective process becomes an effective learning tool. This reflective format and process will become embedded within their thinking and will help to frame their lifelong learning. (Educator 1)

Demonstrating a link to praxis (Harvey et al., 2016) and acknowledging the perspectives of multiple sources as a means to enhance professional development, one respondent stated that:

They incorporate evidence and literature where appropriate that further demonstrates they are not only reflecting but referring to literature to further enhance their practice. (Educator 5)

The use of SPROUT enabled students to present thoughtful accounts and reflections of professional practice verbally also. As is often the case with reflections that are written, the learning becomes writer centric and it is predictable that this may often be realised by the reflective practitioner's improved professional practice and not the wider professional community of practice. Sharing verbal reflections enabled by the use of SPROUT however can serve to enhance professional knowledge of self and others.

Students seem to relate to the SPROUT acronym and explain a reflective practice clinical episode in a structured approach which some students were happy to share with other students. This enhanced the learning for all students who were present for this discussion. (Educator 2)

Thinking more deeply using SPROUT is not easy and it takes time.

Situational factors such as a lack of time and interruptions are cited as being a barrier to the adoption of reflective writing (Langley & Brown, 2010; Stirling, 2015). Respondents commented on this being an issue with some student users of SPROUT also. Respondents were clear though that SPROUT remains an important process for learning despite a perceived lack of value or prioritisation by the students.

Some students complain about using the Sprout format, but I think that may be because it actually makes them think more deeply about their knowledge and ability, and how they incorporate these into their clinical practice. (Educator 4)

A respondent shared that a particular student was not enthused about SPROUT expressing that the reflection model he used previously was more attuned to his way of thinking.

He is an engineer previously and constantly mentions that he thinks in a systematic and process driven way. It was interesting that he commented that he didn't understand SPROUT as he doesn't think "that way" and I commented that maybe that is why his reflections were not as in depth or insightful to me as he thought, and that maybe thinking differently is a good thing and will bring out other areas of his practice that needed development. After his placement finished he did comment that he now sees the value in SPROUT and it pushed him to think in a different way than he is used to. (Educator 5)

SPROUT has delivered professional development.

The use of reflective writing is the development of self-awareness (Stirling, 2015). A number of respondents acknowledge this learner outcome is enhanced when students use SPROUT to guide their reflections.

...students who have used sprout correctly have displayed greater insight into their practice and recognised areas for development at a greater level than those who have used other formats for their reflections. (Educator 1)

And from another respondent:

The quality is much better in my opinion when students use a reflective practice framework of some sort but especially when they use SPROUT as it gives them much more structure and guidance to stay focused. (Educator 5)

Summary and future direction

SPROUT was embedded into an undergraduate nursing curriculum. The actual reflections demonstrated a systematic utilisation of the schema. Encouraging were their perceptions about their own tempering of compassion and empathy and how these impact upon actually becoming a nurse. Evident also was the transference of knowledge into the context of discipline specific practice, showing that the students were experiencing an identifiable relatedness with their course work.

Importantly, students did comment about the need to be more proactive about the integration of evidence (Read and refer). The reflections about this were encouraging, showing students were actually reviewing what they might actually need to enhance their own development. In general, they provided genuine reaction to the human experience of patient care.

Overall, educators reported that the structured approach of the acronym was helpful for students learning to be reflective. This group alluded to previous struggles with student reflective ability, stating that this were

somewhat 'linear'; being a more 'diary like' listing of tasks. The educators were clear that they did observe a deeper engagement where students demonstrated insight about their experiences and what they were learning.

The nature of this preliminary evaluation of SPROUT has provided information upon which to make a preliminary judgement about the efficacy of this approach as a structured and practical methodology for the teaching of reflection. Students were able to write and speak openly, comprehensively and confidently about their learning. With this group of 1st year nursing students SPROUT was shown to be supportive of teaching and learning approaches particularly within experience learning.

SPROUT has been designed to encourage contemplation and discussion and to promote a climate where educators can respond and work more closely to achieve learning outcomes. The development of SPROUT has intentionally considered a wider disciplinary application and interaction, therefore further validation with other disciplines and practices is now recommended.

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