I See, I Think I Wonder: An Evaluation of Journaling as a Critical Reflective Practice Tool for Aiding Teachers in Challenging or Confronting Contexts

Geoffrey M. Lowe
Edith Cowan University, g.lowe@ecu.edu.au

Peter Prout
Edith Cowan University, p.prout@ecu.edu.au

Karen Murcia
Edith Cowan University, k.murcia@ecu.edu.au

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Abstract: In October 2011, five selected Western Australian teachers took part in a teacher mentoring project in Tanzania. The teachers spent a month embedded in local primary and secondary schools, working collaboratively with their Tanzanian counterparts. As a strategy for making sense of their experiences, each teacher was asked to maintain a reflective journal, using the Harvard Visible Thinking Routine of 'see, think, wonder' as a critical structure for guiding their journal writing. The purpose of this article is to discuss the effectiveness of journaling for teachers in challenging teaching situations, and the usefulness of the Harvard approach in structuring the reflective process as part of an action-based reflective model. As such, the article examines not just the role of critical journaling in helping the participating teachers make sense of their African experience, but the potential of this approach in general in helping teachers faced with challenging or confronting teaching contexts.

Introduction

Journaling is a widely promoted tool for guiding critical reflection among service providing professions such as teaching (Conway et.al., 2012; Churchill et.al., 2011; Contich, 2006) and nursing (Epps, 2008; Tilman, 2003; Ruthman et. al., 2004; Kessler et. al., 2004). Churchill et.al.,(2011) and Contich (2006) advocate critical journaling as a valuable process for beginning teachers. They describe journaling as an important survival strategy for beginning teachers endeavouring to make sense of the theory previously learned in the context of the school environment. Campbell et.al. (2011) and Bullock and Hawk (2010) claim that journaling is an essential component for improving practice for teachers seeking promotions or moving schools. Journals can provide concrete evidence of professional growth and development. However, can journaling also be employed as an effective reflective tool in contexts where experienced teachers are confronted or challenged by events or situations outside their normal working environments? This article reports on a cross-cultural teacher mentoring project in Tanzania in which five Australian teacher participants were asked to use a journal to document and reflect upon their experiences. The article examines the role of journals and issues associated with journaling before evaluating their effectives as reflective tools in the context of this project and other challenging or potentially confronting settings.

Background

Tanzania lies almost parallel with Australia on the opposite side of the Indian Ocean. As a 'neighbouring' country, Western Australia (WA) has been developing significant education ties with Tanzania. A growing number of Tanzania students are attending WA universities, and non-profit organisations such as the Australia Tanzania Young Ambassadors operates a network of over 20 schools from both countries involving high level student exchanges and support. In addition, WA based community service organisations such as Rotary regularly fund Tanzanian school projects such as the building of classrooms and the provision of wells on school grounds.

In October 2011 as part of a joint project between Rotary, Edith Cowan University (ECU) and the Australia Tanzania Association, five selected Western Australian (WA) teachers volunteered to take part in an international teacher mentoring project in Tanzania. The five teachers were embedded into a number of Tanzanian primary and secondary schools over a period of four weeks, with the aim of having WA teachers work alongside Tanzanian colleagues in a collaborative 'two-way' sharing role. The teachers were guided by a research team from Edith Cowan University, all of whom have had prior experience working in East Africa.

The project aimed to build capacity in both Tanzanian and Australian teaching and learning through the use of a relational mentoring model. The WA teachers were presented to Tanzanian schools not as experts but rather as colleagues. As this project represented a 'coal-face' collaborative approach to educational capacity building, the research team were keen to locate a suitable method for evaluating the project, and examining its impact on the WA teacher participants. The research team were aware that the WA teachers would be working outside their comfort zones: this project could impact just as significantly upon the Australian participants' beliefs about teaching and learning as their Tanzanian colleagues. As such, some of the research aims were:

- To assess the impact of the cross-cultural exchange upon the WA teachers' perceptions of the nature of teaching and learning,
- To examine whether the participating teachers reconstructed their personal theory of teaching following participation in the project.

Given these research aims, the research team decided to employ critically reflective journaling as part of an action inquiry research approach. Using the Harvard Visible Thinking Routine of 'see, think, wonder', each teacher participant was asked to keep a daily journal in which they were asked to describe what they saw, reflect on what they thought about what they saw, and what they wondered as a result.

Literature Review

The conceptualisation of reflective thinking was first coined by Dewey (1933). He described two types of mental processes: uncontrolled thoughts, and controlled, focussed thoughts. The later he called reflective thinking. For Dewey, this form of thinking arises from situations of perplexity or uncertainty which then trigger a person to inquire and find information to resolve the tension. It can be argued that all good teachers intuitively are reflective thinkers. Because they work in a social environment, self-reflection or the ability to interrogate one's own practice is central to what they do. Recalling and reviewing is essential to refining and improving practice (Barth, 2004).

More recently, Campbell-Jones & Campbell-Jones (2002) define reflective thinking in a teaching context as an inner dialogue with oneself whereby a person calls forth his or her

own experiences, beliefs and perceptions about an idea. Valli (1997) defines it as a conscious and systematic mode of thought. These definitions are largely descriptive and somewhat vague. Milner (2003) and Schön (1991) describe reflective thinking in terms of a process. For Milner, reflective thinking enables teachers to authentically and critically reflect upon their teaching as part of an interactive process. For Schön, the process revolves around building a theory of knowledge based upon experience. He points out that professionals such as teachers work in 'messy swamps' filled with uncertainty, and therefore artistic and intuitive practices such as the ability to reflect are essential. Importantly in the context of this project, Schön notes that the value of reflective practice as a form of action research is often dismissed as being at odds with prevailing scientific methods based upon certainty and definable objective parameters.

Risko, Roskos & Vukelich (2002) define reflective thinking as an outcome-based process. For them, reflective thinking is about informing and transforming functions of knowledge. Reflective thinking leads to change in thought and /or action. Epps (2008) concurs. She states that reflection can provide personal learning leading to transformation; that understanding self builds self-actualisation. Reflective thinking therefore is about understanding, adapting and assimilating change.

Many undergraduate courses actively encourage pre-service teachers to reflect on practice as part of a process of making sense of the theory they learn and its application in the real school environment (Churchill et.al., 2011; Contich, 2006). Churchill et.al. paraphrase the rationale for this as 'how do I do this teaching stuff and how can I survive in this new role'. Reflecting in such a way becomes an important part of the process of developing a personal theory of teaching (Marland, 2007). Churchill et.al. (2011) describe four reflective dimensions in relation to the development of a personal theory of teaching:

- The teacher craft that develops through reflection and practice in the classroom over time
- The beliefs and personal efficacy that develop over time, and reflections about teaching in the context of the community in which the teacher operates
- The impact of personal and life experiences on beliefs about teaching
- The impact of formal educational experiences

Thus reflecting upon the past and present as well as the personal and professional, contribute to building a personal theory of teaching. To support the process, Hobs (2007), Pedro (2005) and Milner (2003) all promote the value of journals as vehicles for formalising thinking about and acting on thoughts; in effect, theory building.

Journalling

There is a large body of literature within the service providing professions which advocate journaling as a reflective tool (Conway et.al., 2012; Churchill et.al., 2011; Epps, 2008; Contich, 2006; Tilman, 2003). Ruthman et.at., (2004) state that journaling is an excellent process for connecting theory with practice, and developing the ability to reflect on practice. Reporting on a study involving early career music teachers, Contich (2006) stated that "the tool of reflective writing helped participants clarify their thoughts and solidify their learning. Journaling allowed them to analyse their personal strengths and areas they wanted to strengthen in relation to the concepts and skills they were learning" (p.44). Kessler et. al. (2004) concur, stating that journal reflections have the potential to increase self-awareness.

While advocated by researchers in undergraduate courses, Hiemstra (2001) claims that journaling remains underused as a tool in authentic settings. He states that journaling is useful for recording personal thoughts, daily experiences and evoking insights. Journaling involves

conversations with self, and over time, a progressive clarification of insights is possible. Importantly in the context of this project, Hiemstra notes "there is also the potential for a journaling technique to promote critical self-reflection where dilemmas, contradictions and evolving worldviews are questioned or challenged." (p.20). He then describes a range of journal formats, including:

- Learning journals – handwritten records of thoughts, reflections, feelings, personal opinions and even hopes and fears during an educational experience,
- Diary journals – daily journals used to record thoughts, reactions to learning experiences and even innermost fears. They are largely unstructured, chronological recording of events, and
- Professional journals – journals deliberately written with other readers in mind.

Without promoting one form of journaling over another, Hiemstra (2001) describes the benefits of journaling in general in relation to personal growth and development, whereby the integration of life experiences with beliefs represents an investment in self through a growing awareness of personal thoughts and feelings. He also describes their role in formalising intuition and self-expression as 'learning to trust the inner voice' (p.24). He advocates their use in problem solving and stress reduction. In limited support, Bruce (1998) cites medical research in which journaling was reported as effective in helping release pent-up emotions in psychiatric patients following traumatic experiences. Finally, Hiemstra advocates journaling in a critical thinking role, in helping the correspondent find meaning in what is being examined.

When considering the term 'critical' in the reflective journaling context, Churchill et. al. (2011) state that 'critical' implies criticising, or finding fault. This narrow perspective masks a wider definition which implies digging deep to uncover strengths, enabling conditions and benefits as well as shortcomings, barriers and disadvantages. Thus, critical reflection involves taking a holistic and balanced view of experience, events or situations. Moon (2000) defines critical thinking as a process of challenging what appears obvious and questioning received wisdom. For Moon, critical involves deconstructing events as "situating one's own actions in larger cultural, social and societal contexts to make sense of them and think about productive ways forward" (p.446). Larrivee (2008) describes critical in a reflective context has having both inner and outer foci: "teachers who are critically reflective focus their attention both inwardly at their own practice and outwardly at the social conditions in which these practices are situated' (p.343). Larrivee states that critical reflections go further than making sense of a situation. Critical reflection is part of an action research cycle whereby thoughts and actions are constantly reviewed both in terms of the contextual situation and the individuals' place within the situation. Both thoughts and actions are reviewed and transformed as part of an ongoing and iterative cycle. By implication, critical reflection involves the ongoing ability to take a wider view of a situation and work through ways forward for the individual within situations they find themselves in, and journaling offers a powerful medium for helping with this process.

However, in an extensive review of the literature in nursing education, Epp (2008) states that the biggest issue associated with journaling is not recognition of its value as a reflective tool, but the need to facilitate the structuring and use of journals to be effective tools. She states that there has been limited research into the efficiency of critical journaling as a reflective tool in any field, and researchers have found that journals are often used at the lower levels of reflection i.e. they rarely extend beyond the descriptive (Richardson & Maltby, 1994; Williams et.al., 2002; Wessel & Larin, 2006). Further, little research exists from the actual journal writer's perspective. Conway et.al. (2012) and Pedro (2005) state that not all learners in an education setting find journaling useful, and not all learners are able to write well. Mallik (1998) states that journaling is more effective when a dedicated time is

provided at the end of the day to complete entries, and Landeen et. al. (1992) claim that journal writing is a learned skill. They state that most writers move from a position of describing events to reflecting upon and analysing their reactions over time. Further, Conway et.al. (2012) note the need to distinguish between reflective journaling which involves a critical component, and journal writing which is largely descriptive. Therefore, while a degree of consensus can be found within the literature with regards the value of journaling as a reflective tool, research also suggests that effective journaling is an acquired skill requiring a structural template and practice, and is aided by strategies such as the allocation of dedicated writing time.

Structuring journals

Epps (2008) notes the importance of facilitators in setting out a structure for journal users. Tilman (2003) describes the value of a combination of dialogic journaling whereby individuals maintain a written dialogue with each other, while also engaging in personal reflection. While recommending this as a structure, Tilman also acknowledges its cumbersome nature and its reliance on organizers. Churchill et. al. (2011) describe the problem of the meno paradox occurring among inexperienced journal writers, whereby the writer knows what to do but not how to do it because they don't know how to begin. In addressing the issue of structure, Smyth (1987) set out progressive stages for guiding the writing process. The stages are based around four actions: describe, inform, confront and restructure, and Smyth's model is presented in figure 1.

Action	Question
They describe what happened	What did I do?
They question what the experience meant	What does this mean?
They confront their own value system	How did I come to be like this?
They reconstruct	How might I do things differently?

Figure 1: Stages of reflective practice (Smyth, 1987)

Stage one in Smyth's model implies a narrative, descriptive approach: 'when experiences are revisited in our memories, they tend to become rewritten...writing means one has to be clear about what actually happened. The focus of the writing is on who, what, when and where' (p.484). Stage two involves the process of bringing forward and unpicking situations, moments and critical incidents. Importantly in the context of this article, Smyth states that stage two can be enhanced before writing by group discussion. Sharing provides an opportunity to reflect one's own meaning when in a safe environment. Smyth describes stage three as involving the writer moving out of their comfort zone to examine their assumptions, values and beliefs, and also acknowledge constraints. According to Churchill et. al. (2011), this can be painful and even dangerous because beliefs are part of self concept rarely exposed to the light of scrutiny. Once exposed, the writer has the choice whether to maintain existing beliefs or change. The final stage, reconstructing, is part of an action cycle. Smyth (1987) states that without an active stage, the process remains speculative. To change or not to change is informed by the writing and critical reflective process.

Smyth's model provides a structure for journaling but it is designed within a western education paradigm especially for classroom practitioners, and its organizers have a strong 'inner' focus. However, as a starting point for this project, the model's process of moving from the descriptive to the analytical provides a valuable template for guiding the writing process. To accommodate greater contextual flexibility and both inner and outward foci, the research team also examined a simpler model which also advocates a structured thinking

approach; the 'see, think, wonder' Visible Thinking Routine (Harvard Graduate School of Education, 2009). Created by the Harvard Graduate School of Education as part of its Project Zero, 'see, think, wonder' is one of a number of Visible Thinking Routines developed as part of its Visible Thinking Program. The thinking routines are designed to be 1) simple and easy to understand, 2) goal oriented in that they target specific types of thinking, 3) sequential in that they offer only a few structured steps and 4) flexible in that they can be integrated (used by an individual or a group) and used in a variety of contexts.

While specifically designed to promote critical thinking processes in children, the Visible Thinking Routines have the flexibility for potentially wider applications. The 'see, think, wonder' approach is based upon encouraging students to make careful observations and thoughtful interpretations while stimulating curiosity and setting the stage for inquiry. Like Smyth's model, this model employs conceptual organizers which move from the descriptive to the analytical and potentially transformative:

- What do you see?
- What do you think about?
- What does it make you wonder?

The process involves students making observations, then following up what they think is going on, and finally giving reasons to back up their interpretations. Being asked to wonder about what they think in effect, asks them to critique their beliefs and values. The 'see, think, wonder' routine is designed as a written routine but is also intended as a structure for guiding group discussions (Harvard Graduate school, 2009).

The research team was attracted to 'see, think, wonder' because it maintained the integrity of Smyth's hierarchical approach of moving from the descriptive to the analytical. As a writing-based routine, it had the flexibility to be applied to journaling. Its attraction lay in its simplicity and its application in authentic settings; the thinking organizers accommodate Larrivee (2008) in promoting an inner focus of formalising thoughts about an individual's actions, and an outer focus on the social conditions in which actions are situated. The organizers imply a movement from detached description to analysis and inner transformation as reflection absorbs and builds new beliefs.

Based upon the literature review, it would appear that there is a degree of consensus with regard the value of journaling in formalising the reflective process. Journaling is advocated as a tool for integrating experiences, problem solving and stress reduction, but most importantly, when used in a broader critical role, for deconstructing events to make sense of them and productively move forward. However, the literature review also highlighted the need for journaling to be guided by a hierarchical writing structure as a method of organising thoughts, and the value of support strategies such as group discussions and dedicated writing time. All of the above informed the data gathering design of this project.

Method
Participants

Five teachers took part in the Tanzanian mentoring project. They were selected from a pool of 45 teachers who indicated an interest after the project was advertised through the research team's networks. All interested teachers were asked to submit CVs and attend an introductory meeting facilitated by the research team. About 30 teachers actually attended. At the meeting, the nature of the project was explained, and the group was then randomly split into three smaller groups for focus group discussions, each facilitated by a member of the research team. Individuals within each focus group were asked to respond to a series of

generic questions relating to their motivation for the project and teaching in general. Subsequent to the meeting, the research team met and selected the final five, based upon:

- A mix of ages, years of teaching experience and subject expertise
- Motivation for the project
- General dynamics and personality
- A mix of systems and sectors

The final group included a private secondary school music teacher, a government secondary school science teacher, a private secondary school geography teacher, a government school primary deputy principal and a government generalist primary school teacher. Participants ranged in teaching experience from three years to nearly 20, and ranged in age from 23 to 50. All five teachers were unpaid volunteers who were granted leave from their regular school commitments.

All participants undertook a series of information / training sessions with the research team prior to departure. Aside from discussions about Tanzanian teaching conditions and potential teaching strategies and ideas that the WA teachers could share with their Tanzanian colleagues, the nature of action research and the central role of the journals in evaluating this project was explained. Participants were fully briefed on the purpose behind journaling their experiences, the 'see, think, wonder' approach, and how the information gathered from the journals would be used by the research team.

Procedures

The research team accompanied the teachers to Tanzania for the first week of the project to ensure a smooth transition for all involved. In addition, a research assistant (a mature-age undergraduate student) accompanied the team as a non-teaching support team member. The research team ran an introductory one-day conference in which both Tanzanian and WA teachers participated as a means of 'breaking the ice'. The WA teachers were then assigned in pairs to schools (participating schools were drawn from the Australia Tanzania Young Ambassador network), and were accompanied for the first week by members of the research team as additional support.

Based upon recommendations by Mallik (1998), the teachers were encouraged to set aside a dedicated writing time every night after the evening meal. In addition, based upon Smyth (1987) and Harvard (2009), the teachers were encouraged to meet every afternoon at 5pm for a mutual debrief. Affectionately known as 'beer o'clock', the meeting was intended as a support mechanism for the principle activity of journaling. The teachers were able to deconstruct the day's events as a means of helping formalise their thoughts before completing their journal entries. Upon return to Australia, the diaries were collected up, scanned and returned to their owners. Scanned copies were distributed among the research team for analysis. In addition, a group interview was also conducted approximately one week after the teachers' return in which their beliefs about the process and value of the journaling exercise was discussed. This took place before formal analysis of the diaries commenced. Further email correspondence in the form of clarifications took place with individuals on a needs basis.

Data Analysis

From the outset, journaling was intended to serve a dual purpose. The research team was aware that the WA teachers would be operating outside their comfort zones, and that the

project had the potential to confront their established beliefs about teaching and learning. Accordingly, journaling was intended as a survival strategy to help the teachers come to terms with what they might encounter in Tanzania. However, as this project represented a new approach to cross-cultural teacher exchange between first and third world partners, the research team needed a method of gathering data and assessing the value of the project from the Australian stakeholders perspective. Data analysis was guided by both needs, although the focus of this article is upon journaling as an effective reflective tool.

Teachers

Both Epps (2008) and Conway et.al. (2012) noted the importance of examining journaling from the participants' perspective. Accordingly, upon returning to Australia, teachers were asked to respond to a series of ten focus questions. The focus questions are presented in figure 2.

Number	Question
1	Did you find the idea of journaling a useful mechanism / outlet for your experiences in Tanzania? Was it useful writing about what you encountered?
2	Did you find the process of journaling useful in terms of making sense of your experiences, coming to terms with what you encountered?
3	Was the process of writing the journal daily an onerous one?
4	Was the process of 'see, think, wonder' useful in terms of helping organise your thinking and writing?
5	Did the 'see, think, wonder' process help you develop deeper insights into what you experienced, and how to cope?
6	Would you have got as much out of the whole project and survived without the journals?
7	Was 'beer o'clock' a useful support strategy?
8	Was holding beer o'clock at the end of the day the best time to meet and debrief?
9	Did any collegial discussions from beer o'clock help you in terms of your diary writing – i.e. helped you consolidate your thoughts which you later recorded in your diaries?
10	Do you have any general thoughts on whether you found critical journaling useful? How might it be done differently? How might it be improved?

Figure 2: Journaling evaluation teacher focus questions

The focus questions were loosely grouped into three themes: 1) questions relating to journaling, 2) questions relating to the 'see, think, wonder' structure, and 3) questions relating to 'beer o'clock' debrief as a support mechanism. Data was grouped directly under each question for each respondent, and then summarised by questions and themes.

Research Team

The research team sought to evaluate journaling as an action research approach in helping them understand the participating teachers' experiences in this specific cross-cultural setting, and the resultant impact upon their beliefs about teaching and learning. In a broader sense, they sought to evaluate the usefulness of journaling as a research tool in general. As noted in the literature review, journaling has been widely advocated as a reflective tool for beginning teachers and experienced teachers seeking promotion, but not in the context of experienced teachers in potentially confronting situations which can potentially challenge established beliefs about teaching and learning. Further, questions have been raised about how best to structure and support the journaling process.

Accordingly, the principle mechanism for assessment was the diaries themselves. Each diary was analysed by each researcher for breath i.e. whether it was used daily, and how much was written on a daily basis. From there, diaries were examined for depth of writing i.e. whether entries were largely descriptive or moved beyond into the critical and analytical – did the writers utilize the 'see, think, wonder' template to structure their thoughts. Finally, diary entries were considered from a transformative perspective i.e. how participants coped with the project overall, and whether their diaries evidenced changes in beliefs as a result of participation in the project.

Each diary was considered separately. In analysing the diaries, the research team employed a 'grounded theory' approach, in that they approached the data with no preconceived ideas regarding what they would find. An open coding process was initially employed whereby themes were identified directly from each diary. Each researcher began by reading the diaries and making margin notes which formed the basis of the initial codes. This process was followed by a two-stage axial coding process, whereby researchers considered the themes they had identified within the individual diaries, and then considered interconnected themes across diaries. Once these interrelationships had been fully explored and a 'story' was emerging, the researchers were then able to set forth a series of propositions which they felt made sense of the data and presented a story of the participating teacher's experiences.

Finally, in conjunction with the participating teachers' responses, the researchers felt confident in making a judgement about the value of journaling as a tool for critical reflection in projects such as this, and about journaling in related situations.

Findings
Teachers

All participants were asked to start their journals before leaving Australia, by reflecting upon their pre-existing beliefs about teaching. Most participants found this exercise valuable in beginning the reflective process.

It gave me the chance to think about it formally, in a way that I hadn't for a few years However, one teacher expressed their concern at this initial writing stage that formalising beliefs might lead to preconceived ideas and a closed mind. As expected, all teachers admitted feeling confronted to some extent by what they encountered in Tanzania, either in general terms and/or specifically in relation to schools and teaching, and all acknowledged the value of journaling in helping make sense of what they found. All described journaling as a useful and valuable mechanism / outlet.

> Journaling helped me sieve through my thoughts and make them clearer in my own head...
> [Journaling] allowed me to reflect upon and address some ethnocentric opinions I initially held and see the wider implications of the political situation in Tanzania and its impact upon schools and staff.
> Journaling helps you make sense of things and helps you release frustration and helps you celebrate successes....

While its value as a reflective tool was acknowledged, some found the process of journaling an onerous one because of fatigue at the scheduled writing time at the end of the day, and just the time needed to think and write at a deeper level.

> It was a good thing that the expectation was to write every night, because otherwise it would have just gone by the wayside.

There was general consensus among participants of the value of the 'see, think, wonder' framework as a thinking process for moving from the descriptive to the analytical. Some participants used 'see, think, wonder' literally as a device for structuring their daily journal entries, while others wrote in a more narrative style guided by the three levels of thinking. One participant described using it on a needs basis, finding particular value in wondering in relation to bigger picture issues. All agreed on its usefulness in guiding their reflective thinking, and all noted that this approach became intuitive over time and with practice.

> The 'see, think, wonder' process helped to direct my thoughts deeper than where they may have stayed. I think without it my journal would have merely been descriptive. I liked the framework. It led to great opportunities for reflection and making sense of our experiences.

In relation to the Harvard thinking framework, two participants made particular reference to the value of the 'wonder' stage, but also indicated a degree of frustration in their inability at times to translate wonder into action, especially in the early stages of the project.

> The wonder part was what I found most interesting but sometimes bugged me that I simply couldn't find solutions.

In relation to 'beer o'clock' debrief as a support strategy, there was universal agreement as to its value, described as follows:

> ..presented as a verbal support or collegiate camaraderie input with solutions, opportunities to express impact or disappointment at an outcome or event, and connectivity...

One participant described it as a chance for consolidation and reflection on the feedback of others, and it was particularly valuable in terms of diary writing.

> Yes, it was most helpful in sorting out immediate thoughts and reactions to what had gone on in the day, and gave at least another opinion to be able to consider in reflection...it gave us a place to air our thoughts and feelings...and have immediate feedback, as opposed to the journals where it's all one sided.

The timing of beer o'clock in the late afternoon was universally praised because it helped participants summarise their day and start the next with a new outlook or approach. In relation to the act of journaling, one participant described identifying key events in their diary before the debrief, then adding clarifications into their journal after the debrief.

When asked to consider possible improvements to the process and/or structure, two participants suggested adding specific categories or topics for reflection; thus applying the 'see, think, wonder' to specific topics such as schools, teachers, parents, resources etc, while another suggested the possible use of video diaries to alleviate the tediousness of writing. However, the same participant also acknowledged that the act and pace of writing was more conducive to deep reflection.

In summary, the participants themselves indicated general support for journaling as a reflective tool, and support for the process and flexibility offered by the Harvard thinking model. Most notably in terms of the literature review was participants' universal support for the 'beer o'clock' debrief as an opportunity to share and formalise deeper thinking, as an aid to the reflective process. From these initial responses, the researchers concluded that while journaling may be a useful reflective tool, it does require an explicit yet flexible structure to guide the thinking process, and does require support mechanisms such as the opportunity for group reflections in a safe environment, and a dedicated writing time. Participant responses initially appeared to confirm that quality reflective journaling is an acquired skill which can guide a writer towards describing and resolving tensions, and identifying potential solutions as part of an action cycle, as long as the process is structured and supported.

Research Team

Initial examination of the diaries indicated that they were extensively used during the project. The shortest diary was 94 pages long, and the longest was 195, with an average of 137 pages per participant. In real terms, this represented an average of approximately four and a half pages of writing per day. While acknowledging that length is not necessarily an indicator of quality (some diary pages were given over to jottings), the fact that diaries were all handwritten on a daily basis indicated a considerable commitment to writing.

When diaries were individually examined for evidence of the 'see, think, wonder' framework, the researchers found that all participants interpreted the framework in different ways. As previously noted, one participant used 'see think wonder' as a structural device. Each diary entry was separated out under individual 'see, think, wonder' headings with approximately the same amount of written space devoted to each category on a daily basis. This diary comprised a strong outward focus of locating the writer in the wider social context, and a pragmatic action cycle of translating wonder into action was a strong central theme.

At the other end of the spectrum, another participant's diary was written in a narrative style with a strong emphasis on insightful observation building to 'big picture' wondering. About half the diary entries were given over to rich description, while the other half was devoted to a mixture of thinking and wondering in which the writer was centrally located. For this writer, daily diary entries were often largely descriptive and built up to a series of thinking / wondering themes considered in detail every third or fourth day. The writer's own feelings and beliefs were at the centre of entries, and diary entries were deeply personal in that the writer constantly questioned their own abilities and role in the project.

The remaining diaries presented a mixture of the two extremes. One participant used the 'see, think, wonder' framework in a semi-structured way. Daily entries commenced with descriptive observations and were followed by a combined 'thinking/wondering', and consideration of the implications for action. While more structured in the style of participant one, this writer located themselves strongly in the daily entries, and the diary was much more personal and 'inner' focused, in the manner of participant two. Yet another diary was written in the narrative style of participant two, but in a much more detached and impersonal way. For this writer, the diary contained a strong 'outer' focus in the manner of participant one.

Upon examination, it was evident that each writer interpreted the reflective thinking framework differently. While this may be considered a weakness of the Harvard framework as set out for this project, the researchers saw it as a vindication, as the flexibility of the framework allowed each writer to utilise it in a way which suited them, rather than comply with a more rigid and potentially constricting framework. Each writer was able to write to their strengths. Most importantly, close examination and analysis of each diary revealed that at least half of each diary was taken up with non-descriptive entries in which key issues, events and situations were identified and deconstructed in varying degrees of detail and depth. Thus, the key finding would appear to be that the flexibility of the 'see, think, wonder' framework allowed for each participant to write with their own voice, while still providing a structure for moving reflection beyond the mere descriptive, and into an integration of experience as part of an action based cycle.

While detailing the stories relating to the individual teacher participants' experiences and reconstruction of their personal beliefs about teaching is not the focus of this article, the value of the diaries as a research tool in recording this process is worth noting. Four key themes emerged from analysis of the diaries, and these themes were consistent across all diaries, albeit in different strengths and within slightly different timeframes. A summary of the four themes identified by the researchers is set out in table 1.

Theme	Explanation
The focus	All participants began their diaries by focusing on their own beliefs, the purpose of the project and what they could contribute, and noted the value the project preparation, including the in-country conference at the start of the project. Diaries indicated a degree of self belief as teachers, and a earnest desire to make a difference.
The doubt	Once the project started, all participants were confronted either by the external setting in Tanzania, or by self doubt as what they could realistically achieve in their mentoring roles. The reality of the different social and teaching contexts caused some to question what they could offer the project. Self doubt for some included the questioning of their own abilities as teachers. Some participants moved quickly through this stage, while others grappled with it for longer.
The transformation	The research structure of the diaries, the thinking process and the support strategies such as beer o'clock provided both a physical and intellectual space for participants to reflect and reassess their worth, leading to the development of strategies for implementation as part of an action based cycle. Action was largely trial and error.
The niche	All participants described finding a personal niche within the context of the project, based upon a reassessment of their skills, abilities and beliefs as teachers. Three participants diaries indicated a genuine transformation in their personal teaching philosophies which will inform their teaching upon their return to Australia.

Table 1: Tanzania project key diary themes

In a broader sense, the 'see, think, wonder' stages emerged from the diaries as a developmental thinking model as participants became more familiar with the critical thinking process. For example, the researchers identified the focus stage and early stages of doubt as roughly equating with 'seeing' – diaries were largely weighted towards the descriptive, especially in the initial stage of the project 'on the ground' in Tanzania. Participants could identify and describe confronting issues, but were not quite sure how to reconcile or resolve them. The transformation stage roughly equated with the 'thinking' stage, as participants strove to make sense of the situation and the context, reassess their beliefs and develop coping strategies which accommodated changes to their belief systems. This is where the diaries, the thinking scaffold and the reflective support mechanisms came into play. The niche stage roughly equated to the 'wonder' stage, as participants were able to reconcile their existing beliefs about teaching, and develop and implement change. They learned not only how to identify and describe, but think through, implement and assess the strategies they developed. In effect, they had become more skilled in interrogating their own practice and resolving some of the tensions generated by the different teaching context in Tanzania.

For the researchers, the emergence of the 'see, think, wonder' framework as an overarching thinking structure within each diary reinforced the idea that quality critical reflective thinking leading to changed thoughts and action is indeed a learned skill. As the participants in this project became familiar with the reflective process, so the quality of their abilities to respond through action improved. However, it was also evident that journaling on its own was not enough – in this project, effective reflective journaling benefited from support mechanisms such as regular debriefing, dedicated writing time, and a clear structure for guiding the reflective process.

Discussion

The richness of the writing contained in the diaries suggested that journaling is an effective data gathering tool for researchers, and an effective action inquiry-based reflective tool for teachers in unfamiliar or confronting settings. From the perspective of the teachers involved in this project, the diaries were utilised extensively, and teachers acknowledged the

value of the diaries in helping clarify thoughts and make sense of things. There was general consensus that journaling helped participants cope with the tensions and challenges they encountered in Tanzania.

However it was also clear that journaling alone was not enough. Teachers strongly endorsed the writing support mechanisms, namely the daily 'beer o'clock' debrief, as advocated by Smyth (1987) and the allocation of a dedicated writing time, as advocated by Mallik (1998). The daily debrief gave teachers the opportunity to reflect upon the day, discuss and seek ideas from their fellows in a safe and mutually supportive environment. It provided an opportunity for consideration of other opinions to broaden individual reflections, and gather immediate feedback based upon experience and past reflection. In this sense, a debrief may be central to effective journaling practice where action based upon critical reflection is a desired outcome. Further, a dedicated writing time may provide a discipline that may not normally occur.

Teachers also indicated support for the Harvard thinking model as a framework for structuring their thinking. While some utilised the framework literally and others interpreted it more loosely, all agreed that it was useful in helping them organise their thoughts, especially when their pre-existing beliefs about teaching and learning were challenged in the early stages of the project. The Harvard model provided a structure for guiding deeper thinking leading to actions which resolve tensions.

Overall, the act of formalising thoughts via a journal would appear to be an appropriate reflective mechanism for sieving thoughts in situations of perplexity or uncertainty, especially when undertaken in conjunction with supporting strategies such as a daily debrief. Given the participating teacher feedback from this project, the value of journaling may extend beyond its traditional pre-service teaching, early career teaching or promotional usage boundaries. Further, teacher feedback supports the notion of assessing the value of journaling from the participants' perspective.

For the researchers, the journals provided a rich and detailed source of information about the participating teachers' experiences. The journals helped provide insights into the challenges they faced, their coping strategies and subsequent shifts in their belief systems. While journals can provide a quantity of data, the researchers were interested in the quality of data. They were mindful of the literature review assertions that journals are often used at the lower level of reflection, and can be largely descriptive (Wessel & Larin, 2006). Thus there was a danger in gathering a gather a lot of information about very little.

From a research perspective, a real strength of this project has been the affirmation of the Harvard thinking model as a structure for guiding the reflective thinking process. While its value to the participants has already been noted, from an analysis perspective, the researchers found it powerful in discriminating the participants levels of thinking, understanding how participants resolved some of the tensions they encountered, and their resulting actions. Its simplicity and flexibility may be its greatest strength; it can be used as a structural device, or as a general guide for the thinking process. It does not limit the writer to locating their thinking with an outward focus on external situations or events, or an inner focus where they are centrally located. Thus, it becomes a way of guiding thinking in an idiosyncratic way for the writer while offering a framework for analysis for the researcher. Given the increasing quality of the thinking contained in the journals, it supports Landeen's (1992) finding that journaling is not an innate skill, but rather an acquired one. Whether the same quality of thinking could be garnered by another thinking framework, such as Smyth's is in some ways a moot point; the fact is that thinking needs to be guided by something! It supports Epps' (2008) statement that the issue is not recognition of the value of journaling as a reflective tool, but rather structuring it to maximise its effectiveness and impact, both for the writer and the reader, be they university pre-service examiner or formal researcher.

The researchers also defer to Hiemstra (2001) who stated that journals need to be written in authentic situations. He stated that daily conversations lead to progressive clarifications, and this appeared to be the case in this project. The clear progression in the quality of reflection found in the participant journals demonstrates the importance of immediacy in the reflective process. Reflection is best commenced while fresh in the mind, although potential resolutions may come later. The importance of other findings relating to support mechanisms such as the regular debrief and the dedicated writing time are largely self-evident and have already been noted.

Did the participants in this project write what the researchers wanted to hear? This can be an issue for any research project as the writer can write with the reader in mind. Given the experience and motivation of the participants, and the quality and depth of the writing, the researchers feel confident of the face value validity of what they have been presented with. While the participants were aware of the journal evaluation research component of this project, the principle function of the journals was to provide them with an effective reflective mechanism for making sense of what they encountered in Tanzania. The research component was not the primary driver of the journals in this project.

Conclusion

Teaching is a rich and complex profession. As Schon (1991) stated, teachers work in 'messy swamps' where the ability to reflect and interrogate one's own practice is central to growth and development. Teachers' beliefs systems are constantly being challenged, and the ability to think through, absorb and act upon challenges defines quality teaching. However, quality critical reflective thinking is an acquired skill, and teachers need tools to help develop these skills effectively and efficiently, especially when they are placed in unfamiliar situations of perplexity or uncertainty.

This article has explored the potential of journaling as one critical reflective tool. It has identified wide-spread support for the concept of journaling, but also identified limitations largely surrounding the act of journaling. An important element of the Tanzania project described in this article was identification of the limitations in advance. The researchers endeavoured to put into place mechanisms and structures designed to maximise the potential effectiveness of the journaling process, from both the participant and researcher perspective. As a result, the researchers feel confident in advocating journaling as a critical reflective thinking tool, provided:

- Journal writers are provided with a clear template for guiding the critical reflective thinking process. In this sense, the researchers are confident in advocating the Harvard 'see, think, wonder' Visible Thinking Routine as a structural model for guiding the process.
- The template is flexible enough to accommodate individual writing and thinking styles within a wider thinking framework. Again, the researchers are confident that the Harvard model fulfils this requirement.
- The process is supported by the opportunity for group discussions in a safe and mutually supportive environment.
- The act of journaling is undertaken in an authentic setting as events unfold, and approached regularly in a disciplined way. Like any acquired skill, the development of deeper critical thinking requires practice, best undertaken while events are still fresh.

For the researchers involved in the Tanzania project, journaling provided a rich source of information and feedback on the project. For the teachers involved in this project, journaling provided a valuable means of making sense of their experiences and assimilating them in a systematic and structured way, and therein may lie the true value of this projects findings: that journaling can be a valuable reflective tool with potential application beyond the immediate confines of the pre-service university course, or those seeking promotion in schools. Journaling may be a valuable tool for any teacher in a potentially challenging and confronting situation where their underlying beliefs may be challenged. Journaling can be an effective outlet for thoughts and tensions, and if appropriately structured, an effective mechanism for helping resolve those tensions as part of an action inquiry cycle.

> Writing the journals was good, particularly when needing to write questions that I could find answers to as time went along – things that I didn't understand, and things that were important for me to seek answers to....

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